



# **The State of Minority- and Women- Owned Business Enterprise: Evidence from Mississippi**

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## About the Project Team

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NERA's employment and labor experts advise clients on a wide range of issues both inside and outside the courtroom. We have provided expert testimony on statistical issues both at the class certification phase (on issues of commonality and typicality) and at the liability phase (for class or pattern-and-practice cases). Our experts have extensive experience examining issues of statistical liability in discrimination and other wrongful termination claims. We also provide detailed statistical analyses of workforce composition to identify potential disparities in hiring, layoffs, promotions, pay, and performance assessments, and have conducted studies on labor union issues and on affirmative action programs for historically disadvantaged business enterprises.

NERA Senior Vice President Dr. Jon Wainwright led the NERA project team for this Study. Dr. Wainwright heads NERA's disparity study practice and is a nationally recognized expert on business discrimination and affirmative action. He has authored books, papers, and numerous research studies on the subject, and has been repeatedly qualified to testify on these and other issues as an expert in state and federal courts. At NERA, Dr. Wainwright directs and conducts economic and statistical studies of discrimination for attorneys, corporations, governments, and non-profit organizations. He also directs and conducts research and provides clients with advice on adverse impact and economic damage matters arising from their hiring, performance assessment, compensation, promotion, termination, or contracting activities.



## About the Project Team

**Abt SRBI** is a New York-based business with a national reputation for excellence in computer assisted telephone interviewing. Abt SRBI provides analysis in the rapidly evolving markets and public policy areas of communications, financial services, utilities, transportation, media, health and business services. The firm was founded in 1981 for the explicit purpose of combining high quality analytic capabilities with in-house control of the research implementation to ensure accurate, timely and actionable research used by decision makers working in rapidly changing environments. Abt SRBI clients include the Eagleton Institute at Rutgers, the Annenberg Institute at the University of Pennsylvania, and the major networks. Abt SRBI has conducted numerous surveys of DBEs and non-DBEs on behalf of the NERA team. On this assignment, Abt SRBI conducted telephone surveys of race and gender misclassification and of mail survey non-response under the supervision of Abt SRBI Project Manager, Andrew Evans.

**Betty A. Mallett, PLLC** is a Jackson, Mississippi-based law firm that provides transactional and litigation representation to public and private entities throughout the State of Mississippi. Its principal, Betty A. Mallett, is a former Deputy City Attorney for the City of Jackson, and assisted in the supervision of the City's disparity study and development of the City's equal business opportunity program. The law firm provides legal advice and assistance to local and state government entities regarding issues of diversity in public contracting and Minority Business Enterprise program development and reform. On this assignment, the firm assisted with concessions data collection, publicizing and populating the business interview sessions, policies and procedures review, and drafting selected portions of the study and recommendations.

**Colette Holt & Associates** is an Oakland, California-based law practice specializing in public sector affirmative action programs. The firm provides legal and consulting services to governments and businesses relating to procurement and contracting; employment discrimination; regulatory compliance; organizational change; program development, evaluation and implementation; and issues relating to inclusion, diversity and affirmative action. On this Study, the firms provided a review of relevant case law, conducted interviews with JMAA officials and with business owners, and drafted selected study findings and recommendations.

**J&D Data Services** is a small business enterprise owned by Mr. Joe Deegan and based in Plano, Texas. After a long career with ScanTron, Mr. Deegan started his own business to offer a solid and proven alternative to the time consuming and expensive job of key data entry long associated with mail surveys. The firm helps its clients conserve their surveying resources by designing and delivering survey instruments that can be electronically and automatically scanned upon return and sent directly to electronic format. J&D Data Services has conducted numerous surveys of DBEs and non-DBEs on behalf of the NERA team. On this assignment, they provided printing, postage, mail-out and mail-back service for the subcontract data collection, and the mail survey.



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## **Executive Summary**

### **A. Introduction**

The Jackson Municipal Airport Authority (“JMAA”) commissioned this study to evaluate whether minority-owned and women-owned business enterprises in JMAA’s market area have full and fair opportunities to compete for its prime contracts and associated subcontracts.

To meet its regulatory obligations, among other things JMAA is required to: (1) compile statistical information concerning the past utilization of minority-owned and women-owned firms as prime contractors, prime consultants, subcontractors, subconsultants, suppliers, and truckers; and (2) estimate the percentage of minority- and women-owned business enterprises (which we will refer to as “DBEs” regardless of their certification status) in various industry categories that could potentially become certified as DBEs. The purpose of this Study is to assist JMAA to fulfill these two regulatory requirements.

The results of the 2012 Study provide the evidentiary record necessary for JMAA’s consideration regarding the implementation of renewed DBE policies or the continuation of M/WBE policies that are responsive to the evidence and that comply with the requirements of the courts. The Study also will help in assessing the extent to which prior efforts have assisted minority-owned and women-owned firms to participate on a fair basis in JMAA’s contracting activity.

The 2012 Study finds statistical evidence of business discrimination against DBEs in JMAA’s market area. These findings are presented in Chapters V and VI. Statistical analyses of JMAA’s own contracting are contained in Chapters III, IV and VII. As a check on our statistical findings, we surveyed the contracting experiences of DBEs and non-DBEs in the market area and also conducted a series of in-depth personal interviews with DBEs and non-DBEs throughout the market area, both of which document significant past and present business discrimination affecting DBEs.

### **B. Legal Standards for Government Affirmative Action Contracting Programs**

To be effective, enforceable, and legally defensible, a race- and gender-based program must meet the judicial test of constitutional “strict scrutiny.” Strict scrutiny requires a “strong basis in evidence” of the persistence of discrimination, and any remedies adopted must be “narrowly tailored” to address that discrimination.

Compelling interest has been met through two types of proof:

- Statistical evidence of the underutilization of minority firms compared to their availability in the agency’s market area, known as disparity indices.
- Anecdotal evidence of race-based barriers to the full and fair participation of minority firms in the market area and in seeking contracts and subcontracts with the agency.

The narrow tailoring prong has been met through the satisfaction of five factors to ensure that the remedy “fits” the evidence:

- The efficacy of race-neutral remedies at overcoming identified discrimination.
- The relationship of numerical benchmarks for government contract and subcontract spending to the availability of minority- and women-owned firms and to subcontracting goal-setting procedures.
- The congruence between the remedies adopted and the beneficiaries of those remedies.
- Any adverse impact of the relief on third parties.
- The duration of the program.

Federal appellate and district courts have developed parameters for the application of these principles to individual programs. This Study for JMAA follows the requirements of the case law and the guidelines recently published by the *National Academy of Sciences*, which NERA was proud to develop.<sup>1</sup>

Chapter II provides a detailed and up-to-date analysis of current constitutional standards and case law and outlines the legal and program development issues the Airport must consider in evaluating its DBE Program and any future initiatives for locally funded contracts, with emphasis on critical issues and evidentiary concerns.

### **C. Defining the Relevant Markets**

Chapter III describes how the relevant geographic and product markets were defined for this Study. These definitions were derived empirically, based on the Master Contract/Subcontract Database assembled for the Study. The relevant geographic and product markets were then used to focus and frame the quantitative and qualitative analyses in the remainder of the Study.

The Master Contract/Subcontract Database contains information on 4,192 contracts and purchases made in Construction; Architecture, Engineering, and other Construction-Related Services (AE-CRS); Services; and Commodities, between Federal Fiscal Year (“FFY”) 2005 and 2010. Collectively, these contracts and purchases had an award value of \$70.4 million and a paid to date value of \$61.6 million. Among these 4,192 contracts and purchases, 198 were larger than \$10,000 and deemed to potentially have subcontractable opportunities.<sup>2</sup> These 198 contracts, although representing less than 5 percent of all contracts in the study universe, collectively accounted for more than \$50 million in contract payments, or over 80 percent of the universe total. We reviewed available DBE and non-DBE subcontract records and determined that they

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<sup>1</sup> Wainwright, J. and C. Holt (2010), *Guidelines for Conducting a Disparity and Availability Study for the Federal DBE Program*, Transportation Research Board of the National Academies, NCHRP Report, Issue No. 644.

<sup>2</sup> We assumed that contracts in Construction, AE-CRS, and Services had such opportunities, and that contracts for Commodities did not.

were incomplete for our purposes. In consultation with JMAA, NERA developed a plan to contact the prime contractors and vendors associated with these contracts in order to gather the required data. With JMAA's assistance, we were ultimately successful in obtaining the requested data for over 97 percent of the contracts and 98 percent of the contract dollars. These percentages are sufficiently large to be considered representative for statistical purposes.

Contracts and subcontracts in the database were catalogued according to FFY, whether they were federally-assisted or locally-funded, and whether they were for Construction, AE-CRS, Services, or Commodities. The firms performing these contracts and subcontracts were catalogued according to geographic location, primary industry code, race, and gender (see Tables 3.1 through 3.4).

The Master Contract/Subcontract Database was analyzed to determine the geographic radius around JMAA that accounts for at least 75 percent of aggregate contract and subcontract spending. JMAA's relevant geographic market area was determined to include the State of Mississippi (see Table 3.5).

The Master Contract/Subcontract Database was also analyzed to determine those detailed industry categories that collectively account for 99 percent of contract and subcontract spending by JMAA. We determined that JMAA's product market includes firms in 164 different North American Industrial Classification System ("NAICS") industry groups (see Tables 3.6 through 3.9).

### **D. DBE Availability in JMAA's Market Area**

Chapter IV estimates the percentage of firms in JMAA's relevant market area that are owned by minorities or women. For each industry category, DBE availability is defined as the number of DBEs divided by the total number of businesses in JMAA's contracting market area, weighted by the dollars attributable to each detailed industry. Determining the total number of businesses in the relevant market is more straightforward than determining the number of minority- or women-owned businesses in those markets. The latter task has three main parts: (1) identifying all listed DBEs in the relevant market; (2) verifying the ownership status of listed DBEs; and (3) estimating the number of unlisted DBEs in the relevant market.

Table A below provides an executive level summary of the current DBE availability estimates derived in the 2012 Study. Availability estimates for more detailed industries within the construction or consulting sectors appear in Tables 4.26 through 4.35.

Table A. Overall Estimated DBE Availability Percentages in JMAA's Market Area

	African American	Hispanic	Asian/ Pacific Islander	Native American	MBE	Non-minority Female	DBE	Non-DBE
<b>OVERALL (ALL CONTRACTS)</b>								
AWARD DOLLARS	10.10	1.20	0.78	0.81	12.89	14.48	27.36	72.64
PAID DOLLARS	10.36	1.21	0.78	0.74	13.10	14.36	27.46	72.54
<b>OVERALL (FEDERALLY-ASSISTED CONTRACTS)</b>								
AWARD DOLLARS	8.60	1.33	0.78	0.92	11.63	14.66	26.29	73.71
PAID DOLLARS	9.34	1.39	0.79	0.71	12.23	15.14	27.37	72.63
<b>CONSTRUCTION (ALL CONTRACTS)</b>								
AWARD DOLLARS	9.38	1.23	0.93	1.34	12.87	10.90	23.77	76.23
PAID DOLLARS	9.99	1.26	0.92	1.27	13.44	10.66	24.10	75.90
<b>CONSTRUCTION (FEDERALLY-ASSISTED CONTRACTS)</b>								
AWARD DOLLARS	6.96	1.12	0.99	1.48	10.56	11.71	22.27	77.73
PAID DOLLARS	7.79	1.15	1.07	1.22	11.23	11.68	22.92	77.08
<b>AE-CRS (ALL CONTRACTS)</b>								
AWARD DOLLARS	10.62	1.66	0.58	0.47	13.33	17.67	31.00	69.00
PAID DOLLARS	10.62	1.66	0.59	0.48	13.34	17.62	30.97	69.03
<b>AE-CRS (FEDERALLY-ASSISTED CONTRACTS)</b>								
AWARD DOLLARS	10.67	1.66	0.57	0.47	13.38	17.63	31.01	68.99
PAID DOLLARS	10.67	1.66	0.58	0.48	13.39	17.59	30.98	69.02
<b>SERVICES (ALL CONTRACTS)</b>								
AWARD DOLLARS	11.26	1.00	0.22	0.11	12.59	18.03	30.62	69.38
PAID DOLLARS	11.02	1.01	0.24	0.12	12.39	17.30	29.69	70.31
<b>SERVICES (FEDERALLY-ASSISTED CONTRACTS)</b>								
AWARD DOLLARS	9.96	1.57	0.12	0.11	11.75	17.12	28.88	71.12
PAID DOLLARS	10.35	1.55	0.23	0.17	12.30	16.37	28.67	71.33

	African American	Hispanic	Asian/ Pacific Islander	Native American	MBE	Non- minority Female	DBE	Non- DBE
<b>COMMODITIES (ALL CONTRACTS)</b>								
AWARD DOLLARS	9.65	0.84	2.69	0.35	13.54	21.00	34.54	65.46
PAID DOLLARS	9.66	0.84	2.69	0.35	13.53	21.02	34.56	65.44
<b>COMMODITIES (FEDERALLY-ASSISTED CONTRACTS)</b>								
AWARD DOLLARS	6.07	0.04	2.04	0.20	8.36	16.23	24.60	75.40
PAID DOLLARS	6.06	0.04	2.05	0.20	8.35	16.25	24.60	75.40
<b>CONCESSIONS</b>								
INCLUDING CAR RENTAL	6.97	3.16	6.22	1.09	17.43	20.71	38.15	61.85
EXCLUDING CAR RENTAL	9.16	4.15	8.17	1.43	22.92	16.12	39.05	60.95

Source: See Table 4.25.

Notes: (1) “Award” indicates that the availability measures are weighted according to dollars awarded; (2) “Paid” indicates that the availability measures are weighted according to dollars paid; (3) For this study, “Black” or “African American” refers to an individual having origins in any of the Black racial groups of Africa; “Hispanic” refers to an individual of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race; “Asian” or “Asian/Pacific Islander” refers to an individual having origins in the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands; “Native American” refers to an individual having origins in any of the original peoples of North America or of Hawai’i. Businesses owned by members of these groups are collectively referred to as DBEs.

## **E. Statistical Disparities in Minority and Female Business Formation and Business Owner Earnings**

Chapter V demonstrates that current DBE availability levels in the JMAA market area, as measured in Chapter IV, are substantially lower in most instances than those that we would expect to observe if commercial markets operated in a race- and gender-neutral manner and that these levels are statistically significant.<sup>3</sup> In other words, minorities and women are substantially and significantly less likely to own their own businesses as the result of discrimination than would be expected based upon their observable characteristics, including age, education, geographic location, and industry. We find that these groups also suffer substantial and significant earnings disadvantages relative to comparable nonminority males, whether they work as employees or entrepreneurs.

For example, we found that annual average wages for African Americans in 2006–2010 in the construction sector were 52 percent lower in the JMAA market area than for nonminority males

<sup>3</sup> Typically, for a given disparity statistic to be considered “statistically significant” there must be a substantial probability that the value of that statistic is unlikely to be due to chance alone. *See also fn.* 243.

who were otherwise similar in terms of geographic location, industry, age, and education. This difference is large and statistically significant. Large, adverse, and statistically significant wage disparities were also observed for Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting two or more races, and nonminority women. These disparities are consistent with the presence of market-wide discrimination. Observed disparities for these groups ranged from a low of -20 percent for Hispanics to a high of -52 percent for African Americans. Similar results were observed when the analysis was restricted to the goods and services sector or expanded to the economy as a whole. That is, large, adverse, and statistically significant wage disparities were observed for all minority groups and for nonminority women. All wage and salary disparity analyses were then repeated to test whether observed disparities in the JMAA market area were different enough from elsewhere in the country or the economy to alter any of the basic conclusions regarding wage and salary disparities. They were not.

This analysis demonstrates that minorities and women earn substantially and significantly less than their nonminority male counterparts. Such disparities are symptoms of discrimination in the labor force that, in addition to its direct effect on workers, reduce the future availability of DBEs by stifling opportunities for minorities and women to progress through precisely those internal labor markets and occupational hierarchies that are most likely to lead to entrepreneurial opportunities. These disparities reflect more than mere “societal discrimination” because they demonstrate the nexus between discrimination in the job market and reduced entrepreneurial opportunities for minorities and women. Other things equal, these reduced entrepreneurial opportunities in turn lead to lower DBE availability levels than would be observed in a race- and gender-neutral market area.

Next, we analyzed race and gender disparities in business owner earnings. We found, for example, that annual earnings for self-employed African Americans in 2006–2010 in the construction sector were 42 percent lower in the JMAA market area than for nonminority males who were otherwise similar in terms of geographic location, industry, age, and education. This difference is large and statistically significant. Large, adverse, and statistically significant wage disparities were also observed for Hispanics, Asians/Pacific Islanders, persons reporting two or more races, and nonminority women. These disparities are consistent with the presence of market-wide discrimination. Observed disparities for these groups ranged from a low of -17 percent for Asians/Pacific Islanders to a high of -45 percent for nonminority women. Similar results were observed when the analysis was restricted to the goods and services sector or expanded to the economy as a whole. As with the wage and salary disparity analysis, we enhanced our basic statistical model to test whether minority and female business owners in the JMAA market area differed significantly enough from business owners elsewhere in the U.S. economy to alter any of our basic conclusions regarding disparity. They did not.

As was the case for wage and salary earners, minority and female entrepreneurs earned substantially and significantly less from their efforts than similarly situated nonminority male entrepreneurs. These disparities are a symptom of discrimination in commercial markets that directly and adversely affect DBEs. Other things equal, if minorities and women cannot earn remuneration from their entrepreneurial efforts comparable to that of nonminority males, growth rates will slow, business failure rates will increase, and business formation rates may decrease.

Combined, these phenomena result in lower DBE availability levels than would otherwise be observed in a race- and gender-neutral market area.

Next, we analyzed race and gender disparities in business formation. As with earnings, in most cases we observed large, adverse, and statistically significant disparities consistent with the presence of discrimination in these markets in the overall economy, in the construction sector, and in the goods and services sector. In the construction sector, for example, business formation rates for African Americans were 8.9 percentage points lower than for comparable nonminority males. For other groups, disparities ranged from a low of 3.5 percentage points lower for persons reporting two or more races to a high of 9.7 percentage points lower for nonminority females. Overall, business formation rates for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting two or more races, and nonminority women, were substantially and statistically significantly lower than the corresponding nonminority male business formation rate. Similar results were observed in the goods and services sector and in the economy as a whole.<sup>4</sup>

Finally, as a further check on the statistical findings in this Chapter, we examined evidence from the Census Bureau's *Survey of Business Owners and Self-Employed Persons* (SBO).<sup>5</sup> These data show large, adverse, and statistically significant disparities between DBEs' share of overall revenues and their share of overall firms in the U.S. as a whole, and in the State of Mississippi. The size of the disparities facing minority- and women-owned firms in Mississippi is striking. For example, although 12.66 percent of all construction firms in Mississippi are owned by African Americans, they earned only 1.74 percent of all sales and receipts. Hispanic-owned construction firms are 0.99 percent of all firms in Mississippi, yet they earned only 0.54 percent of all sales and receipts. Asian/Pacific Islander-owned construction firms are 0.45 percent of all construction firms in Mississippi, but earned only 0.26 percent of sales and receipts. Women-owned firms were 9.2 percent of all construction firms in Mississippi, but these firms earned only 5.56 percent of sales and receipts (see Table 5.13 through 5.16).

## **F. Statistical Disparities in Credit/Capital Markets**

In Chapter VI, we analyzed current and historical data from the Survey of Small Business Finances ("SSBF"), conducted by the Federal Reserve Board and the U.S. Small Business Administration, along with data from nine customized matching mail surveys we have conducted throughout the nation since 1999. This data examines whether discrimination exists in the small business credit market.

Credit market discrimination can have an important effect on the likelihood that DBEs will succeed. Moreover, discrimination in the credit market might even prevent such businesses from opening in the first place. This analysis has been held by the courts to be probative of a public entity's compelling interest in remedying discrimination. We provide qualitative and quantitative evidence supporting the view that DBE firms, particularly African American-owned firms, suffer discrimination in this market.

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<sup>4</sup> The sole exception to this being the result for Asians/Pacific Islanders in Goods and Services.

<sup>5</sup> Formerly known as the *Survey of Minority- and Women-Owned Business Enterprises* (SMWOBE).

The SSBF datasets are constructed for the nation as a whole and for nine Census divisions. The JMAA Market Area is part of the East and West South Central divisions (EWSC), which include the State of Mississippi and seven surrounding states.<sup>6</sup> To render the results as narrowly tailored as possible, we included indicator variables in our statistical analyses to determine whether the results for the EWSC were different from those for the nation as a whole. We determined that the national results also apply in general to the EWSC.

The main results are as follows:

- Minority-owned firms were particularly likely to report that they did not apply for a loan over the preceding three years because they feared the loan would be denied (see Tables 6.15, 6.22, 6.29).
- When minority-owned firms did apply for a loan, their loan requests were substantially more likely to be denied than non-minorities, even after accounting for differences like firm size and credit history (see Tables 6.8, 6.9, 6.18, 6.19, 6.25, 6.26).
- When minority-owned firms did receive a loan they were obligated to pay higher interest rates on the loans than comparable nonminority-owned firms (see Tables 6.13, 6.14, 6.21, 6.27).
- Far more minority-owned firms report that credit market conditions are a serious concern than is the case for nonminority-owned firms (see Tables 6.3, 6.4, 6.5, 6.6, 6.7, 6.17, 6.24).
- A greater share of minority-owned firms believed that the availability of credit was the most important issue likely to confront the firm in the near future (see Tables 6.5, 6.6).
- Judging from the analysis done using data from the SSBF, there is no reason to believe that evidence of discrimination in the market for credit is different in the EWSC, which includes the JMAA market area, than in the nation as a whole. The evidence from NERA's own credit surveys in a variety of states and metropolitan areas across the country is entirely consistent with the results from the SSBF.

We conclude that there is evidence of discrimination against DBEs in the JMAA market area in the small business credit market. This discrimination is particularly acute for African American-owned small businesses where, even after adjusting for differences in assets, liabilities, and creditworthiness, the loan denial rate ranges from 6.4 to 1.9 percentage points higher than for nonminority male-owned small businesses.

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<sup>6</sup> The EWSC includes Mississippi, Alabama, Kentucky, Tennessee, Arkansas, Louisiana, Texas, and Oklahoma.

## G. DBE Public Sector Utilization vs. Availability in JMAA's Contracting Markets, FFY 2005–2010

Chapter VII analyzes the extent to which DBEs were utilized on contracts let by JMAA between FFY 2005-2010 and compares this utilization rate to the availability of DBEs in the relevant market area. It also analyzes DBE utilization in airport concessions between FFY 2006-2010.

Tables B1 and B2 provide an executive level summary of utilization findings for the 2012 Study by industry category and DBE type. Table B1 shows results for federally-assisted contracts while Table B2 shows results for locally-funded contracts. Comparable results for concessions appear in Table B3.

**Table B1. DBE Utilization in Contracting at JMAA (Federally-Assisted Contracts) (Dollars Paid)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	18.10	19.42	17.50	0.00	16.09
Hispanic	0.00	2.34	0.00	0.00	0.70
Asian/Pacific Islander	0.00	0.00	0.00	1.95	0.26
Native American	0.00	0.00	0.00	0.00	0.00
Minority Total	18.10	21.76	17.50	1.95	17.05
Nonminority female	7.89	1.61	16.27	0.00	5.22
DBE Total	25.99	23.37	33.77	1.95	22.28
Non-DBE Total	74.01	76.63	66.23	98.05	77.72
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (\$)	11,333,459	6,330,549	652,068	2,776,315	21,092,391

Source and Notes: See Table 7.4.

**Table B2. DBE Utilization in Contracting at JMAA (Locally-Funded Contracts) (Dollars Paid)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	29.38	13.19	23.94	0.49	22.65
Hispanic	0.07	0.00	2.25	0.00	0.57
Asian/Pacific Islander	0.00	0.00	0.00	0.00	0.00
Native American	0.72	0.93	0.43	0.07	0.55
Minority Total	30.17	14.12	26.62	0.56	23.78
Nonminority female	2.05	0.39	15.33	2.62	5.23
DBE Total	32.23	14.51	41.95	3.18	29.01
Non-DBE Total	67.77	85.49	58.05	96.82	70.99
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (\$)	22,358,759	1,655,250	9,541,049	6,638,885	40,193,943

Source and Notes: See Table 7.6.

**Table B3. DBE Utilization in JMAA Concessions**

D/M/WBE Type	Category	
	Including Car Rental (%)	Excluding Car Rental (%)
African American	1.93	14.38
Hispanic	0.00	0.00
Asian/Pacific Islander	0.00	0.00
Native American	0.00	0.00
MBE Total	1.93	14.38
Nonminority female	0.00	0.00
DBE Total	1.93	14.38
Non-DBE Total	98.07	85.62
Total (%)	100.00	100.00
Total (\$)	134,527,530	18,011,274

Source and Notes: See Table 7.19.

Next, we compared the use of DBEs on JMAA contracts and subcontracts to our measure of DBE availability in JMAA's market area. We performed this analysis for airport concessions as well. If DBE utilization is lower than measured availability in a given category, we report this result as a disparity. Tables C1 and C2 provide a top-level summary of our disparity findings for the 2012 Study for each major procurement category. Table C3 provides comparable results for concessions. Except for firms owned by African Americans, which are presently being utilized at

levels consistent with or greater than their estimated availability, we find substantial evidence of disparity in the JMAA's own contracting and subcontracting and concessions activity.

**Table C1. Utilization, Availability, and Disparity Results for JMAA Contracting by Contracting Category (Dollars Paid) (Federally-Assisted Contracts)**

Contracting Category/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Construction</b>			
African American	18.10	7.79	
Hispanic	0.00	1.15	0.0 ***
Asian/Pacific Islander	0.00	1.07	0.0 ***
Native American	0.00	1.22	0.0 ***
Minority-owned	18.10	11.23	
Nonminority female	7.89	11.68	67.5
DBE total	25.99	22.92	
<b>AE-CRS</b>			
African American	19.42	10.67	
Hispanic	2.34	1.66	
Asian/Pacific Islander	0.00	0.58	0.0 ***
Native American	0.00	0.48	0.0 ***
Minority-owned	21.76	13.39	
Nonminority female	1.61	17.59	9.1 ***
DBE total	23.37	30.98	75.4
<b>Services</b>			
African American	17.50	10.35	
Hispanic	0.00	1.55	0.0 ***
Asian/Pacific Islander	0.00	0.23	0.0
Native American	0.00	0.17	0.0
Minority-owned	17.50	12.30	
Nonminority female	16.27	16.37	99.4
DBE total	33.77	28.67	
<b>Commodities</b>			
African American	0.00	6.06	0.0 ***
Hispanic	0.00	0.04	0.0
Asian/Pacific Islander	1.95	2.05	94.8
Native American	0.00	0.20	0.0
Minority-owned	1.95	8.35	23.3
Nonminority female	0.00	16.25	0.0 ***
DBE total	1.95	24.60	7.9 ***

Source: Table 7.23.

Notes: (1) “\*” indicates an adverse disparity that is statistically significant at the 10% level or better (90% confidence). “\*\*” indicates the disparity is significant at a 5% level or better (95% confidence). “\*\*\*” indicates significance at a 1% level or better (99% confidence). (2) An empty cell in the Disparity Ratio column indicates that no adverse disparity was observed for that category.

**Table C2. Utilization, Availability, and Disparity Results for JMAA Contracting by Contracting Category (Dollars Paid) (Locally-Funded Contracts)**

Contracting Category/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Construction</b>			
African American	29.38	10.58	
Hispanic	0.07	1.29	5.7 ***
Asian/Pacific Islander	0.00	0.88	0.0 ***
Native American	0.72	1.28	56.0
Minority-owned	30.17	14.03	
Nonminority female	2.05	10.37	19.8 ***
DBE total	32.23	24.40	
<b>AE-CRS</b>			
African American	13.19	10.37	
Hispanic	0.00	1.64	0.0 ***
Asian/Pacific Islander	0.00	0.60	0.0 ***
Native American	0.93	0.46	
Minority-owned	14.12	13.08	
Nonminority female	0.39	17.82	2.2 ***
DBE total	14.51	30.90	47.0 ***
<b>Services</b>			
African American	23.94	11.10	
Hispanic	2.25	0.94	
Asian/Pacific Islander	0.00	0.24	0.0 ***
Native American	0.43	0.12	
Minority-owned	26.62	12.40	
Nonminority female	15.33	17.41	88.1
DBE total	41.95	29.81	
<b>Commodities</b>			
African American	0.49	10.43	4.7 ***
Hispanic	0.00	0.98	0.0 ***
Asian/Pacific Islander	0.00	2.90	0.0 ***
Native American	0.07	0.39	19.1
Minority-owned	0.56	14.68	3.8 ***
Nonminority female	2.62	22.15	11.8 ***
DBE total	3.18	36.84	8.6 ***

Source: Table 7.25.

Notes: (1) “\*” indicates an adverse disparity that is statistically significant at the 10% level or better (90% confidence). “\*\*” indicates the disparity is significant at a 5% level or better (95% confidence). “\*\*\*” indicates significance at a 1% level or better (99% confidence). (2) An empty cell in the Disparity Ratio column indicates that no adverse disparity was observed for that category.

**Table C3. Utilization, Availability, and Disparity Results for JMAA Concessions**

Category/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Including Car Rental</b>			
African American	1.93	6.97	27.6
Hispanic	0.00	3.16	0.0 ***
Asian/Pacific Islander	0.00	6.22	0.0 ***
Native American	0.00	1.09	0.0 ***
MBE Total	1.93	17.43	11.0 ***
Nonminority female	0.00	12.26	0.0 ***
DBE total	1.93	29.70	6.5 ***
<b>Excluding Car Rental</b>			
African American	14.38	9.16	
Hispanic	0.00	4.15	0.0 ***
Asian/Pacific Islander	0.00	8.17	0.0 ***
Native American	0.00	1.43	0.0 ***
MBE Total	14.38	22.92	62.7
Nonminority female	0.00	16.12	0.0 ***
DBE total	14.38	39.05	36.8 ***

Source and Notes: Table 7.26.

Finally, Chapter VII compares current levels of DBE availability in JMAA's market area with what we would expect to observe in a race- and gender-neutral market area. If there is full parity in the relevant market area, then the expected DBE availability rate (that is, the DBE availability level that would be observed in a non-discriminatory market area) will be equal to the actual current DBE availability rate. If there are adverse disparities facing DBEs in the market area, however, as documented in Chapters V, VI, VII, and VIII of this Study, then expected availability will *exceed* actual current availability. Expected availability percentages for JMAA's overall contracting and by major contracting category are presented below in Table D. Expected availability exceeds actual current availability in 26 of the 28 cases observed.

**Table D. Current Availability and Expected Availability for JMAA Construction and Consulting Contracting (Federally-Assisted Contracts)**

Contracting Category/ DBE Type	Award Dollar Weights		Paid Dollar Weights	
	Current Availability (%)	Expected Availability (%)	Current Availability (%)	Expected Availability (%)
<b>CONSTRUCTION</b>				
African American	6.96	10.00	7.79	11.20
Hispanic	1.12	2.49	1.15	2.57
Asian/Pacific Islander	0.99	2.25	1.07	2.42
Native American	1.48	1.95	1.22	1.61
Minority	10.56	16.44	11.23	17.50
Nonminority female	11.71	25.26	11.68	25.11
DBE total	22.27	38.30	22.92	39.40
<b>AE-CRS</b>				
African American	10.62	15.21	10.62	15.21
Hispanic	1.66	3.67	1.66	3.67
Asian/Pacific Islander	0.58	1.31	0.59	1.33
Native American	0.47	0.62	0.48	0.63
Minority	13.33	20.70	13.35	20.72
Nonminority female	17.63	38.25	17.62	38.14
DBE total	31.00	53.32	30.97	53.27
<b>SERVICES</b>				
African American	9.96	27.74	10.35	8.85
Hispanic	1.57	2.19	1.55	2.17
Asian/Pacific Islander	0.12	0.08	0.23	0.16
Native American	0.11	0.17	0.17	0.26
Minority	11.75	25.22	12.30	26.41
Nonminority female	17.12	24.77	16.37	23.74
DBE total	28.88	49.35	28.67	49.10
<b>COMMODITIES</b>				
African American	6.07	16.74	6.06	16.71
Hispanic	0.04	0.06	0.04	0.06
Asian/Pacific Islander	2.04	1.31	2.05	1.32
Native American	0.20	0.31	0.20	0.31
Minority	8.36	17.81	8.35	17.79
Nonminority female	16.23	23.42	16.25	23.45
DBE total	24.60	41.85	24.60	41.85

Source: Table 7.28.

## H. Anecdotal Evidence

Chapter VIII presents the results of a large scale mail survey we conducted of DBEs and non-DBEs about their experiences and difficulties in obtaining contracts. The survey quantified and compared anecdotal evidence on the experiences of DBEs and non-DBEs as a method to examine whether any differences might be due to discrimination.

We found that DBEs that have been hired in the past by non-DBE prime contractors to work on public sector contracts with DBE goals are rarely hired—or even solicited—by these prime contractors to work on projects without DBE goals. The relative lack of DBE hiring and, moreover, the relative lack of solicitation of DBEs in the absence of affirmative efforts by JMAA and other public entities in the market area shows that business discrimination continues to fetter DBE business opportunities in JMAA’s relevant markets.

We found that DBEs in JMAA’s market area report suffering business-related discrimination in large numbers and with statistically significantly greater frequency than non-DBEs. These differences remain statistically significant when firm size and other “capacity”-related owner characteristics are held constant. Some of the largest disparities were observed in applying for commercial loans, applying for surety bonds, applying for commercial insurance, obtaining price quotes from suppliers or subcontractors, and in functioning without hindrance or harassment on the work site.

We also found that DBEs in these markets are more likely than similarly situated non-DBEs to report that specific aspects of the regular business environment make it harder for them to conduct their businesses, and less likely than similarly situated non-DBEs to report that specific aspects of the regular business environment make it easier for them to conduct their businesses.

Chapter VIII also presents the results from a series of in-depth personal interviews conducted with minority and women business owners in the Airport’s market area. Similar to the survey responses, the interviews strongly suggest that minorities and women continue to suffer discriminatory barriers to full and fair access to JMAA, other public sector, and private sector contracts. Participants reported discriminatory attitudes and negative perceptions of DBE competence; exclusion from industry and information networks; barriers to obtaining public sector contracts; barriers to obtaining work as prime vendors; and barriers to commercial capital.

We conclude that the statistical evidence presented in this report is consistent with these anecdotal accounts of contemporary business discrimination.

The results of the surveys and the personal interviews are the types of anecdotal evidence that, especially in conjunction with the Study’s extensive statistical evidence, the courts have found to be highly probative of whether, without affirmative interventions, JMAA would be a passive participant in a discriminatory local market area. It is also highly relevant for narrowly tailoring any DBE goals for its federally-funded contracts.

## I. DBE Program Overview and Feedback Interviews

Chapter IX provides an overview of JMAA’s race- and gender-neutral procurement policies and procedures and its DBE Program for federal-aid contracts, followed by a summary of business owner experiences with the Program’s policies and procedures. We interviewed over 114 business owners and representatives, as well as Airport staff, to solicit their feedback regarding the DBE Program. Our interviews covered the following subjects:

- **Perceptions of the Program’s overall effectiveness**

Overall, D/M/WBEs reported that the Program remains critical to ensure their full and fair access to JMAA’s contracts. Being certified created opportunities that otherwise would not have been open to them. DBE requirements were seen as vital to the continuing viability of their companies.

- **Access to information about upcoming opportunities and contract specifications**

DBEs reported that they regularly received information from the Airport about upcoming bids. Some participants, DBEs and non-DBEs, stated that more vendor fairs and networking events would be helpful. Forecasting information about upcoming opportunities was suggested by a wide cross section of participants.

- **Contract size and specifications**

DBEs and non-DBEs agreed that “unbundling” contracts so that small firms can submit bids or proposals would increase opportunities.

- **Meeting DBE goals at contract award**

The goal setting process and meeting contract goals elicited many comments. Most prime contractors reported that while it was often difficult and burdensome, they were able to meet DBE contract goals. Some found it hard to find capable and qualified DBEs, especially for highly specialized work. Some non-DBE prime bidders felt that the DBE contract goal was often set unrealistically high, and the desire to self-perform work was a barrier to complying with the goal. Some prime firm participants reported that there are uncompensated additional costs to using DBE subcontractors, which is especially problematic on low bid contracts.

Forming joint ventures with DBEs has been a successful strategy for some firms.

The small pool of firms has led to the disincentive for prime consultants to train DBEs who then appear on other proposers’ teams. Further, highly qualified DBEs sometimes relocate outside of Mississippi.

Several general contractors found that DBEs sometimes lack basic business skills and facilities. Lack of access to bonding and financing are further barriers to utilizing DBEs as subcontractors. Experience and insurance requirements and slow payments were recognized by non-DBEs as

impediments to using DBEs. Some professional services participants commented that the lack of sufficient DBE capacity is related to a lack of young minority students going into the professions, and when they do, a lack of necessary training to become successful entrepreneurs.

More marketing efforts on the part of DBEs was cited by some participants as a step to increase participation.

A substantial number of general contractors reported that it was difficult to fulfill the goal and provide the required documentation with the bid, as JMAA requires to be considered responsive to the invitation for bid. One solution offered would be to allow a short window to submit DBE compliance forms after the bid is submitted.

- **Contract performance monitoring and enforcement**

In general, DBEs reported that JMAA adequately monitors participation during contract performance. Several participants contrasted the Airport's enforcement efforts favorably with those of other agencies. Some DBEs reported that more monitoring of DBE program compliance is needed.

- **Payment**

Most prime contractors expressed satisfaction with the speed with which JMAA processes complete invoices, and we heard no complaints from subcontractors.

- **Assistance programs for DBEs and small firms**

Some DBEs had specific suggestions for supportive services to assist them with Airport contracts, especially in obtaining prime work. Some general contractors agreed that more support for DBEs is needed. There was interest in mentor-protégé programs from DBEs and large consulting firms, or at least for some formal mentoring efforts to assist DBEs.

- **Small business set-asides**

There was overwhelming support from small firms of all ownerships for some type of small business program that includes the use of set-asides or target markets for certified small firms to assist DBEs and other small firms to compete for prime contracting opportunities.

- **DBE Program Committee**

DBEs and non-DBEs generally supported the idea of the Airport appointing a DBE Program Committee to provide advice and input on the operations of the DBE Program. It would be composed of certified firms, non-DBEs and JMAA staff with contracting responsibilities.

## **J. Conclusion**

As summarized above, and based on the detailed findings below, we conclude that there is strong evidence of large, adverse, and frequently statistically significant disparities between minority and female participation in business enterprise activity in JMAA's market area and the actual current availability of those businesses. We further conclude that these disparities cannot be explained solely, or even primarily, by differences between DBE and non-DBE business populations in factors untainted by discrimination, and that these differences therefore give rise to a strong inference of the continued presence of discrimination in JMAA's market area.

## I. Introduction

The Jackson Municipal Airport Authority (“JMAA”) commissioned this study to evaluate whether minority- and women-owned business enterprises (“DBEs”) in JMAA’s market area have full and fair opportunities to compete for its prime contracts and associated subcontracts.

To meet its regulatory obligations, among other things JMAA is required to: (1) compile statistical information concerning the past utilization of minority-owned and women-owned firms as prime contractors, prime consultants, subcontractors, subconsultants, suppliers, and truckers; and (2) to estimate the percentage of minority- and women-owned business enterprises in various industry categories that could potentially become certified as Disadvantaged Business Enterprises (“DBEs”). The purpose of this Study is to assist JMAA to fulfill these two regulatory requirements.

The results of the 2012 Study provide the evidentiary record necessary for JMAA’s consideration regarding the implementation of renewed DBE or M/WBE policies that are responsive to the evidence and that comply with the requirements of the courts. The Study also will help in assessing the extent to which prior efforts have assisted minority-owned and women-owned firms to participate on a fair basis in JMAA’s contracting activity.

The 2012 Study finds statistical evidence of business discrimination against DBEs in the private sector of JMAA’s market area. These findings are presented in Chapters V and VI. Statistical analyses of JMAA’s contracting, which also document evidence consistent with business discrimination, are contained in Chapters III, IV and VII. As a check on our statistical findings, we surveyed the contracting experiences of DBEs and non-DBEs in the market area and also conducted a series of in-depth personal interviews with business enterprises throughout the market area, both DBE and non-DBE.

Like many recipients of federal transportation funding, JMAA has a long record of commitment to including DBEs in its contracting activities. As will be documented in this Study, during Federal Fiscal Years (“FFY”) 2005 through 2010 JMAA has continued to be a source of demand in the regional economy for the products and services provided by DBEs—demand that, in general, is found to be lacking in the private sector, and to a large degree elsewhere in the public sector, of the Mississippi economy and the surrounding region.

As documented below in Chapter VII, JMAA’s prior efforts have produced positive results—DBEs earned approximately 23.1 percent of JMAA’s contracting and subcontracting dollars on contracts awarded from FFY 2005-2010. Some federal courts outside the Fifth Circuit have indicated that in order to implement a race- and gender-based program that is effective, enforceable and legally defensible, a USDOT funding recipient must meet the judicial test of constitutional “strict scrutiny” to determine the legality of such initiatives. Strict scrutiny requires current “strong evidence” of the persistence of discrimination, and “narrowly tailored” measures to remedy that discrimination. These legal principles guide and inform our work for JMAA in this Study.

## A. Study Outline

To ensure compliance with constitutional mandates and DBE best practices, JMAA commissioned NERA to examine the past and current status of DBEs in its geographic and product markets for Construction, AE-CRS, Services, and Commodities. The results of the 2012 Study provide the evidentiary record necessary for JMAA's consideration of whether to implement renewed DBE policies that comply with the requirements of the courts and to assess the extent to which previous efforts have assisted DBEs to participate on a fair basis in JMAA's contracting activity.

The 2012 Study finds both statistical and anecdotal evidence of business discrimination against DBEs in the private sector of the JMAA market area. As a check on our statistical findings, we surveyed the contracting experiences and credit access experiences of DBEs and non-DBEs in the market area and we also conducted a series of in-depth personal interviews with local business enterprises, both DBE and non-DBE. Statistical analyses of JMAA's public sector contracting behavior appear below in Chapters III, IV and VII.

The Study is presented in nine chapters, and is designed to answer the following questions:

- Chapter I: Introduction
- Chapter II: What are the current constitutional standards and case law governing strict scrutiny review of race- and gender-conscious government efforts in public contracting such as the DBE Program?
- Chapter III: What is the relevant geographic market for JMAA and how is it defined? What are the relevant product markets for JMAA and how are they defined?
- Chapter IV: What percentage of all businesses in the JMAA's market area are owned by minorities and/or women? How are these availability estimates constructed?
- Chapter V: Do minority and/or female wage and salary earners earn less than similarly situated nonminority males? Do minority and/or female business owners earn less from their businesses than similarly situated nonminority males? Are minorities and/or women in the JMAA market area less likely to be self-employed than similarly situated nonminority males? How do the findings in the JMAA market area differ from the national findings on these questions? How have these findings changed over time?
- Chapter VI: Do minorities and/or women face discrimination in the market for commercial capital and credit compared to similarly-situated nonminority males? How, if at all, do findings locally differ from findings nationally?

Chapter VII: To what extent have DBEs been utilized by JMAA on contracts awarded from FFY 2005–2010, and how does this utilization compare to the availability of DBEs in the relevant marketplace?

Chapter VIII: How many DBEs experienced disparate treatment in the study period? What types of discriminatory experiences are most frequently encountered by DBEs? How do the experiences of DBEs differ from those of similar non-DBEs regarding difficulties in obtaining prime contracts and subcontracts?

Chapter IX: What general policies and procedures govern JMAA’s DBE program? What were some of the most frequently encountered comments from DBEs and non-DBEs concerning JMAA’s contracting affirmative action programs?

In assessing these questions, we present in Chapters III through VIII a series of quantitative and qualitative analyses that compare minority and/or female outcomes to nonminority male outcomes in all of these business-related areas. The Executive Summary, above, provides a brief overview of our key findings and conclusions.

## II. Legal Standards for Government Affirmative Action Contracting Programs

### A. General Overview of Strict Scrutiny

#### 1. Summary of Constitutional Standards

To be effective, enforceable, and legally defensible, a race-based program must meet the judicial test of constitutional “strict scrutiny.” Strict scrutiny is the highest level of judicial review and consists of two elements:

- The government must establish its “compelling interest” in remedying race discrimination by current “strong evidence” of the persistence of discrimination. Such evidence may consist of the entity’s “passive participation” in a system of racial exclusion.
- Any remedies adopted must be “narrowly tailored” to that discrimination; that is, the program must be directed at the types and depth of discrimination identified.<sup>7</sup>

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

- Statistical evidence of the underutilization of minority firms compared to their availability in the jurisdiction’s market area, known as disparity indices, comparable to the type of “disparate impact” analysis used in employment discrimination cases.
- Anecdotal evidence of race-based barriers to the full and fair participation of minority firms in the market area and in seeking contracts with the agency, comparable to the “disparate treatment” analysis used in employment discrimination cases.<sup>8</sup>

The narrow tailoring prong has been met through the satisfaction of five factors to ensure that the remedy “fits” the evidence:

- The efficacy of race-neutral remedies at overcoming identified discrimination.
- The relationship of numerical benchmarks for government spending to the availability of minority- and women-owned firms and to subcontracting goal setting procedures.
- The congruence between the remedies adopted and the beneficiaries of those remedies.
- Any adverse impact of the relief on third parties.
- The duration of the program.<sup>9</sup>

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<sup>7</sup> *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469 (1989); *W.H. Scott Construction Co., Inc. v. City of Jackson*, 199 F.3d 206, 217 (5th Cir. 1999).

<sup>8</sup> *Croson*, 488 U.S. at 509; *Scott*, 199 F.3d at 218.

In *Adarand v. Peña*,<sup>10</sup> the Court extended the analysis of strict scrutiny to race-based federal enactments such as the DBE program. Just as in the local government context, the national government must have a compelling interest for the use of race and the remedies adopted must be narrowly tailored to the evidence relied upon.

In general, courts have subjected preferences for Women-Owned Business Enterprises (“WBEs”) to “intermediate scrutiny”: gender-based classifications must be supported by an “exceedingly persuasive justification” and “substantially related” to the objective.<sup>11</sup> However, appellate courts reviewing the constitutionality of the Disadvantaged Business Enterprise program for federally-assisted transportation contracts have applied strict scrutiny to the gender-based presumption of social disadvantage.<sup>12</sup> Therefore, JMAA would be wise to meet the rigors of strict scrutiny for any gender preferences.

Below is a detailed discussion of the parameters for establishing JMAA’s compelling interest in remedying discrimination and evaluating whether the remedies adopted to address that discrimination are narrowly tailored. The following are the legal and program development issues the Airport should consider in evaluating its DBE Program for federal-aid contracts and any race- and gender-conscious initiatives for locally-funded contracts.

## 2. City of Richmond v. J.A. Croson

*City of Richmond v. J.A. Croson Co.*<sup>13</sup> established the constitutional contours of permissible race-based public contracting programs. Reversing long established law, the Supreme Court for the first time extended the highest level of judicial examination from measures designed to limit the rights and opportunities of minorities to legislation that benefits these historic victims of discrimination. Strict scrutiny requires that a government entity prove both its “compelling interest” in remedying identified discrimination based upon “strong evidence,” and that the measures adopted to remedy that discrimination are “narrowly tailored” to that evidence. However benign the government’s motive, race is always so suspect a classification that its use must pass the highest constitutional test of “strict scrutiny.”

The Court struck down the City of Richmond’s Minority Business Enterprise Plan that required prime contractors awarded City construction contracts to subcontract at least 30 percent of the project to MBEs. A business located anywhere in the country which was at least 51 percent owned and controlled by “Black, Spanish-speaking, Oriental, Indian, Eskimo, or Aleut” citizens was eligible to participate. The Plan was adopted after a public hearing at which no direct evidence was presented that the City had discriminated on the basis of race in awarding contracts or that its prime contractors had discriminated against minority subcontractors. The only

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<sup>9</sup> *United States v. Paradise*, 480 U.S. 149, 171 (1987); see *Scott*, 199 F.3d at 219 (the City should have adopted “Particularized findings” of discrimination and set goals accordingly).

<sup>10</sup> 515 U.S. 200 (1995) (*Adarand III*).

<sup>11</sup> *Cf. United States v. Virginia*, 518 U.S. 515 (1996).

<sup>12</sup> *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715, 720 (7<sup>th</sup> Cir. 2007).

<sup>13</sup> 488 U.S. 469 (1989).

## Legal Standards for Government Affirmative Action Contracting Programs

evidence before the City Council was: (a) Richmond’s population was 50 percent Black, yet less than one percent of its prime construction contracts had been awarded to minority businesses; (b) local contractors’ associations were virtually all White; (c) the City Attorney’s opinion that the Plan was constitutional; and (d) general statements describing widespread racial discrimination in the local, Virginia, and national construction industries.

In affirming the Court of Appeals’ determination that the Plan was unconstitutional, Justice Sandra Day O’Connor’s plurality opinion rejected the extreme positions that local governments either have *carte blanche* to enact race-based legislation or must prove their own illegal conduct:

[A] state or local subdivision...has the authority to eradicate the effects of private discrimination within its own legislative jurisdiction.... [Richmond] can use its spending powers to remedy private discrimination, if it identifies that discrimination with the particularity required by the Fourteenth Amendment.... [I]f the City could show that it had essentially become a “passive participant” in a system of racial exclusion...[it] could take affirmative steps to dismantle such a system.<sup>14</sup>

Strict scrutiny of race-based remedies is required to determine whether racial classifications are in fact motivated by either notions of racial inferiority or blatant racial politics. This highest level of judicial review “smokes out” illegitimate uses of race by assuring that the legislative body is pursuing a goal important enough to warrant use of a highly suspect tool.<sup>15</sup> It further ensures that the means chosen “fit” this compelling goal so closely that there is little or no possibility that the motive for the classification was illegitimate racial prejudice or stereotype. The Court made clear that strict scrutiny seeks to expose racial stigma; racial classifications are said to create racial hostility if they are based on notions of racial inferiority.<sup>16</sup>

Race is so suspect a basis for government action that more than “societal” discrimination is required to restrain racial stereotyping or pandering. The Court provided no definition of “societal” discrimination or any guidance about how to recognize the ongoing realities of history and culture in evaluating race-conscious programs. The Court simply asserted that:

[w]hile there is no doubt that the sorry history of both private and public discrimination in this country has contributed to a lack of opportunities for black entrepreneurs, this observation, standing alone, cannot justify a rigid racial quota in the awarding of public contracts in Richmond, Virginia.... [A]n amorphous claim that there has been past discrimination in a particular industry cannot justify the use of an unyielding racial quota.

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<sup>14</sup> *Id.* at 491-92.

<sup>15</sup> See also *Grutter v. Bollinger*, 539 U.S. 306, 327 (2003) (“Not every decision influenced by race is equally objectionable, and strict scrutiny is designed to provide a framework for carefully examining the importance and the sincerity of the reasons advanced by the governmental decision maker for the use of race in that particular context.”).

<sup>16</sup> 488 U.S. at 493.

## Legal Standards for Government Affirmative Action Contracting Programs

It is sheer speculation how many minority firms there would be in Richmond absent past societal discrimination.<sup>17</sup>

Richmond's evidence was found to be lacking in every respect. The City could not rely upon the disparity between its utilization of MBE prime contractors and Richmond's minority population because not all minority persons would be qualified to perform construction projects; general population representation is irrelevant. No data were presented about the availability of MBEs in either the relevant market area or their utilization as subcontractors on City projects. According to Justice O'Connor, the extremely low MBE membership in local contractors' associations could be explained by "societal" discrimination or perhaps Blacks' lack of interest in participating as business owners in the construction industry. To be relevant, the City would have to demonstrate statistical disparities between eligible MBEs and actual membership in trade or professional groups. Further, Richmond presented no evidence concerning enforcement of its own anti-discrimination ordinance. Finally, Richmond could not rely upon Congress' determination that there has been nationwide discrimination in the construction industry. Congress recognized that the scope of the problem varies from market to market, and in any event it was exercising its powers under Section Five of the Fourteenth Amendment, whereas a local government is further constrained by the Amendment's Equal Protection Clause.<sup>18</sup>

In the case at hand, the City has not ascertained how many minority enterprises are present in the local construction market nor the level of their participation in City construction projects. The City points to no evidence that qualified minority contractors have been passed over for City contracts or subcontracts, either as a group or in any individual case. Under such circumstances, it is simply impossible to say that the City has demonstrated "a strong basis in evidence for its conclusion that remedial action was necessary."<sup>19</sup>

The foregoing analysis was applied only to Blacks. The Court then emphasized that there was "absolutely no evidence" against other minorities. "The random inclusion of racial groups that, as a practical matter, may have never suffered from discrimination in the construction industry in Richmond, suggests that perhaps the City's purpose was not in fact to remedy past discrimination."<sup>20</sup>

Having found that Richmond had not presented evidence in support of its compelling interest in remedying discrimination—the first prong of strict scrutiny—the Court went on to make two observations about the narrowness of the remedy—the second prong of strict scrutiny. First, Richmond had not considered race-neutral means to increase MBE participation. Second, the 30 percent quota had no basis in evidence, and was applied regardless of whether the individual

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<sup>17</sup> *Id.* at 499.

<sup>18</sup> *Id.* at 504; *but see Adarand v. Peña*, 515 U.S. 200 (1995) ("*Adarand III*") (applying strict scrutiny to Congressional race-conscious contracting measures).

<sup>19</sup> 488 U.S. at 510.

<sup>20</sup> *Id.*

## Legal Standards for Government Affirmative Action Contracting Programs

MBE had suffered discrimination.<sup>21</sup> Further, Justice O'Connor rejected the argument that individualized consideration of Plan eligibility is too administratively burdensome.

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

Nothing we say today precludes a state or local entity from taking action to rectify the effects of identified discrimination within its jurisdiction. If the City of Richmond had evidence before it that non-minority contractors were systematically excluding minority businesses from subcontracting opportunities, it could take action to end the discriminatory exclusion. Where there is a significant statistical disparity between the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors actually engaged by the locality or the locality's prime contractors, an inference of discriminatory exclusion could arise. Under such circumstances, the City could act to dismantle the closed business system by taking appropriate measures against those who discriminate based on race or other illegitimate criteria. In the extreme case, some form of narrowly tailored racial preference might be necessary to break down patterns of deliberate exclusion....Moreover, evidence of a pattern of individual discriminatory acts can, if supported by appropriate statistical proof, lend support to a local government's determination that broader remedial relief is justified.<sup>22</sup>

While much has been written about *Croson*, it is worth stressing what evidence was and was not before the Court. First, Richmond presented *no* evidence regarding the availability of MBEs to perform as prime contractors or subcontractors and *no* evidence of the utilization of minority-owned subcontractors on City contracts.<sup>23</sup> Nor did Richmond attempt to link the remedy it imposed to any evidence specific to the Program; it used the general population of the City rather than any measure of business availability. The "city has not ascertained how many minority enterprises are present in the local construction industry nor the level of their participation in city construction projects. The city points to no evidence that qualified minority contractors have been passed over for city contracts or subcontracts, either as a group or in any individual case."<sup>24</sup>

Some commentators have taken this dearth of any particularized proof and argued that only the most particularized proof can suffice in all cases. They leap from the Court's rejection of Richmond's reliance on only the percentage of Blacks in the City's population to a requirement that only firms that bid or have the "capacity" or "willingness" to bid on a particular contract at a

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<sup>21</sup> See *Grutter*, 529 U.S. at 336-337 (quotas are not permitted; race must be used in a flexible, non-mechanical way).

<sup>22</sup> *Croson*, 488 U.S. at 509 (citations omitted).

<sup>23</sup> *Id.* at 502.

<sup>24</sup> *Id.* at 510.

## Legal Standards for Government Affirmative Action Contracting Programs

particular time can be considered in determining whether discrimination against Black businesses infects the local economy.<sup>25</sup>

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

[I]t is important to remember what the *Croson* plurality opinion did and did not decide. The Richmond program, which the *Croson* Court struck down, was insufficient because it was based on a comparison of the minority population in its entirety in Richmond, Virginia (50%) with the number of contracts awarded to minority businesses (0.67%). There were no statistics presented regarding number of minority-owned contractors in the Richmond area, *Croson*, 488 U.S. at 499, and the Supreme Court was concerned with the gross generality of the statistics used in justifying the Richmond program. There is no indication that the statistical analysis performed by [the consultant] in the present case, which does contain statistics regarding minority contractors in New York City, is not sufficient as a matter of law under *Croson*.<sup>26</sup>

Further, Richmond made no attempt to narrowly tailor a goal for the procurement at issue that reflected the reality of the project. Arbitrary quotas, and the unyielding application of those quotas, did not support the stated objective of ensuring equal access to City contracting opportunities. The *Croson* Court said nothing about the constitutionality of flexible subcontracting goals based upon the availability of MBEs to perform the scopes of the contract in the government's local market area. The federal Disadvantaged Business Enterprise ("DBE") Program, as discussed below, avoids these pitfalls. Part 26 "provides for a flexible system of contracting goals that contrasts sharply with the rigid quotas invalidated in *Croson*."<sup>27</sup>

While strict scrutiny is designed to require clear articulation of the evidentiary basis for race-based decision-making and careful adoption of remedies to address discrimination, it does not, as Justice O'Connor stressed, have to be an impossible test that no proof can meet. Strict scrutiny need not be "fatal in fact."<sup>28</sup>

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<sup>25</sup> See, e.g., *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715, 723 (7<sup>th</sup> Cir. 2007) ("*Northern Contracting III*").

<sup>26</sup> *North Shore Concrete and Associates, Inc. v. City of New York*, 1998 U.S. Dist. Lexis 6785, \*28-29 (E.D. N.Y. 1998); see also *Harrison & Burrowes Bridge Constructors, Inc. v. Cuomo*, 981 F.2d 50, 61-62 (2<sup>nd</sup> Cir. 1992) ("*Croson* made only broad pronouncements concerning the findings necessary to support a state's affirmative action plan"); cf. *Concrete Works of Colorado, Inc. v. City and County of Denver* 36 F.3d 1513, 1528 (10<sup>th</sup> Cir. 1994) ("*Concrete Works II*") (City may rely on "data reflecting the number of MBEs and WBEs in the marketplace to defeat the challenger's summary judgment motion").

<sup>27</sup> *Western States Paving Co., Inc. v. Washington Department of Transportation*, 407 F.3d 983, 994 (9<sup>th</sup> Cir. 2005), cert. denied, 546 U.S. 1170 (2006).

<sup>28</sup> See *Adarand III*, 515 U.S. at 237.

## **B. Strict Scrutiny as Applied to Federal Enactments**

In *Adarand v. Peña*,<sup>29</sup> the Court again overruled long settled law and extended the analysis of strict scrutiny under the Due Process Clause of the Fourteenth Amendment to federal enactments. Just as in the local government context, when evaluating federal legislation and regulations:

[t]he strict scrutiny test involves two questions. The first is whether the interest cited by the government as its reason for injecting the consideration of race into the application of law is sufficiently compelling to overcome the suspicion that racial characteristics ought to be irrelevant so far as treatment by the government is concerned. The second is whether the government has narrowly tailored its use of race, so that race-based classifications are applied only to the extent absolutely required to reach the proffered interest. The strict scrutiny test is thus a recognition that while classifications based on race may be appropriate in certain limited legislative endeavors, such enactments must be carefully justified and meticulously applied so that race is determinative of the outcome in only the very narrow circumstances to which it is truly relevant.<sup>30</sup>

### **1. U.S. Department of Transportation’s Disadvantaged Business Enterprise Program**

To comply with *Adarand*, Congress reviewed and revised the Disadvantaged Business Enterprise (DBE) Program statute<sup>31</sup> and implementing regulations<sup>32</sup> for federal-aid contracts in the transportation industry. These are the laws and regulations governing JMAA’s DBE Program for its federal aid contracts. To date, every court that has considered the issue has found the regulations to be constitutional on their face.<sup>33</sup>

#### **a. Challenges to the Facial Constitutionality of the Disadvantaged Business Enterprise Regulations**

All courts have held that Congress had strong evidence of widespread race discrimination in the construction industry.<sup>34</sup> Relevant evidence before Congress included:

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<sup>29</sup> 515 U.S. 200 (1995) (*Adarand III*).

<sup>30</sup> *Adarand Constructors, Inc. v. Peña*, 965 F. Supp. 1556, 1569-1570 (D. Colo. 1997), *rev’d*, 228 F.3d 1147 (2000) (“*Adarand IV*”); *see also Adarand III*, 515 U.S. at 227.

<sup>31</sup> Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21), Pub. L. No. 105-178 (b)(1), 112 Stat. 107, 113.

<sup>32</sup> 49 C.F.R. Part 26.

<sup>33</sup> *See, e.g., Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147 (10<sup>th</sup> Cir. 2000) (“*Adarand VI*”), *cert. granted then dismissed as improvidently granted*, 532 U.S. 941, 534 U.S. 103 (2001); *Northern Contracting, Inc. v. Illinois Department of Transportation*, 2004 U.S. Dist. LEXIS 3226 at \*64 (N.D. Ill., Mar. 3, 2004) (“*Northern Contracting I*”).

<sup>34</sup> *See also Western States*, 407 F.3d at 993 (“In light of the substantial body of statistical and anecdotal material considered at the time of TEA-21’s enactment, Congress had a strong basis in evidence for concluding that—in

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- Disparities between the earnings of minority-owned firms and similarly situated nonminority-owned firms;
- Disparities in commercial loan denial rates between Black business owners compared to similarly situated nonminority business owners;
- The large and rapid decline in minorities' participation in the construction industry when affirmative action programs were struck down or abandoned; and
- Various types of overt and institutional discrimination by prime contractors, trade unions, business networks, suppliers and sureties against minority contractors.<sup>35</sup>

The Eighth Circuit Court of Appeals took a “hard look” at the evidence Congress considered, and concluded that the legislature had:

[S]pent decades compiling evidence of race discrimination in government highway contracting, of barriers to the formation of minority-owned construction businesses, and of barriers to entry. In rebuttal, [the plaintiffs] presented evidence that the data were susceptible to multiple interpretations, but they failed to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in highway contracts. Thus, they failed to meet their ultimate burden to prove that the DBE program is unconstitutional on this ground.<sup>36</sup>

Next, the regulations were facially narrowly tailored. Unlike the prior program,<sup>37</sup> Part 26 provides that:

- The overall goal must be based upon demonstrable evidence of the number of DBEs ready, willing, and able to participate on the recipient's federally assisted contracts.
- The goal may be adjusted to reflect the availability of DBEs but for the effects of the DBE Program and of discrimination.
- The recipient must meet the maximum feasible portion of the goal through race-neutral measures as well as estimate that portion of the goal it predicts will be met through such measures.

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at least some parts of the country—discrimination within the transportation contracting industry hinders minorities' ability to compete for federally funded contracts.”)

<sup>35</sup> *See id.*, 407 F.3d at 992-93.

<sup>36</sup> *Sherbrooke*, 345 F.3d. at 970; *see also Adarand VII*, 228 F.3d at 1175 (Plaintiff has not met its burden “of introducing credible, particularized evidence to rebut the government's initial showing of the existence of a compelling interest in remedying the nationwide effects of past and present discrimination in the federal construction procurement subcontracting market.”).

<sup>37</sup> 49 C.F.R. Part 23.

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- The use of quotas and set-asides is limited to only those situations where there is no other remedy.
- The goals are to be adjusted during the year to remain narrowly tailored.
- Absent bad faith administration of the Program, a recipient cannot be penalized for not meeting its goal.
- The presumption of social disadvantage for racial and ethnic minorities and women is rebuttable, “wealthy minority owners and wealthy minority firms are excluded, and certification is available to persons who are not presumptively disadvantaged but can demonstrate actual social and economic disadvantage.”
- Exemptions and waivers from any or all Program requirements are available.<sup>38</sup>

These elements have led the courts to conclude that the program is narrowly tailored on its face. First, the regulations place strong emphasis on the use of race-neutral means to achieve minority and women participation. Relying upon *Grutter v. Bollinger*, the Eighth Circuit held that while “[n]arrow tailoring does not require the exhaustion of every conceivable race-neutral alternative...it does require serious, good faith consideration of workable race-neutral alternatives.”<sup>39</sup>

The DBE Program is also flexible. Eligibility is limited to small firms owned by persons whose net worth is less than \$750,000. There are built-in Program time limits, and the recipient may terminate race-conscious contract goals if it meets its annual overall goal through race-neutral means for two consecutive years. Moreover, the authorizing legislation is subject to Congressional reauthorization that will ensure periodic public debate.

The court next held that the goals are tied to the relevant labor market. “Though the underlying estimates may be inexact, the exercise requires the States to focus on establishing realistic goals for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson*...”<sup>40</sup>

Finally, Congress has taken significant steps to minimize the race-conscious nature of the Program. “[W]ealthy minority owners and wealthy minority-owned firms are excluded, and certification is available to persons who are not presumptively [socially] disadvantaged but can demonstrate actual social and economic disadvantage. Thus, race is made relevant in the program, but it is not a determinative factor.”<sup>41</sup>

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<sup>38</sup> *Sherbrooke*, 345 F.3d. at 973.

<sup>39</sup> *Id.* at 972.

<sup>40</sup> *Id.*

<sup>41</sup> *Id.* at 973.

**b. Challenges to the Application of the Disadvantaged Business Enterprise Regulations**

DBE programs based upon a methodology similar to that for this Study for JMAA, including the availability analysis and the examination of disparities in the business formation rates and business earnings of minorities and women compared to similarly situated nonminority males, have been held to be narrowly tailored in their application of Part 26.

**i. Sherbrooke Turf, Inc. v. Minnesota Department of Transportation**

In this case, the Eighth Circuit Court of Appeals, which governs Missouri, held that Congress had a compelling interest in enacting the DBE program legislation, the regulations implementing the statute were constitutional, and the Minnesota Department of Transportation's (MnDOT) DBE Program was sufficiently narrowly tailored.

After holding that Part 26 is facially narrowly tailored, the court turned to MnDOT's implementation of the regulations.

MnDOT had relied upon a NERA Availability Study to set its DBE goal that applied the approach used for this Study for JMAA. The Study first determined that DBEs comprise 11.4 percent of highway construction prime contractors, of which 0.6 percent were minority-owned and 10.8 percent were women-owned. Based upon the analysis of business formation statistics, the Study next estimated that the number of participating minority-owned firms would be 34 percent higher in a race-neutral market. Therefore, the DBE availability figure was adjusted from 11.4 percent to 11.6 percent, which MnDOT adopted as its overall goal for fiscal year 2001. MnDOT predicted that it would meet 9 percent of its goal through race-conscious measures, based upon the drop from 10.25 percent DBE participation in 1998 to 2.25 percent participation in 1999, when its previous program was enjoined in *Sherbrooke I*. USDOT approved this goal.

The Eighth Circuit opined that while plaintiff:

[P]resented evidence attacking the reliability of NERA's data, it failed to establish that better data was [sic] available or that MnDOT was otherwise unreasonable in undertaking this thorough analysis and in relying on its results. The precipitous drop in DBE participation in 1999, when no race-conscious methods were employed, supports MnDOT's conclusion that a substantial portion of its 2001 overall goal could not be met with race-neutral measures, and there is no evidence that MnDOT failed to adjust its use of race-conscious and race-neutral methods as the year progressed, as the DOT regulations require.<sup>42</sup>

**ii. Northern Contracting, Inc. v. Illinois Department of Transportation**

Likewise, the Seventh Circuit Court of Appeals, in a highly detailed opinion relying in part on the MnDOT case, affirmed the district court's trial verdict that the Illinois Department of

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<sup>42</sup> *Id.*

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Transportation's application of Part 26 was narrowly tailored based in large part upon NERA's Availability Study and expert trial testimony.<sup>43</sup> IDOT had a compelling interest in remedying discrimination in the market area for federally-funded highway contracts, and its DBE Plan was narrowly tailored to that interest and in conformance with the regulations.

To determine whether IDOT met its constitutional and regulatory burdens, the court reviewed the evidence of discrimination against minority and women construction firms in the Illinois area. IDOT had commissioned a NERA Availability Study to meet Part 26's requirements. Similar to this Study for the District, the IDOT Study included a custom census of the availability of DBEs in IDOT's market area, weighted by the location of IDOT's contractors and the types of goods and services IDOT procures. NERA estimated that DBEs comprised 22.77 percent of IDOT's available firms.<sup>44</sup> The IDOT Study next examined whether and to what extent there are disparities between the rates at which DBEs form businesses relative to similarly situated nonminority men, and the relative earnings of those businesses. If disparities are large and statistically significant, then the inference of discrimination can be made. Controlling for numerous variables such as the owner's age, education, and the like, the Study found that in a race- and gender-neutral market area the availability of DBEs would be approximately 20.8 percent higher, for an estimate of DBE availability "but for" discrimination of 27.51 percent.

In addition to the IDOT Study, the court also relied upon:

- A NERA Availability Study conducted for Metra, the Chicago-area commuter rail agency;
- Expert reports relied upon by an earlier trial court in holding that the City of Chicago had a compelling interest in its minority and women business program for construction contracts;<sup>45</sup>
- Expert reports and anecdotal testimony presented to the Chicago City Council in support of the City's revised M/WBE Procurement Program ordinance;
- Anecdotal evidence gathered at IDOT's public hearings on the DBE program;

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<sup>43</sup> *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715 (7<sup>th</sup> Cir. 2007) ("*Northern Contracting III*"). Dr. Wainwright testified as IDOT's expert witness at the trial. Ms. Holt authored IDOT's DBE goal submission and testified about that submission at the trial.

<sup>44</sup> This baseline figure of DBE availability is the "step 1" estimate U.S. DOT grant recipients must make pursuant to 49 CFR §26.45.

<sup>45</sup> *BAGC v. Chicago*, 298 F. Supp.2d 725 (N.D. Ill. 2003).

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- Data on DBE involvement in construction projects in markets without DBE goals;<sup>46</sup> and
- IDOT’s “zero goal” experiment, where DBEs received approximately 1.5 percent of the total value of the contracts. This was designed to test the results of “race-neutral” contracting policies, that is, the utilization of DBEs on contracts without goals.

Based upon this record, the court of appeals agreed with the trial court’s judgment that the Program was narrowly tailored. IDOT’s plan was based upon sufficient proof of discrimination such that race-neutral measures alone would be inadequate to assure that DBEs operate on a “level playing field” for government contracts.

The stark disparity in DBE participation rates on goals and non-goals contracts, when combined with the statistical and anecdotal evidence of discrimination in the relevant marketplaces, indicates that IDOT’s 2005 DBE goal represents a “plausible lower-bound estimate” of DBE participation in the absence of discrimination.... Plaintiff presented no persuasive evidence contravening the conclusions of IDOT’s studies, or explaining the disparate usage of DBEs on goals and non-goals contracts.... IDOT’s proffered evidence of discrimination against DBEs was not limited to alleged discrimination by prime contractors in the award of subcontracts. IDOT also presented evidence that discrimination in the bonding, insurance, and financing markets erected barriers to DBE formation and prosperity. Such discrimination inhibits the ability of DBEs to bid on prime contracts, thus allowing the discrimination to indirectly seep into the award of prime contracts, which are otherwise awarded on a race- and gender-neutral basis. This indirect discrimination is sufficient to establish a compelling governmental interest in a DBE program.... Having established the existence of such discrimination, a governmental entity has a compelling interest in assuring that public dollars, drawn from the tax contributions of all citizens, do not serve to finance the evil of private prejudice.<sup>47</sup>

## 2. U.S. Department of Defense’s Small Disadvantaged Business Program

In 2008, the Federal Circuit Court of Appeals struck down the Department of Defense (DOD) program for Small Disadvantaged Businesses (SDBs) in *Rothe Development Corporation v. U.S. Department of Defense*.<sup>48</sup> The program set an overall annual goal of five percent for DOD contracting with SDBs and authorized various race-conscious measures to meet the goal.

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<sup>46</sup> *Northern Contracting III*, 473 F.3d at 719 (“Also of note, IDOT examined the system utilized by the Illinois State Toll Highway Authority, which does not receive federal funding; though the Tollway has a DBE goal of 15 percent, this goal is completely voluntary -- the average DBE usage rate in 2002 and 2003 was 1.6 percent. On the basis of all of this data, IDOT adopted 22.77 percent as its Fiscal Year 2005 DBE goal.”).

<sup>47</sup> *Northern Contracting II* at \*82 (internal citations omitted); see *Croson*, 488 U.S. at 492.

<sup>48</sup> *Rothe Development Corporation v. U.S. Department of Defense*, 545 F.3d 1023 (*Fed. Cir.* 2008). We note that the jurisdiction of the Court of Appeals for the Federal Circuit is limited to the jurisdiction described in 28 U.S.C. §§ 1292 (c) and (d) and 1295. Pursuant to 28 U.S.C. § 1295(a)(2), jurisdiction in *Rothe* was based upon the plaintiff’s claim under the Tucker Act, 28 U.S.C. § 1346(a)(2), which governs contract claims against the United States.

In *Rothe VII*,<sup>49</sup> the appeals court held that the DOD program violated strict scrutiny because Congress did not have a “strong basis in evidence” upon which to conclude that DOD was a passive participant in racial discrimination in relevant markets across the country. The six local disparity studies upon which the DOD primarily relied for evidence of discrimination did not meet the compelling interest requirement, and its other statistical and anecdotal evidence did not rise to meet the heavy constitutional burden.

Of particular relevance to this Study for JMAA, the primary focus of the court’s analysis was the six disparity studies. The court reaffirmed that such studies are relevant to the compelling interest analysis.<sup>50</sup> It then rejected *Rothe’s* argument that data more than five years old must be discarded, stating “We decline to adopt such a *per se* rule here.... [The government] should be able to rely on the most recently available data so long as that data is reasonably up-to-date.”<sup>51</sup>

In the absence of expert testimony about accepted econometric models of discrimination, the court was troubled by the failure of five of the studies to account for size differences and “qualifications” of the minority firms in the denominator of the disparity analysis, or as the court labeled it, “relative capacity.”<sup>52</sup> The court was concerned about the studies’ inclusion of possibly “unqualified” minority firms and the failure to account for whether a firm can perform more than one project at a time in two of the studies.<sup>53</sup> In the court’s view, the combination of these perceived deficits rendered the studies insufficiently probative to meet Congress’ burden.

The appellate court ignored the analyses in the cases upholding the USDOT Disadvantaged Business Enterprise Program and the City of Denver’s local affirmative action contracting program where the fallacy of “capacity” was debunked, all of which were cited extensively by the district court. It relied instead on a report from the USCCR, which adopts the views of anti-affirmative action writers, including those of *Rothe’s* consultant.<sup>54</sup>

However, the court was careful to limit the reach of its review to the facts of the case:

To be clear, we do *not* hold that the defects in the availability and capacity analyses in these six disparity studies render the studies wholly unreliable for any purpose. Where the calculated disparity ratios are low enough, we do not foreclose the possibility that an inference of discrimination might still be permissible for *some* of the minority groups in *some* of the studied industries in *some* of the jurisdictions. And we recognize that a minority owned firm’s capacity and qualifications may themselves be affected by

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<sup>49</sup> This opinion was the latest iteration of an 11-year-old challenge by a firm owned by a White female to the DOD’s award of a contract to an Asian American-owned business despite the fact that plaintiff was the lowest bidder.

<sup>50</sup> *Rothe*, 545 F.3d at 1037-1038.

<sup>51</sup> *Id.* at 1038-1039.

<sup>52</sup> *Id.* at 1042.

<sup>53</sup> *Ibid.*

<sup>54</sup> U.S. Commission on Civil Rights, *Disparity Studies as Evidence of Discrimination in Federal Contracting* (May 2006): 79.

discrimination. But we hold that the defects we have noted detract dramatically from the probative value of these six studies, and, in conjunction with their limited geographic coverage, render the studies insufficient to form the statistical core of the “strong basis in evidence” required to uphold the statute.<sup>55</sup>

The Federal Circuit concluded its analysis of compelling interest by “stress[ing] that [its] holding is grounded in the particular terms of evidence offered by DOD and relied on by the district court in this case, and should not be construed as stating blanket rules, for example, about the reliability of disparity studies.”<sup>56</sup>

Given the holding that Congress lacked a strong basis in evidence for the DOD program, the court did not rule on whether its provisions were narrowly tailored. The court did note in its prior rulings, however, that the program is flexible, limited in duration, and not unduly burdensome to third parties, and that the program has tended to narrow the reach of its remedies over time.<sup>57</sup>

### C. Gender-Conscious Programs

Whether affirmative action procurement programs that benefit women are subject to the lesser constitutional standard of “intermediate scrutiny” has yet to be settled by the Supreme Court.<sup>58</sup> Most courts, including the Fifth Circuit,<sup>59</sup> have applied intermediate scrutiny to preferences for women and then upheld or struck down the female preference under that standard.<sup>60</sup> However, the Sixth Circuit has applied strict scrutiny to gender preferences.<sup>61</sup>

### D. Burdens of Production and Proof

Unlike most legal challenges, the defendant has the initial burden of producing “strong evidence” in support of the program.<sup>62</sup> As noted by the Fifth Circuit, the plaintiff must then proffer evidence to rebut the government’s case, and bears the ultimate burden of production and persuasion that the affirmative action program is unconstitutional.<sup>63</sup> “[W]hen the proponent of an affirmative action plan produces sufficient evidence to support an inference of discrimination,

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<sup>55</sup> *Rothe*, 545 F.3d at 1045.

<sup>56</sup> *Id.* at 1049.

<sup>57</sup> *Id.* at 1049.

<sup>58</sup> *Cf. United States v. Virginia*, 518 U.S. 515 (1996) (applying standard of “exceedingly persuasive justification” in striking down Virginia Military Institute’s males only admissions policy).

<sup>59</sup> *Scott*, 199 F.3d at 215 n.9.

<sup>60</sup> *See, e.g., Northern Contracting I* at \*44 (women’s status as presumptively socially disadvantaged passes intermediate scrutiny); *Engineering Contractors II*, 122 F.3d at 907-910; *Concrete Works II*, 36 F.3d at 1519; *Philadelphia II*, 6 F.3d at 1009; *Coral Construction Co. v. King County*, 941 F.2d 910, 930-931 (9<sup>th</sup> Cir. 1991); *Baltimore I*, 83 F.Supp 2d at 613.

<sup>61</sup> *Brunet*, 1 F.3d at 404.

<sup>62</sup> *Aiken v. City of Memphis*, 37 F.3d 1155, 1162 (6<sup>th</sup> Cir. 1994).

<sup>63</sup> *Adarand VII*, 228 F.3d at 1166; *Scott*, 199 F.3d at 219.

the plaintiff must rebut that inference in order to prevail.”<sup>64</sup> A plaintiff “cannot meet its burden of proof through conjecture and unsupported criticism of [the government’s] evidence.”<sup>65</sup> For example, in the challenge to the Minnesota and Nebraska DBE programs, “plaintiffs<sup>66</sup> presented evidence that the data was susceptible to multiple interpretations, but they failed to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in highway contracts. Thus, they failed to meet their ultimate burden to prove that the DBE program is unconstitutional on this ground.”<sup>67</sup>

There is no need of formal legislative findings,<sup>68</sup> nor “an ultimate judicial finding of discrimination before [a local government] can take affirmative steps to eradicate discrimination.”<sup>69</sup> When the statistical information is sufficient to support the inference of discrimination, the plaintiff must prove that the statistics are flawed.<sup>70</sup> A plaintiff cannot rest upon general criticisms of studies or other evidence; it must carry the case that the government’s proof is inadequate to meet strict scrutiny, rendering the legislation or governmental program illegal.<sup>71</sup>

### **E. Establishing a “Strong Basis in Evidence” for a Race-Conscious Contracting Program for Locally-Funded Contracts**

The cases construing the DBE program are highly relevant to the question whether JMAA should consider adopting a DBE program for its locally-funded contracts. While binding strictly only upon the DBE Program, these cases provide important guidance to JMAA about the types of evidence necessary to establish its compelling interest in adopting such a program and how to narrowly tailor a program. For example, the Fourth Circuit noted with approval that North Carolina’s M/WBE program for state-funded contracts largely mirrored Part 26.<sup>72</sup>

Likewise, cases scrutinizing state and local programs are relevant to JMAA’s evaluation of whether it needs to apply race-conscious remedies to its USDOT-assisted contracts to ensure that Congress’ remedial purposes are accomplished and its efforts are narrowly tailored. We therefore

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<sup>64</sup> *Engineering Contractors II*, 122 F.3d at 916; see also *West Tennessee Chapter of Associated Builders and Contractors, Inc. v. City of Memphis*, 302 F.Supp.2d 860, 864 (W.D. Tenn. 2004).

<sup>65</sup> *Concrete Works IV*, 321 F.3d at 989; see also *H.B. Rowe*, 2008 U.S. Dist. Lexis at \*27.

<sup>66</sup> The plaintiffs in both cases were represented by the same counsel and attempted to rely upon the same consultant.

<sup>67</sup> *Sherbrooke*, 345 F.3d at 970.

<sup>68</sup> *Webster*, 51 F.Supp.2d at 1364.

<sup>69</sup> *Concrete Works II*, 36 F.3d at 1522.

<sup>70</sup> *Engineering Contractors II*, 122 F.3d at 916; *Coral Construction*, 941 F.2d at 921.

<sup>71</sup> *Adarand VII*, 228 F.3d at 1166; *Engineering Contractors II*, 122 F.3d at 916; *Philadelphia III*, 91 F.3d at 597; *Concrete Works II*, 36 F.3d at 1522-1523; *Webster*, 51 F. Supp. 2d at 1364; see also *Wygant*, 476 U.S. at 277-278.

<sup>72</sup> *H.B. Rowe Co. v. Tippett*, 615 F.3d 233, 236 (4<sup>th</sup> Cir. 2010).

discuss cases involving local programs and the standards and methodologies that have met strict scrutiny.

The *Denver* and *Chicago* decisions provide the most detailed analysis of the evidence necessary to establish that JMAA would be a passive participant in a discriminatory marketplace in the absence of race-based remedies for its locally-funded contracts. These cases upheld programs based upon the types and quality of evidence, and the methodologies, applied in this Study for JMAA.

### 1. Concrete Works, Inc. v. City and County of Denver

In 2003, the City and County of Denver's M/WBE Program was upheld using the "law and economics approach" to disparity studies (in addition to trial testimony of discrimination), the approach applied in this Study.<sup>73</sup> The defense relied primarily on expert reports and testimony derived from an economic model of business discrimination. The court of appeals recognized that the proper inquiry is not only whether disparities remain despite the operation of its affirmative action program (a statistical question to which many disparity studies, then and now, continue to limit themselves), but also whether disparities remain when remedial intervention is not present in the marketplace, as reflected by M/WBE participation on contracts without affirmative action goals, in the public sector, the private sector, or both.

The law and economics model applies accepted social science principles of data collection, statistical analyses and anecdotal inquiries within rigorous frameworks to the questions relevant to whether the agency has a strong basis in evidence of the continuing effects of discrimination, and if so, what responses are supportable, even where remedial efforts have been undertaken: Are there disparities in the overall market outside the agency's projects that support the inference of the market failure of discrimination, such that the agency needs to continue to take action to ensure that it does not passively participate in such discrimination? What additional market factors outside the agency's direct control affect the entrepreneurial opportunities of M/WBEs that perpetuate discrimination and disparate impacts?

The law and economics model's analysis of disparities in the rates at which M/WBEs in the government's markets form businesses compared to similar non-M/WBEs, their earnings from such businesses, and their access to capital markets, has been held to be highly relevant to the determination whether the market functions properly for all firms regardless of the race or gender of their ownership. These analyses contributed to the successful defense of local race- and gender-conscious construction programs,<sup>74</sup> as well as the DBE program for federally-assisted transportation contracts.<sup>75</sup> As explained by the Tenth Circuit, the evidence

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<sup>73</sup> *Concrete Works of Colorado, Inc. v. City and County of Denver*, 321 F.3d 950 (10<sup>th</sup> Cir. 2003), *cert. denied*, 540 U.S. 1027 (2003) ("*Concrete Works IV*").

<sup>74</sup> *Builders Association of Greater Chicago v. City of Chicago*, 298 F.Supp.2d 725 (N.D. Ill. 2003) (holding that the City of Chicago's M/WBE program for local construction contracts met compelling interest using this framework).

<sup>75</sup> *Western States Paving*, 407 F.3d at 992-93; *Sherbrooke Turf*, 345 F.3d. at 970 (in the face of evidence of "barriers to the formation of minority-owned construction businesses, and of barriers to entry... [plaintiffs] failed

demonstrates the existence of two kinds of discriminatory barriers to minority subcontracting enterprises, both of which show a strong link between racial disparities in the federal government's disbursements of public funds for construction contracts and the channeling of those funds due to private discrimination. The first discriminatory barriers are to the formation of qualified minority subcontracting enterprises due to private discrimination, precluding from the outset competition for public construction contracts by minority enterprises. The second discriminatory barriers are to fair competition between minority and non-minority subcontracting enterprises, again due to private discrimination, precluding existing minority firms from effectively competing for public construction contracts. The government also presents further evidence in the form of local disparity studies of minority subcontracting and studies of local subcontracting markets after the removal of affirmative action programs.... The government's evidence is particularly striking in the area of the race-based denial of access to capital, without which the formation of minority subcontracting enterprises is stymied.<sup>76</sup>

Denver adopted an ordinance in 1990 that provided for annual goals of 16 percent for MBEs and 12 percent for WBEs in construction contracts, and 10 percent for both MBEs and WBEs in professional design and construction services contracts. Bidders were to meet contract specific goals or make good faith efforts to do so. To comply with *Croson*, the City commissioned a study to assess the propriety of the Program. The 1990 Study found large disparities between the availability and utilization of M/WBEs on City projects without goals. It likewise found large disparities on private sector projects without goals. Interviews and testimony revealed continuing efforts by white male contractors to circumvent the goals. A 1991 study of goods, services and remodeling industries also found large disparities for City contracts not subject to goals.

When the Tenth Circuit reversed and remanded for trial in *Concrete Works II*,<sup>77</sup> the City commissioned another study. The 1995 Study used U.S. Census Bureau data to determine MBE and WBE availability and utilization in the construction and design industries in the Denver Metropolitan Statistical Area (MSA). It calculated separate disparity indices for firms with and without employees. Census data were also used to examine average revenues per employee and rates of self-employment. Disparities in self-employment rates persisted even after holding education and length of work experience constant. A telephone survey to determine the

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to present affirmative evidence that no remedial action was necessary because minority-owned small businesses enjoy non-discriminatory access to and participation in highway contracts"); *Northern Contracting I*, LEXIS 3226 at \*113, 122.

<sup>76</sup> *Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147, 1168-69 (10<sup>th</sup> Cir. 2000) ("*Adarand VII*"), cert. granted then dismissed as improvidently granted, 532 U.S. 941, 534 U.S. 103 (2001).

<sup>77</sup> *Concrete Works of Colorado, Inc.*, a construction firm owned by a white male, sued the City in 1992, alleging that it had been denied three contracts for failure to meet the goals or to make good faith efforts and seeking injunctive relief and money damages. The district court granted the City's motion for summary judgment. *Concrete Works of Colorado, Inc. v. City & County of Denver*, 823 F.Supp. 821 (D. Colo. 1993) ("*Concrete Works P*"). The Tenth Circuit reversed, holding that genuine issues of material fact precluded summary judgment. *Concrete Works of Colorado, Inc. v. City & County of Denver*, 36 F.3d 1513 (10<sup>th</sup> Cir. 1994) ("*Concrete Works IP*"). The district court, after a bench trial, held the ordinance to be unconstitutional. *Concrete Works of Colorado, Inc. v. City & County of Denver*, 86 F.Supp. 2d 1042 (D. Colo. 2000) ("*Concrete Works IIP*"). Denver appealed.

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availability and utilization of M/WBEs in the Denver MSA showed large disparities in the construction and professional design industries. The 1995 Study included discussion of a 1993 Study for the Denver Housing Authority that found disparities for M/WBEs in some areas in some years, including those when it implemented an affirmative action program, and a 1992 Study for the Regional Transportation District that found large disparities for both prime and subcontracting in the Denver market area. Based upon this evidence, the City enacted the 1996 Ordinance.

In 1997, Denver commissioned another study of discrimination in construction projects of the type undertaken by the City. The court found this Study used a “more sophisticated” method<sup>78</sup> to calculate availability by: (1) specifically determining the City’s geographic and procurement market area; (2) using Dun & Bradstreet data to obtain the total number of available firms and numerous directories to determine the number of M/WBEs; (3) conducting surveys to adjust for possible misclassification of the race and gender of firms; and (4) presenting a final result of weighted averages of availability for each racial group and women for both prime and subcontracts.

The 1997 Study then compared M/WBE availability and utilization in the Colorado construction industry. It also examined 1987 Census data from the Survey of Minority-Owned Business Enterprises and Women-Owned Business Enterprises, the most current then available. All comparisons yielded large and statistically significant disparities. The 1997 Study also found that the potential availability of M/WBEs, as measured by the rates at which similarly situated white males form businesses, was significantly greater than their actual availability. The Study next examined whether minorities and women in the construction industry earned less than white males with similar characteristics. Large and statistically significant disparities were found for all groups except Asian-Americans. A mail survey was conducted to obtain anecdotal evidence of the experiences of M/WBEs and non-M/WBEs in the construction industry. Again, with the exception of Asian-Americans, minorities and women with similar characteristics experienced much greater difficulties than did their white male counterparts. A follow up telephone survey indicated that the disparities were even greater than first indicated.

Based upon the 1997 Study, and additional surveys and hearings, the City enacted the 1998 Ordinance. It reduced the annual goals for both MBEs and WBEs in construction contracts to 10 percent and prohibited M/WBE prime contractors from counting self-performed work towards the goals.

Concrete Works’ challenge finally came to trial in 1999. In addition to the statistical evidence in prior studies and expert reports prepared for the litigation, Denver introduced evidence of its contracting activities dating back to the early 1970s. This consisted of reports of federal investigations into the utilization and experiences of local MBEs and of the City’s early affirmative action efforts. M/WBE participation dramatically increased when the City adopted its first MBE ordinance in 1984. The City also introduced additional, comprehensive anecdotal evidence. M/WBEs testified that they experienced difficulties in prequalifying for private sector jobs; their low bids were rejected; they were paid more slowly than non-M/WBEs; they were

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<sup>78</sup> *Concrete Works IV*, 321 F.3d at 966.

charged more for materials than non-M/WBEs; they were often required to do additional work not required of white males; and there were barriers to joining trade unions and associations. There was extensive testimony detailing the difficulties M/WBEs suffered in obtaining lines of credit. The “most poignant” testimony involved blatant harassment suffered at work sites, including physical assaults.

The trial court found for the plaintiff.

The Tenth Circuit reversed and directed the entry of judgment for Denver. The district court’s legal framework “misstate[d] controlling precedent and Denver’s burden at trial.”<sup>79</sup>

First, the government need not prove that the statistical inferences of discrimination are “correct.” Strong evidence supporting the government’s determination that remedial action is necessary need not be “irrefutable or definitive” proof of discrimination. Statistical evidence creating inferences of discriminatory motivations is sufficient, and therefore, evidence of market area discrimination can be used to meet strict scrutiny.<sup>80</sup> It is the plaintiff who must prove by a preponderance of the evidence that such proof does not support those inferences.

*Croson* does not require that each group included in the ordinance suffer equally from discrimination. In contrast to Richmond, Denver introduced evidence of bias against each group; that is sufficient.<sup>81</sup>

Nor must Denver demonstrate that the “ordinances will *change* discriminatory practices and policies” in the local market area; such a test would be “illogical” because firms could defeat the remedial efforts simply by refusing to cease discriminating.<sup>82</sup>

Next, a municipality need not prove that:

[P]rivate firms directly engaged in any discrimination in which Denver passively participates do so intentionally, with the purpose of disadvantaging minorities and women.... Denver’s only burden was to introduce evidence which raised the inference of discriminatory exclusion in the local construction industry and link its spending to that discrimination.... Denver was under no burden to identify any specific practice or policy that resulted in discrimination. Neither was Denver required to demonstrate that the purpose of any such practice or policy was to disadvantage women or minorities. To impose such a burden on a municipality would be tantamount to requiring proof of discrimination and would eviscerate any reliance the municipality could place on statistical studies and anecdotal evidence.<sup>83</sup>

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<sup>79</sup> *Id.* at 970.

<sup>80</sup> *Id.* at 975.

<sup>81</sup> *Id.* at 976.

<sup>82</sup> *Id.* at 973 (emphasis in the original).

<sup>83</sup> *Id.* at 971.

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Similarly, the trial court was wrong to reject the statistical evidence because such evidence cannot identify the individuals responsible for the discrimination.<sup>84</sup>

Contrary to the district court's conclusion, the burden of compliance need not be placed only upon those firms directly responsible for the discrimination. The proper focus is whether the burden on third parties is "too intrusive" or "unacceptable."<sup>85</sup>

*Croson's* admonition that "mere societal" discrimination is not enough to meet strict scrutiny<sup>86</sup> does not apply where the government presents evidence of discrimination in the industry targeted by the program. "If such evidence is presented, it is immaterial for constitutional purposes whether the industry discrimination springs from widespread discriminatory attitudes shared by society or is the product of policies, practices, and attitudes unique to the industry.... The genesis of the identified discrimination is irrelevant." The trial court was wrong to require Denver to "show the existence of specific discriminatory policies and that those policies were more than a reflection of societal discrimination."<sup>87</sup>

The Tenth Circuit further rejected the notion that a municipality must prove that it is itself guilty of discrimination to meet its burden. Denver can show its compelling interest by "evidence of private discrimination in the local construction industry coupled with evidence that it has become a passive participant in that discrimination...[by] linking its spending practices to the private discrimination."<sup>88</sup> Denver further linked its award of public dollars to discriminatory conduct through the testimony of M/WBEs that identified general contractors who used them on City projects with M/WBE goals but refused to use them on private projects without goals.

The court then turned to the evidence of discrimination against M/WBEs in the market for commercial credit. The lending discrimination studies and business formation studies are relevant and probative because they show a strong link between the disbursement of public funds and the channeling of those funds due to private discrimination. "Evidence that private discrimination results in barriers to business formation is relevant because it demonstrates that M/WBEs are precluded *at the outset* from competing for public construction contracts. Evidence of barriers to fair competition is also relevant because it again demonstrates that *existing* M/WBEs are precluded from competing for public contracts."<sup>89</sup> Plaintiff failed to present evidence to rebut the lending discrimination data, instead resting on its belief that such evidence is irrelevant. Contrary to the trial court's ruling, the business formation studies were not flawed because they did not control for "quality of education," "culture" and "religion." Plaintiff failed

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<sup>84</sup> *Id.* at 973.

<sup>85</sup> *Id.*

<sup>86</sup> *See* 488 U.S. at 497.

<sup>87</sup> *Concrete Works IV*, 321 F.3d at 976.

<sup>88</sup> *Id.* at 977.

<sup>89</sup> *Id.*

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not only to define such vague terms but also to conduct its own study controlling for these factors or to produce expert testimony that to do so would eliminate the disparities.<sup>90</sup>

The district court also erred in rejecting the disparity studies because they did not control for firm size, area of specialization, and whether the firm had bid on City projects. The circuit court agreed with Denver's experts that, while it may be true that M/WBEs are smaller in general than white male firms, most construction firms are small and can expand and contract to meet their bidding opportunities. Importantly, Denver established that size and experience are not race- and gender-neutral variables: "M/WBE construction firms are generally smaller and less experienced *because* of discrimination."<sup>91</sup> Further, plaintiff failed to conduct any study showing that the disparities disappear when such variables are held constant. Likewise, it presented no evidence that controlling for firm specialization explained the disparities. "Additionally, we do not read *Croson* to require disparity studies that measure whether construction firms are able to perform a *particular contract*."<sup>92</sup>

That M/WBEs were overutilized on City projects with goals goes only to the weight of the evidence because it reflects the effects of a remedial program. Denver presented evidence that goals and non-goals projects were similar in purpose and scope and that the same pool of contractors worked on both types. "Particularly persuasive" was evidence that M/WBE participation declined significantly when the program was amended in 1989. The "utilization of M/WBEs on City projects has been affected by the affirmative action programs that have been in place in one form or another since 1977. Thus, the non-goals data is the better indicator of discrimination in public contracting" and supports the position that discrimination existed before the enactment of the ordinances.<sup>93</sup>

There is no requirement that anecdotal testimony be verified. "Denver was not required to present corroborating evidence and CWC was free to present its own witnesses to either refute the incidents described by Denver's witnesses or to relate their own perceptions on discrimination in the Denver construction industry."<sup>94</sup> This "failure" of the legislative body to somehow verify testimony had been a favorite shibboleth of plaintiffs in other cases.<sup>95</sup>

Finally, as for the narrow tailoring requirement of strict scrutiny, the court held that because plaintiff had waived its claim that the ordinances were not narrowly tailored at an earlier stage in this litigation, the district court's holding in *Concrete Works I* that the ordinances satisfy the other prong of strict scrutiny was affirmed.

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<sup>90</sup> *Id.* at 979.

<sup>91</sup> *Id.* at 983 (emphasis in the original).

<sup>92</sup> *Id.* at 987-88 (emphasis in the original).

<sup>93</sup> *Id.*

<sup>94</sup> *Id.* at 989.

<sup>95</sup> See, e.g., *Builders Association of Greater Chicago v. County of Cook*, 123 F.Supp.2d 1087 (N.D. Ill. 2000) ("*BAGC v. Cook*").

## 2. Builders Association of Greater Chicago v. City of Chicago

The City of Chicago employed economic analyses similar to those upheld in *Concrete Works* in its successful defense of its compelling interest in remedying discrimination against Black-, Hispanic- and women-owned construction firms.<sup>96</sup> However, the program as implemented in 2003, which had not been reviewed since its inception in 1990, was not sufficiently narrowly tailored to meet strict constitutional scrutiny. The court stayed the final order against operation of the Program for construction contracts for six months, to permit the City to review the ruling and adopt a new program.<sup>97</sup>

The opinion first reviews the historical proof of discrimination against minorities, particularly Blacks, in the Chicago construction industry. While not legally mandated, Chicago was a segregated city and “City government was implicated in that history.” After the election of Harold Washington as the first Black mayor, several reports focused on the exclusion of minorities and women from City procurement opportunities as well as pervasive employment discrimination by City departments. Mayor Washington imposed an executive order mandating that at least 25 percent of City contracts be awarded to minority-owned businesses and 5 percent to women-owned businesses.

In response to *Croson*, Chicago commissioned a Blue Ribbon Panel to recommend an effective program that would survive constitutional challenge. Based upon the Panel’s Report, and 18 days of hearings with over 40 witnesses and 170 exhibits, Chicago adopted a new program in 1990 that retained the 25 percent MBE and 5 percent WBE goals; added a Target Market, wherein contracts were limited to bidding only by M/WBEs; and provided that larger construction contracts could have higher goals.

The court held that the playing field for minorities and women in the Chicago area construction industry in 2003 was still not level. The City presented a great amount of statistical evidence. Despite the plaintiff’s attacks about over-aggregation and disaggregation of data and which firms were included in the analyses, “a reasonably clear picture of the Chicago construction industry emerged.... While the size of the disparities was disputed, it is evident that minority firms, even after adjustment for size, earn less and work less, and have less sales compared to other businesses.”

That does not mean, however, that speculation about the greater number of M/WBEs that did exist in the absence of discrimination is sufficient to support a current race-based remedy. At the same time, that there was perhaps overutilization of M/WBEs on City projects was not sufficient to abandon remedial efforts, as that result is “skewed by the program itself.”

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<sup>96</sup> *Builders Association of Greater Chicago v. City of Chicago*, 298 F. Supp.2d 725 (N.D. Ill. 2003), *aff’d*, 256 F.3d 642 (7th Cir. 2001) (“*BAGC v. Chicago*”).

<sup>97</sup> A similar suit was filed against Cook County’s Program, which was declared unconstitutional in 2000. *Builders Association of Greater Chicago v. County of Cook*, 123 F.Supp.2d 1087 (N.D. Ill. 2000), *aff’d*, 256 F.3d 642 (7th Cir. 2001) (“*BAGC v. Cook*”). In contrast to the City of Chicago, Cook County presented very little statistical evidence and none directed towards establishing M/WBE availability, utilization, economy-wide evidence of disparities, or other proof beyond anecdotal testimony. It also provided no evidence related to narrow tailoring.

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Further, while it is somewhat unclear whether disparities for Asians and Hispanics result from discrimination or the language and cultural barriers common to immigrants, there were two areas “where societal explanations do not suffice.” The first is the market failure of prime contractors to solicit M/WBEs for non-goals work. Chicago’s evidence was consistent with that presented of the effects of the discontinuance or absence of race-conscious programs throughout the country. Not only did the plaintiff fail to present credible alternative explanations for this universal phenomenon but also this result “follows as a matter of economics.... [P]rime contractors, without any discriminatory intent or bias, are still likely to seek out the subcontractors with whom they have had a long and successful relationship.... [T]he vestiges of past discrimination linger on to skew the marketplace and adversely impact M/WBEs disproportionately as more recent entrants to the industry.... [T]he City has a compelling interest in preventing its tax dollars from perpetuating a market so flawed by past discrimination that it restricts existing M/WBEs from unfettered competition in that market.”<sup>98</sup>

The judge also relied upon the City’s evidence of discrimination against minorities in the market for commercial loans. Even the plaintiff’s expert was forced to concede that, at least as to Blacks, credit availability appeared to be a problem. Plaintiff’s expert also identified discrimination against white females in one data set.

After finding that Chicago met the compelling interest prong, the court held that the City’s program was not narrowly tailored to address these market distortions and barriers because:

- There was no meaningful individualized review of M/WBEs’ eligibility;
- There was no sunset date for the ordinance or any means to determine a date;
- The graduation threshold of \$27.5M was very high and few firms have graduated;
- There was no personal net worth limit;
- The percentages operated as quotas unrelated to the number of available firms;
- Waivers were rarely granted;
- No efforts were made to impact private sector utilization of M/WBEs; and
- Race-neutral measures had not been promoted, such as linked deposit programs, quick pay, contract downsizing, restricting prime contractors’ self-performance, reducing bonds and insurance requirements, local bid preferences for subcontractors and technical assistance.

Chicago is the only city ever to have received a stay to permit revision of its program to meet narrow tailoring. It amended its ordinance to meet the court’s 2004 deadline and continues to implement M/WBE subcontracting goals without interruption.

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<sup>98</sup> *BAGC v. Chicago*, 298 F. Supp.2d at 738.

### 3. JMAA's Compelling Interest in Remediating Identified Discrimination in Its Contracting Market Area

As just described, much of the discussion in the case law has revolved around what type of evidence is sufficiently “strong” to establish the continuing existence and effects of economic discrimination against minorities resulting in diminished opportunities to do business with the government. Proof of the disparate impacts of economic factors on D/M/WBEs and the disparate treatment of such firms by factors critical to their success is necessary to meet strict scrutiny. Discrimination must be shown using statistics and economic models to examine the effects of systems or markets on different groups, as well as by evidence of personal experiences with discriminatory conduct, policies or systems.<sup>99</sup> Specific evidence of discrimination or its absence may be direct or circumstantial, and should include economic factors and opportunities in the private sector affecting the success of D/M/WBEs.<sup>100</sup>

The following are factors JMAA must consider to determine whether it has a strong basis in evidence to adopt a DBE or M/WBE program for its locally-funded contracts.

#### a. Definition of JMAA's Market Area

*Croson* counsels that a state or local government may only remedy discrimination within its own contracting market area. Richmond was specifically faulted for including minority contractors from across the country in its program.<sup>101</sup> This Study empirically establishes the geographic and product dimensions of JMAA's contracting and procurement market area in order to ensure that the evidence is narrowly tailored.<sup>102</sup>

#### (1) Examining Disparities between D/M/WBE Availability and Utilization

Next, statistical examination of the availability of minorities and women to participate in JMAA's projects and the history of utilizing D/M/WBEs as prime contractors and as subcontractors by the Airport and its prime contractors is required as part of this Study.<sup>103</sup> Simple disparities between an area's overall minority population and its prime contractors' utilization of minority- and women-owned firms are not enough.<sup>104</sup> The primary inquiry is whether there are statistically significant disparities between the availability of D/M/WBEs and the utilization of such firms.

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<sup>99</sup> *Adarand VII*, 228 F.3d at 1166 (“statistical and anecdotal evidence are appropriate”).

<sup>100</sup> *Id.*

<sup>101</sup> *Croson*, 488 U.S. at 508.

<sup>102</sup> *Concrete Works II*, 36 F.3d at 1520 (to confine data to strict geographic boundaries would ignore “economic reality”).

<sup>103</sup> An availability study is a subset of a disparity study, in that statistical evidence of disparities between the difference of availability of D/M/WBEs and their utilization as prime contractors and subcontractors is not included.

<sup>104</sup> *Croson*, 488 U.S. at 501-02; *Drabik II*, 214 F.3d at 736.

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Where there is a significant statistical disparity between the number of qualified minority contractors willing and able to perform a particular service and the number of such contractors actually engaged by the locality or the locality's prime contractors, an inference of discriminatory exclusion could arise.... In the extreme case, some form of narrowly tailored racial preference might be necessary to break down patterns of deliberate exclusion.<sup>105</sup>

This is known as the "disparity ratio" or "disparity index." A disparity ratio measures the participation of a group in the agency's contracting dollars by dividing that group's contract dollar percentage by the related bidder or awardee percentage, and multiplying that result by 100 percent. Courts, including the Fifth Circuit, have looked to disparity indices in determining whether *Croson's* evidentiary foundation is satisfied.<sup>106</sup> An index less than 100 percent indicates that a given group is being utilized less than would be expected based on its availability, and courts have adopted the Equal Employment Opportunity Commission's "80 percent" rule; that is, that a ratio less than 80 percent presents a *prima facie* case of discrimination.<sup>107</sup>

We note that the failure to engage in this type of statistical analysis led to the demise of the City of Jackson's program many years ago. The City had adopted a MBE program and set a 15 percent overall goal for City contracts. It had commissioned and then rejected a disparity study, and no other evidentiary efforts were made to support the continued application of the program. After holding the plaintiff had standing to pursue his case because his low bid providing 1 percent DBE participation had been rejected, the Fifth Circuit upheld the district court's ruling that Jackson's failure to rely upon a study was fatal to its argument that it had a strong basis in evidence.

Whatever probity the study's findings might have had on our analysis is of no moment. The City refused to adopt the study when it was issued in 1995, and its belated reliance is unpersuasive.... We do not doubt in the least that the City of Jackson struggles, as it says, 'to reverse the effects of its shameful racial history.' It is not alone. The Supreme Court, however, has dictated that strict scrutiny applies to racial classifications, regardless of the race of those burdened or benefited by the classification [citations omitted] and it has announced the type of proof that will survive strict scrutiny, see 488 U.S. at 509. Had the City adopted particularized findings of discrimination within its various agencies, and set participation goals for each accordingly, our outcome today might be different. Absent such evidence in the City's construction industry, however, the City lacks the factual

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<sup>105</sup> *Croson*, 488 U.S. at 509, see *Webster*, 51 F.Supp.2d at 1363, 1375.

<sup>106</sup> *Scott*, 199 F.3d at 218, n11 ("we [do not] attempt to craft a precise mathematical formula to assess the quantum of evidence that rises to the *Croson* "strong basis in evidence" benchmark. The sufficiency of a municipality's findings of discrimination in a local industry must be evaluated on a case-by-case basis"); see also *Concrete Works II*, 36 F.3d at 1526-1527; *O'Donnell*, 963 F.2d at 426; *Cone Corp. v. Hillsborough County*, 908 F.2d 908, 916 (11th Cir. 1990), cert. denied, 498 U.S. 983 (1990).

<sup>107</sup> *Engineering Contractors II*, 122 F3d at 914; see 29 C.F.R. § 1607.4(D) ("A selection rate for any race, sex, or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact, while a greater than four-fifths rate will generally not be regarded by Federal enforcement agencies as evidence of adverse impact.").

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predicates required under the Equal Protection Clause to support the Department's 15% DBE-participation goal. That is, it has failed to establish a compelling interest justifying the Special Notice. Because the Special Notice fails a strict scrutiny analysis on this ground, we decline to address whether it is narrowly tailored.<sup>108</sup>

Calculations of the availability of minority- and women-owned firms are therefore the crucial foundation for examining the government's compelling interest in pursuing affirmative action in contracting.<sup>109</sup> In addition to creating the disparity ratio, correct measures of availability are necessary to determine whether discriminatory barriers depress the formation of firms by minorities and women, and the success of such firms in doing business in both the private and public sectors.<sup>110</sup>

JMAA need not prove that the statistical inferences of discrimination are "correct." In upholding Denver's M/WBE Program, the Tenth Circuit noted that strong evidence supporting Denver's determination that remedial action was necessary need not have been based upon "irrefutable or definitive" proof of discrimination. Statistical evidence creating inferences of discriminatory motivations was sufficient and therefore evidence of market area discrimination was properly used to meet strict scrutiny. It is the plaintiff who must prove by a preponderance of the evidence that such proof does not support those inferences.<sup>111</sup>

It is also the case that if M/WBEs are "overutilized" because of the entity's program, that does not end the inquiry. Where the government has been implementing affirmative action remedies, M/WBE utilization reflects those efforts; it does not signal the end of discrimination. For example, the Tenth Circuit held that Denver's overutilization of M/WBEs on City projects with goals went only to the weight of the evidence because it reflected the effects of a remedial program. Denver presented evidence that goals and non-goals projects were similar in purpose and scope and that the same pool of contractors worked on both types. "Particularly persuasive" was evidence that M/WBE participation declined significantly when the program was amended in 1989. "The utilization of M/WBEs on City projects has been affected by the affirmative action programs that have been in place in one form or another since 1977. Thus, the non-goals data is [sic] the better indicator of discrimination in public contracting" and supports the position that discrimination was present before the enactment of the ordinances.<sup>112</sup>

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<sup>108</sup> *Scott*, 199 F.3d at 218-219.

<sup>109</sup> *Philadelphia III*, 91 F.3d at 603; *Webster*, 51 F.Supp.2d at 1372 (no explanation for the source nor any indicia of the accuracy or reliability of availability figures).

<sup>110</sup> *Webster*, 51 F.Supp.2d at 1372; see *Northern Contracting II* at \*70 (IDOT's custom census approach was supportable because "discrimination in the credit and bonding markets may artificially reduce the number of M/WBEs").

<sup>111</sup> *Concrete Works IV*, 321 F.3d at 971.

<sup>112</sup> *Id.* at 987-988.

### (2) Unremediated Markets Data

It is also useful to measure D/M/WBE participation in the absence of affirmative action goals, if such evidence is available. Evidence of race and gender discrimination in relevant “unremediated”<sup>113</sup> markets provides an important indicator of what level of actual M/WBE participation can be expected in the absence of government mandated affirmative efforts to contract with M/WBEs.<sup>114</sup> This is particularly relevant for an agency such as the Airport which has not applied affirmative action remedies to all its locally-funded contracts. As the Eleventh Circuit has acknowledged, “the program at issue may itself be masking discrimination that might otherwise be occurring in the relevant market.”<sup>115</sup> The courts are clear that the government has a compelling interest in not financing the evil of private prejudice with public dollars.<sup>116</sup> If M/WBE utilization is below availability in unremediated markets, an inference of discrimination may be supportable. The virtual disappearance of M/WBE participation after programs have been enjoined or abandoned strongly indicates substantial barriers to minority subcontractors, “raising the specter of racial discrimination.”<sup>117</sup> Unremediated markets analysis addresses whether the government has been and continues to be a “passive participant” in such discrimination, in the absence of affirmative action remedies.<sup>118</sup> The results of non-goals contracts can help to demonstrate that, but for the interposition of remedial affirmative action measures, discrimination would lead to disparities in government contracting. The “dramatic decline in the use of M/WBEs when an affirmative action program is terminated, and the paucity of use of such firms when no affirmative action program was ever initiated,” has been held to be proof of the government’s compelling interest in employing race- and gender-conscious measures.<sup>119</sup> Evidence of unremediated markets “sharpens the picture of local market conditions for MBEs and WBEs.”<sup>120</sup>

### (3) Anecdotal Evidence

Anecdotal evidence of experiences with discrimination in contracting opportunities is relevant because it goes to the question of whether observed statistical disparities are due to discrimination and not to some other non-discriminatory cause or causes.<sup>121</sup> As observed by the Supreme Court, anecdotal evidence presented in a pattern or practice discrimination case can be

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<sup>113</sup> “Unremediated market” means “markets that do not have race- or gender-conscious subcontracting goals in place to remedy discrimination.” *Northern Contracting II* at \*36.

<sup>114</sup> *See, e.g., Western States*, 407 F.3d at 992 (Congress properly considered evidence of the “significant drop in racial minorities’ participation in the construction industry” after state and local governments removed affirmative action provisions).

<sup>115</sup> *Engineering Contractors II*, 122 F.3d at 912.

<sup>116</sup> *See, e.g., Drabik II*, 214 F.3d at 734-735.

<sup>117</sup> *Adarand VII*, 228 F.3d at 1174.

<sup>118</sup> *See also Philadelphia III*, 91 F.3d at 599-601.

<sup>119</sup> *BAGC v. Chicago*, 298 F. Supp.2d at 737; *see also Concrete Works IV*, 321 F.3d at 987-988.

<sup>120</sup> *Concrete Works II*, 36 F.3d at 1529.

<sup>121</sup> *Webster*, 51 F.Supp.2d at 1363, 1379.

persuasive because it “brought the cold [statistics] convincingly to life.”<sup>122</sup> Testimony about discrimination by prime contractors, unions, bonding companies, suppliers, and lenders has been found relevant regarding barriers both to minority firms’ business formation and to their success on governmental projects.<sup>123</sup> While anecdotal evidence is insufficient standing alone, “[p]ersonal accounts of actual discrimination or the effects of discriminatory practices may, however, vividly complement empirical evidence. Moreover, anecdotal evidence of a [government’s] institutional practices that exacerbate discriminatory market conditions are [sic] often particularly probative.”<sup>124</sup> “[W]e do not set out a categorical rule that every case must rise or fall entirely on the sufficiency of the numbers. To the contrary, anecdotal evidence might make the pivotal difference in some cases; indeed, in an exceptional case, we do not rule out the possibility that evidence not reinforced by statistical evidence, as such, will be enough.”<sup>125</sup>

Most recently, the Fourth Circuit found anecdotal evidence from a telephone survey, personal interviews and focus groups to be relevant and probative of whether North Carolina met its burden. A telephone survey conducted by the consultant resulted in strong evidence of discriminatory treatment of both African American and Native American firms including: discriminatory “good old boy networks;” double standards applied to both qualifications and performance; changes in bids when not required to use minority firms; and dropping minority subcontractors after winning contracts. Focus group and interview results confirmed these findings. As the court summarized:

The surveys in the 2004 study exposed an informal, racially exclusive network that systemically disadvantaged minority subcontractors. The State could conclude with good reason that such networks exert a chronic and pernicious influence on the marketplace that calls for remedial action.... [P]rime contractors have higher standards for minority subcontractors, view minority subcontractors as being less competent than nonminority businesses, change their bidding practices when not required to hire minority subcontractors, and drop minority subcontractors after winning contracts. Together, these responses suggest strongly that the underutilization of African American and Native American subcontractors is more than a mere byproduct of misguided yet color-blind cronyism.<sup>126</sup>

The *Rowe* court specifically rejected the notion that anecdotal testimony must be “verified” or corroborated, as befits the role of evidence in legislative decision-making as opposed to judicial proceedings. “Plaintiff offers no rationale as to why a fact finder could not rely on the State’s ‘unverified’ anecdotal data. Indeed, a fact finder could very well conclude that anecdotal evidence need not—indeed cannot—be verified because it ‘is nothing more than a witness’ narrative of an incident told from the witness’ perspective and including the witness’

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<sup>122</sup> *International Brotherhood of Teamsters v. United States*, 431 U.S. 324, 399 (1977).

<sup>123</sup> *Adarand VII*, 228 F.3d at 1168-1172.

<sup>124</sup> *Concrete Works II*, 36 F.3d at 1520, 1530.

<sup>125</sup> *Engineering Contractors II*, 122 F.3d at 926.

<sup>126</sup> *Rowe*, 615 F.3d at 251.

perception.”<sup>127</sup> Likewise, the Tenth Circuit held that “Denver was not required to present corroborating evidence and [plaintiff] was free to present its own witnesses to either refute the incidents described by Denver’s witnesses or to relate their own perceptions on discrimination in the Denver construction industry.”<sup>128</sup>

### **F. Narrowly Tailoring a Race-Conscious Local Program**

Even if JMAA has a strong basis in evidence to believe that race-based measures are needed to remedy identified discrimination in its local contract market, the program must be narrowly tailored to that evidence. The courts have repeatedly examined the following factors in determining whether race-based remedies are narrowly tailored to achieve their purpose:

- The efficacy of race-neutral remedies at overcoming identified discrimination;
- The relationship of numerical benchmarks for government spending to the availability of minority- and women-owned firms and to subcontracting goal setting procedures;
- The flexibility of the program requirements, including the provision for good faith efforts to meet goals and contract specific goal setting procedures;
- The congruence between the remedies adopted and the beneficiaries of those remedies;
- Any adverse impact of the relief on third parties; and
- The duration of the program.<sup>129</sup>

The Fourth Circuit Court of Appeals has described the narrow tailoring requirements as follows:

The preferences may remain in effect only so long as necessary to remedy the discrimination at which they are aimed; they may not take on a life of their own. The numerical goals must be waivable if qualified minority applications are scarce, and such goals must bear a reasonable relation to minority percentages in the relevant qualified labor pool, not in the population as a whole. Finally, the preferences may not supplant race-neutral alternatives for remedying the same discrimination.<sup>130</sup>

It is imperative that remedies not operate as fixed quotas.<sup>131</sup> Firms that fail to meet the subcontracting goals but make good faith efforts to do so must be eligible for contract awards.<sup>132</sup>

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<sup>127</sup> *Id.* at 249.

<sup>128</sup> *Concrete Works IV*, 321 F.3d at 989.

<sup>129</sup> *United States v. Paradise*, 480 U.S. 149, 171 (1987); *see also Sherbrooke*, 345 F.3d at 971-972; *Drabik II*, 214 F.3d at 737-738.

<sup>130</sup> *Maryland Troopers Association, Inc. v. Evans*, 993 F.2d 1072, 1076-77 (4<sup>th</sup> Cir. 1993) (citations omitted).

<sup>131</sup> *See* 49 C.F.R. 26.43 (quotas are not permitted and set-aside contracts may be used only in limited and extreme circumstances “when no other method could be reasonably expected to redress egregious instances of discrimination”).

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Further, firms that meet the goals cannot be favored over those who made good faith efforts. In *Croson*, the Court refers approvingly to the contract-by-contract waivers used in the USDOT's DBE program.<sup>133</sup> This feature has been central to the holding that the DBE program meets the narrow tailoring requirement.<sup>134</sup>

The over- or under-inclusiveness of those persons to be included in the program is an additional consideration, and goes to whether the remedies truly target the evil identified.<sup>135</sup> The “fit” between the problem and the remedy manifests in three ways: which groups to include, how to define those groups, and which persons will be eligible to be included within those groups.

First, the determination of presumptive social disadvantage of each racial and ethnic group must be based upon the evidence.<sup>136</sup> In striking down the District of Columbia's MBE program, the court noted that there were no “findings with respect to discrimination in the construction industry against Hispanic Americans, Asian Americans, Pacific Islander Americans, or Native Americans, all of whom are included in the Act's definition of ‘minority.’”<sup>137</sup> The “random inclusion” of groups that may never have experienced discrimination in the entity's marketplace may indicate impermissible “racial politics.”<sup>138</sup> Similarly, the Seventh Circuit, in striking down Cook County's program, remarked that a “state or local government that has discriminated just against blacks may not by way of remedy discriminate in favor of blacks and Asian-Americans and women.”<sup>139</sup>

However, at least one court has held that some quantum of evidence of discrimination for each group is sufficient. The Tenth Circuit held that *Croson* does not require that each group included in the ordinance suffer equally from discrimination.<sup>140</sup>

Next, the level of specificity at which to define beneficiaries must be addressed. Approaches range from a single goal like the DBE Program that includes all racial and ethnic minorities and White women,<sup>141</sup> to separate goals for each minority group and women.<sup>142</sup> However, the State of

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<sup>132</sup> See, e.g., *BAGC v. Chicago*, 298 F. Supp.2d at 740 (“Waivers are rarely or never granted...The City program is a rigid numerical quota...formulistic percentages cannot survive strict scrutiny.”).

<sup>133</sup> 488 U.S. at 508; see also *Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147, 1181 (10<sup>th</sup> Cir. 2000), cert. granted then dismissed as improvidently granted, 532 U.S. 941, 534 U.S. 103 (2001) (“*Adarand VII*”).

<sup>134</sup> See, e.g., *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d 964, 972 (8<sup>th</sup> Cir. 2003), cert. denied, 541 U.S. 1041 (2004).

<sup>135</sup> *Association for Fairness in Business, Inc. v. New Jersey*, 82 F.Supp.2d 353, 360 (D.N.J. 2000).

<sup>136</sup> *Contractors Association of Eastern Pennsylvania v. City of Philadelphia*, 6 F.3d 990, 1007 (3rd Cir. 1993) (“*Philadelphia II*”) (strict scrutiny requires data for each minority group; data was insufficient to include Hispanics, Asians or Pacific Islanders or Native Americans); cf. *Northeastern Florida Chapter of the AGC v. Jacksonville*, 508 U.S. 656, 660-661 (1993) (new ordinance narrowed to Blacks and women).

<sup>137</sup> *O'Donnell Construction Co., Inc. v. District of Columbia*, 963 F.2d at 427.

<sup>138</sup> *Webster*, 51 F.Supp.2d at 1380-1381.

<sup>139</sup> *BAGC v. Cook County*, 256 F.3d at 646 (no evidence of discrimination against any group other than Blacks).

<sup>140</sup> *Concrete Work IV*, 321 F.3d at 9761.

<sup>141</sup> See 49 C.F.R. §26.45(h) (overall goal must not be subdivided into group-specific goals).

Ohio's Program was specifically faulted for lumping together all "minorities," with the court questioning the legitimacy of forcing Black contractors to share relief with recent Asian immigrants.<sup>143</sup>

Third, program remedies should be limited to those firms that have a nexus to the harms sought to be ameliorated. Some courts have held that state and local programs must provide proof that the individual owner of a firm seeking to benefit from the program has suffered discrimination.<sup>144</sup>

Failure to make "neutral" changes to contracting and procurement policies and procedures that disadvantage all small businesses may result in a finding that the program unduly burdens non-M/WBEs.<sup>145</sup> However, "innocent" parties can be made to share some of the burden of the remedy for eradicating racial discrimination.<sup>146</sup> To hold otherwise "would be to render strict scrutiny effectively fatal, in contravention of Justice O'Connor's clear statements to the contrary."<sup>147</sup>

Race-based programs must have duration limits.<sup>148</sup> A race-based remedy must "not last longer than the discriminatory effects it is designed to eliminate."<sup>149</sup> As held by the Sixth Circuit, "[n]arrow tailoring also implies some sensitivity to the possibility that a program might someday have satisfied its purposes."<sup>150</sup> One of the factors leading to the court's holding that the City of Chicago's M/WBE Program was no longer narrowly tailored was the lack of a sunset

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<sup>142</sup> See *Engineering Contractors II*, 122 F.3d at 900 (separate goals for Blacks, Hispanics and women).

<sup>143</sup> *Drabik II*, 214 F.3d at 737; see also *Western States*, 407 F.3d at 998 ("We have previously expressed similar concerns about the haphazard inclusion of minority groups in affirmative action programs ostensibly designed to remedy the effects of discrimination.").

<sup>144</sup> See, e.g., *Associated General Contractors of Ohio, Inc. v. Drabik*, 50 F.Supp.2d 741, 766 (S.D. Ohio 1999) ("*Drabik I*") (no "consideration given to whether the particular MBE seeking a racial preference has suffered from the effects of past discrimination by the state or prime contractors."); *Main Line Paving Co., Inc. v. Board of Education*, 725 F.Supp. 1349, 1362 (E.D. Penn. 1989) ("program contains no provisions to identify those who were victims of past discrimination and to limit the program's benefits to them").

<sup>145</sup> See *Engineering Contractors Assoc. of South Florida, Inc. v. Metropolitan Dade County*, 943 F.Supp. 1546, 1581-1582 (S.D. Fla. 1996) ("*Engineering Contractors I*") (County chose not to change its procurement system).

<sup>146</sup> *Concrete Works IV*, 321 F.3d at 973; *Wygant v. Jackson Board of Education*, 476 U.S. 267, 280-281 (1986); *Adarand VII*, 228 F.3 at 1183 ("While there appears to be no serious burden on prime contractors, who are obviously compensated for any additional burden occasioned by the employment of DBE subcontractors, at the margin, some non-DBE subcontractors such as *Adarand* will be deprived of business opportunities"); cf. *Northern Contracting, Inc. v. Illinois Department of Transportation*, 2005 U.S. Dist. LEXIS 19868, \*5 (Sept. 8, 2005) ("*Northern Contracting IP*") ("Plaintiff has presented little evidence that it [sic] has suffered anything more than minimal revenue losses due to the program."); *Western States*, 407 F.3d at 995.

<sup>147</sup> *Adarand VII*, 228 F.3 at 1183 (citing *Adarand III*, 515 U.S. at 237).

<sup>148</sup> *Drabik I*, 50 F.Supp.2d at 766 ("The 1980 MBE Act is unlimited in duration.... There is no evidence that, at any time during the nearly two decades the Act has been in effect, the General Assembly has ever reconsidered whether a compelling state interest exists which would justify the continuation of a race-based remedy.").

<sup>149</sup> *Adarand*, 515 U.S. at 238.

<sup>150</sup> *Drabik II*, 214 F.3d at 737.

provision.<sup>151</sup> In contrast, the USDOT DBE Program's periodic review by Congress has been repeatedly held to provide adequate durational limits.<sup>152</sup>

This means that affirmative action programs must be regularly reviewed to ensure that a strong basis in evidence remains to use the highly suspect tool of race in government decision making. Very old studies will not suffice to support current programs.<sup>153</sup> The City of Augusta, Georgia's program failed to meet strict scrutiny, because "the [M/WBE] Program is still in place 13 years after the [Disparity] Study was compiled without any further investigation into the underlying reasons for creating a program, and without any sunset or expiration provision."<sup>154</sup> Likewise, Chicago's program was based on 14-year-old information, which, while it supported the program adopted in 1990, no longer was sufficient standing alone to justify the City's efforts in 1994.<sup>155</sup> How old is too old is not definitively answered,<sup>156</sup> but governments would be wise to analyze data at least once every five or six years.

### 1. Race- and Gender-Neutral Remedies

Race- and gender-neutral approaches have become a necessary component of a defensible and effective D/M/WBE program.<sup>157</sup> The failure to seriously consider race- and gender-neutral remedies has been fatal to M/WBE programs.<sup>158</sup> Such measures include unbundling of contracts into smaller units, providing technical support, and addressing issues of financing, bonding, and insurance important to all small and emerging businesses.<sup>159</sup> Difficulty in accessing procurement

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<sup>151</sup> *BAGC v. Chicago*, 298 F.Supp.2d at 739; see also *O'Donnell*, 963 F.2d at 428 (the District "reenacted the law in 1980 and deleted the sunset provision. Fifteen years have now passed since the District put its minority contracting program into effect. The District has not suggested that an end is in sight."); *Webster*, 51 F. Supp. 2d at 1382 (telling disqualifier was that the County had been implementing a "quota" program since 1979 with no contemplation of program expiration).

<sup>152</sup> See *Western States*, 407 F.3d at 995.

<sup>153</sup> See, e.g., *Baltimore I*, 83 F.Supp.2d at 620 (10-year-old evidence to justify 1999 goals is equivalent to no evidence).

<sup>154</sup> *Thompson. v. Augusta* at \*9.

<sup>155</sup> *BAGC v. Chicago*, 298 F.Supp.2d at 739.

<sup>156</sup> See, e.g., *Drabik I*, 50 F.Supp.2d at 745, 750 ("A program of race-based benefits cannot be supported by evidence of discrimination which is now over twenty years old.... The state conceded that it had no additional evidence of discrimination against minority contractors, and admitted that during the nearly two decades the Act has been in effect, it has made no effort to determine whether there is a continuing need for a race-based remedy."); *Brunet v. City of Columbus*, 1 F.3d 390, 409 (6th Cir. 1993) (fourteen-year-old evidence of discrimination "too remote to support a compelling governmental interest.").

<sup>157</sup> *Croson*, 488 U.S. at 507 (Richmond considered no alternatives to race-based quota); *Drabik II*, 214 F.3d at 738; *Philadelphia III*, 91 F.3d at 609 (City's failure to consider race-neutral alternatives was particularly telling); *Webster*, 51 F.Supp.2d at 1380 (for over 20 years County never seriously considered race-neutral remedies); cf. *Aiken*, 37 F.3d at 1164 (failure to consider race-neutral method of promotions suggested a political rather than a remedial purpose).

<sup>158</sup> See, e.g., *Florida A.G.C. Council, Inc. v. State of Florida*, Case No.: 4:03-CV-59-SPM at 10 (N. Dist. Fla. 2004) ("There is absolutely no evidence in the record to suggest that the Defendants contemplated race-neutral means to accomplish the objectives" of the statute); *Engineering Contractors II*, 122 F.3d at 928.

<sup>159</sup> See 49 CFR § 26.51.0.

opportunities, restrictive bid specifications, excessive experience requirements, and overly burdensome insurance and/or bonding requirements, for example, might be addressed by JMAA without resorting to the use of race or gender in its decision-making. Further, governments have a duty to ferret out and punish discrimination against minorities and women by their contractors, staff, lenders, bonding companies or others.<sup>160</sup> At a minimum, agencies must track the utilization of M/WBE firms as a measure of their success in the bidding process, including as subcontractors.<sup>161</sup>

However, strict scrutiny does not require that every race-neutral approach must be implemented and then proven ineffective before race-conscious remedies may be utilized.<sup>162</sup> While an entity must give good faith consideration to race-neutral alternatives, “strict scrutiny does not require exhaustion of every possible such alternative...however irrational, costly, unreasonable, and unlikely to succeed such alternative might be.... [S]ome degree of practicality is subsumed in the exhaustion requirement.”<sup>163</sup>

## 2. Targeted Goal Setting

Numerical goals or benchmarks for D/M/WBE participation must be substantially related to their availability in the relevant market.<sup>164</sup> Goals can be set at various levels of particularity and participation. The entity may set an overall, aspirational goal for its annual, aggregate spending.

One unanswered question is whether goals or benchmarks for overall agency contracting may be set higher than estimates of actual current availability. To freeze the goals at current head counts would set the results of discrimination—depressed M/WBE availability—as the marker of the elimination of discrimination. It therefore should be reasonable for the government to seek to attempt to level the racial and gender playing field by setting targets somewhat higher than current headcount. In upholding the DBE regulations, the Tenth Circuit stated that:

[B]ecause Congress has evidence that the effects of past discrimination have excluded minorities from the construction industry and that the number of available minority subcontractors reflects that discrimination, the *existing* percentage of minority-owned businesses is not necessarily an absolute cap on the percentage that a remedial program might legitimately seek to achieve. Absolute proportionality to overall demographics is an unreasonable goal. However, *Croson* does not prohibit setting an aspirational goal above the current percentage of minority-owned businesses that is substantially below the percentage of minority persons in the population as a whole. This aspirational goal is reasonably construed as narrowly tailored to remedy past discrimination that has resulted

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<sup>160</sup> *Croson*, 488 U.S. at 503 n.3; *Webster*, 51 F.Supp.2d at 1380.

<sup>161</sup> *See, e.g., Viridi* at n.8.

<sup>162</sup> *Grutter*, 529 U.S. at 339.

<sup>163</sup> *Coral Construction*, 941 F.2d at 923.

<sup>164</sup> *Webster*, 51 F.Supp.2d at 1379, 1381 (statistically insignificant disparities are insufficient to support an unexplained goal of 35 percent M/WBE participation in County contracts); *see also Baltimore I*, 83 F.Supp.2d at 621.

in homogenous ownership within the industry. It is reasonable to conclude that allocating more than 95% of all federal contracts to enterprises owned by non-minority persons, or more than 90% of federal transportation contracts to enterprises owned by non-minority males, is in and of itself a form of passive participation in discrimination that Congress is entitled to seek to avoid. *See Croson*, 488 U.S. at 492 (Op. of O'Connor, J.).<sup>165</sup>

At least one court has recognized that goal setting is not an absolute science. In holding the DBE regulations to be narrowly tailored, the Eighth Circuit noted that “[t]hrough the underlying estimates may be inexact, the exercise requires the States to focus on establishing realistic goals for DBE participation in the relevant contracting markets. This stands in stark contrast to the program struck down in *Croson*.”<sup>166</sup> “On the other hand, sheer speculation cannot form the basis for an enforceable measure.”<sup>167</sup>

It is settled case law that goals for a particular solicitation should reflect the particulars of the contract, not reiterate annual aggregate targets; goals must be contract specific. Contract goals must be based upon availability of D/M/WBEs to perform the anticipated scopes of subcontracting. Not only is this legally mandated,<sup>168</sup> but this approach also reduces the need to conduct good-faith efforts reviews as well as the temptation to create “front” companies and sham participation to appear to meet unreasonable contract goals. While this is more labor intensive than defaulting to the annual, overall goals, there is no option to avoid meeting the test of narrow tailoring because to do so would be more burdensome. The detailed availability estimates in Chapter IV can form the starting point for JMAA’s development of contract goals.

### 3. Flexibility of Goals and Requirements

It is imperative that remedies not operate as fixed quotas. A D/M/WBE program must provide for contract awards to firms who fail to meet the subcontracting goals but make good faith efforts to do so. Further, firms who meet the goals cannot be favored over those who made good faith efforts. In *Croson*, the Court refers approvingly to the contract-by-contract waivers used in the USDOT’s DBE program.<sup>169</sup> This feature has been central to the holding that the DBE program is narrowly tailored.<sup>170</sup>

### 4. Program Over-inclusiveness and Under-inclusiveness

The over- or under-inclusiveness of those persons to be included in a program is an additional consideration, and goes to whether the remedies truly target the evil identified.<sup>171</sup> The “fit”

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<sup>165</sup> *Adarand VII*, 228 F.3d at 1181 (emphasis in the original).

<sup>166</sup> *Sherbrooke*, 345 F.3d at 972.

<sup>167</sup> *Id.* (complete absence of evidence for 12-15 percent DBE goal); *see also BAGC v. Chicago*, 298 F.Supp.2d at 740 (City’s MBE and WBE goals were “formulistic” percentages not related to the availability of firms).

<sup>168</sup> *See Sherbrooke*, 345 F.3d at 972; *Coral Construction*, 941 F.2d at 924.

<sup>169</sup> *Croson*, 488 U.S. at 508; *see also Adarand VII*, 228 F.3d at 1181.

<sup>170</sup> *See, e.g., Sherbrooke*, 345 F.3d at 972.

<sup>171</sup> *See Association for Fairness in Business, Inc. v. New Jersey*, 82 F.Supp.2d 353, 360 (D.N.J. 2000).

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between the problem and the remedy manifests in three ways: which groups to include, how to define those groups, and which persons will be eligible to be included within those groups.

The groups to include must be based upon the evidence.<sup>172</sup> The “random inclusion” of ethnic or racial groups that may never have experienced discrimination in the entity’s market area may indicate impermissible “racial politics.”<sup>173</sup> Similarly, the Seventh Circuit, in striking down Cook County’s program, remarked that a “state or local government that has discriminated just against blacks may not by way of remedy discriminate in favor of blacks and Asian-Americans and women.”<sup>174</sup> However, at least one court has held some quantum of evidence of discrimination for each group is sufficient; *Croson* does not require that each group included in the ordinance suffer equally from discrimination.<sup>175</sup>

Therefore, remedies should be limited to those firms that have suffered actual harm. Goals should be set only for those groups shown to have suffered discrimination in the market area; a program that limits relief to the racial or ethnic groups that have suffered discrimination in the agency’s market area and have been adversely affected in their ability to obtain agency contracts will meet this element of narrow tailoring.<sup>176</sup> Similarly, the DBE Program’s rebuttable presumptions of social and economic disadvantage have been central to the courts’ holdings that it is narrowly tailored,<sup>177</sup> and anyone can challenge the disadvantaged status of any firm.<sup>178</sup>

The level of specificity at which to define beneficiaries is a policy question. Approaches range from a single M/WBE or DBE goal that includes all racial and ethnic minorities and nonminority women,<sup>179</sup> to separate goals for each minority group and women.<sup>180</sup> We note, however, that Ohio’s Program was specifically faulted for lumping together all “minorities,” with the court questioning the legitimacy of forcing African American contractors to share relief with recent Asian immigrants.<sup>181</sup>

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<sup>172</sup> *Philadelphia II*, 6 F.3d at 1007-1008 (strict scrutiny requires data for each minority group; data was insufficient to include Hispanics, Asians or Pacific Islanders or Native Americans).

<sup>173</sup> *Webster*, 51 F.Supp.2d at 1380-1381.

<sup>174</sup> *BAGC v. Cook*, 256 F.3d at 646.

<sup>175</sup> *Concrete Work IV*, 321 F.3d at 971.

<sup>176</sup> *Rowe*, 615 F.3d at 254 (“[T]he statute contemplates participation goals only for those groups shown to have suffered discrimination. As such, North Carolina’s statute differs from measures that have failed narrow tailoring for overinclusiveness.”).

<sup>177</sup> *Sherbrooke*, 345 F.3d at 973; *see also Grutter*, 539 U.S. at 341; *Adarand VII*, 228 F.3d at 1183-1184 (personal net worth limit is element of narrow tailoring); *cf. Associated General Contractors v. City of New Haven*, 791 F.Supp. 941, 948 (D. Conn. 1992), *vacated on other grounds*, 41 F.3d 62 (2d Cir. 1992) (definition of “disadvantage” was vague and unrelated to goal).

<sup>178</sup> 49 C.F.R. §26.87.

<sup>179</sup> *See* 49 C.F.R. §26.45(h) (overall goal must not be subdivided into group-specific goals).

<sup>180</sup> *See Engineering Contractors II*, 122 F.3d at 900 (separate goals for Blacks, Hispanics and women).

<sup>181</sup> *Drabik*, 214 F.3d at 737; *see also Western States*, 407 F.3d at 998 (“We have previously expressed similar concerns about the haphazard inclusion of minority groups in affirmative action programs ostensibly designed to remedy the effects of discrimination.”).

## 5. Sharing of the Burden by Third Parties

Failure to make “neutral” changes to contracting and procurement policies and procedures that disadvantage D/M/WBEs and other small businesses may result in a finding that the program unduly burdens non-M/WBEs.<sup>182</sup> However, “innocent” parties can be made to share some of the burden of the remedy for eradicating racial discrimination.<sup>183</sup> Burdens must be proven, and cannot constitute mere speculation by a plaintiff.<sup>184</sup> “Implementation of the race-conscious contracting goals for which TEA-21 provides will inevitably result in bids submitted by non-DBE firms being rejected in favor of higher bids from DBEs. Although this places a very real burden on non-DBE firms, this fact alone does not invalidate TEA-21. If it did, all affirmative action programs would be unconstitutional because of the burden upon non-minorities.”<sup>185</sup>

Narrow tailoring does permit certified firms acting as prime contractors to count their self-performance towards meeting contract goals. The DBE program regulations provide this remedy for discrimination against DBEs seeking prime work,<sup>186</sup> and the regulations do not limit the application of the program to only subcontracts.<sup>187</sup> The trial court explicitly recognized that barriers to subcontracting opportunities affect the ability of DBEs to compete for prime work on a fair basis in finding that Illinois’ DBE program was narrowly tailored.

This requirement that goals be applied to the value of the entire contract, not merely the subcontracted portion(s), is not altered by the fact that prime contracts are, by law, awarded to the lowest bidder. While it is true that prime contracts are awarded in a race- and gender-neutral manner, the Regulations nevertheless mandate application of goals based on the value of the entire contract. Strong policy reasons support this approach. Although laws mandating award of prime contracts to the lowest bidder remove concerns regarding direct discrimination at the level of prime contracts, [n30] the indirect effects of discrimination may linger. The ability of DBEs to compete successfully for prime contracts may be indirectly affected by discrimination in the subcontracting market, or in the bonding and financing markets. Such discrimination is particularly burdensome in the

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<sup>182</sup> See *Engineering Contractors Assoc. of South Florida, Inc. v. Metropolitan Dade County* (“*Engineering Contractors I*”), 943 F.Supp. 1546, 1581-1582 (S.D. Fla. 1996) (County chose not to change its procurement system).

<sup>183</sup> *Concrete Works IV*, 321 F.3d at 973; *Wygant*, 476 U.S. at 280-281; *Adarand VII*, 228 F.3d at 1183 (“While there appears to be no serious burden on prime contractors, who are obviously compensated for any additional burden occasioned by the employment of DBE subcontractors, at the margin, some non-DBE subcontractors such as *Adarand* will be deprived of business opportunities”); cf. *Northern Contracting II* at \*5 (“Plaintiff has presented little evidence that is [sic] has suffered anything more than minimal revenue losses due to the program.”).

<sup>184</sup> *Rowe*, 615 F.3d at 254 (prime bidder had no need for additional employees to perform program compliance and need not subcontract work it can self-perform).

<sup>185</sup> *Western States*, 407 F.3d at 995.

<sup>186</sup> 49 C.F.R. § 26.53(i) (“In determining whether a DBE bidder/offeror for a prime contract has met a contract goal, you count the work the DBE has committed to performing with its own forces as well as the work that it has committed to be performed by DBE subcontractors and DBE suppliers.”).

<sup>187</sup> 49 C.F.R. § 26.45(a)(1).

construction industry, a highly competitive industry with tight profit margins, considerable hazards, and strict bonding and insurance requirements.<sup>188</sup>

### 6. Duration and Review of Programs

“Narrow tailoring also implies some sensitivity to the possibility that a program might someday have satisfied its purposes.”<sup>189</sup> The USDOT DBE Program’s periodic review by Congress has been repeatedly held to provide adequate durational limits.<sup>190</sup> “[T]wo facts [were] particularly compelling in establishing that [North Carolina’s M/WBE program] was narrowly tailored: the statute’s provisions (1) setting a specific expiration date and (2) requiring a new disparity study every 5 years.”<sup>191</sup>

Conversely, it was the unlimited duration and lack of review that led to the City of Augusta, Georgia’s DBE program being enjoined,<sup>192</sup> as well as one factor in the court’s holding that the City of Chicago’s M/WBE Program was no longer narrowly tailored.<sup>193</sup>

### G. Table of Authorities

#### 1. Cases

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

*Adarand Constructors, Inc. v. Peña*, 965 F.Supp. 1556 (D. Colo. 1997), *rev’d*, 228 F.3d 1147 (2000) (“*Adarand IV*”).

*Adarand Constructors, Inc. v. Slater*, 228 F.3d 1147 (10<sup>th</sup> Cir. 2000), *cert. granted then dismissed as improvidently granted*, 532 U.S. 941, 534 U.S. 103 (2001) (“*Adarand VIF*”).

*Aiken v. City of Memphis*, 37 F.3d 1155 (6<sup>th</sup> Cir. 1994).

*Associated General Contractors of America v. City of Columbus*, 936 F. Supp. 1363, 1431-33 (S.D. Ohio 1996).

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<sup>188</sup> *Northern Contracting II*, 2005 U.S. Dist. LEXIS 19868 at 74.

<sup>189</sup> *Drabik*, 214 F.3d at 737.

<sup>190</sup> *See Western States*, 407 F.3d at 995.

<sup>191</sup> *Rowe*, 615 F.3d at 253.

<sup>192</sup> *Thompson Building Wrecking Co., Inc. v. City of Augusta, Georgia*, 2007 U.S. Dist. Lexis 27127 (S.D. Ga. 2007) at \*22-23.

<sup>193</sup> *BAGC v. Chicago*, 298 F.Supp.2d at 739; *see also Webster*, 51 F.Supp.2d at 1382 (one of Fulton County’s telling disqualifiers was that it had been implementing a “quota” program since 1979 with no contemplation of program expiration); *see also Viridi* at \*18 (“unlimited duration of the [District’s] racial goals also demonstrates a lack of narrow tailoring... While the District’s effort to avoid unintentional discrimination should certainly be ongoing, its reliance on racial classifications should not.”).

## Legal Standards for Government Affirmative Action Contracting Programs

*Associated General Contractors of Connecticut, Inc. v. City of New Haven*, 41 F.3d 62 (2<sup>nd</sup> Cir. 1994).

*Associated General Contractors of Ohio, Inc. v. Drabik*, 50 F.Supp.2d 741 (S.D. Ohio 1999) (“*Drabik I*”).

*Associated General Contractors of Ohio v. Drabik*, 214 F.3d 730 (6th Cir. 2000) (“*Drabik II*”).

*Associated Utility Contractors of Maryland, Inc. v. Mayor and City Council of Baltimore, et al.*, 83 F.Supp.2d 613 (D. Md. 2000) (“*Baltimore I*”).

*Association for Fairness in Business, Inc. v. New Jersey*, 82 F.Supp.2d 353 (D. N.J. 2000).

*Brunet v. City of Columbus*, 1 F.3d 390 (6th Cir. 1993).

*Builders Association of Greater Chicago v. City of Chicago*, 298 F. Supp.2d 725 (N.D. Ill. 2003).

*Builders Association of Greater Chicago v. County of Cook*, 123 F.Supp.2d 1087 (N.D. Ill. 2000); *aff'd*, 256 F.3d 642 (7th Cir. 2001).

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

*Coalition for Economic Equity v. Wilson*, 122 F.3d 692, 701 (9<sup>th</sup> Cir. 1997).

*Concrete Works of Colorado, Inc. v. City & County of Denver*, 823 F.Supp. 821 (D. Colo. 1993) (“*Concrete Works I*”).

*Concrete Works of Colorado, Inc. v. City and County of Denver*, 36 F.3d 1513 (10th Cir. 2003) (“*Concrete Works II*”).

*Concrete Works of Colorado, Inc. v. City & County of Denver*, 86 F.Supp. 2d 1042 (D. Colo. 2000) (“*Concrete Works III*”).

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

*Cone Corporation v. Hillsborough County*, 908 F.2d 909 (11th Cir. 1990).

*Contractors Association of Eastern Pennsylvania v. City of Philadelphia*, 6 F.3d 990 (3rd Cir. 1993) (“*Philadelphia II*”).

*Contractors Association of Eastern Pennsylvania v. City of Philadelphia*, 91 F.3d 586 (3rd Cir. 1996) (“*Philadelphia III*”).

*Coral Construction Co. v. King County*, 941 F.2d. 910 (9<sup>th</sup> Cir. 1991).

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*Engineering Contractors Association of South Florida, Inc. v. Metropolitan Dade County*, 943 F.Supp. 1546 (S.D. Fla. 1996) (“*Engineering Contractors I*”).

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

*Florida A.G.C. Council, Inc. v. State of Florida*, Case No.: 4:03-CV-59-SPM (N. D. Fla. 2004).

*GEOD Corp. v. New Jersey Transit Corp.*, 2009 U.S. Dist. Lexis 74120, \*11 (D. N. J. Aug. 20, 2009).

*Grutter v. Bollinger*, 539 U.S. 306 (2003).

*Harrison & Burrowes Bridge Constructors, Inc. v. Cuomo*, 981 F.2d 50 (2<sup>nd</sup> Cir. 1992).

*H. B. Rowe Co. v. Tippet*, 615 F.3d 233 (4<sup>th</sup> Cir. 2010).

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

*Main Line Paving Co., Inc. v. Board of Education*, 725 F.Supp. 1349, 1362 (E.D. Penn. 1989).

*Maryland Troopers Association, Inc. v. Evans*, 993 F.2d 1072, 1076-77 (4<sup>th</sup> Cir. 1993).

*North Shore Concrete and Associates, Inc. v. City of New York*, 1998 U.S. Dist. Lexis 6785 (E.D. N.Y. 1998).

*Northeastern Florida Chapter of the AGC v. Jacksonville*, 508 U.S. 656 (1993).

*Northern Contracting, Inc. v. Illinois Department of Transportation*, 2004 U.S. Dist. LEXIS, 3226 (N.D. Ill., Mar. 3, 2004) (“*Northern Contracting I*”).

*Northern Contracting, Inc. v. Illinois Department of Transportation*, 2005 U.S. Dist. LEXIS 19868 (Sept. 8, 2005) (“*Northern Contracting II*”).

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

*O'Donnell Construction Co., Inc. v. District of Columbia*, 963 F.2d 420 (D.C. Cir. 1992).

*Rothe Development Corporation v. U.S. Department of Defense*, 545 F.3d 1023 (Fed. Cir. 2008) (“*Rothe VI*”).

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

## Legal Standards for Government Affirmative Action Contracting Programs

*Thompson Building Wrecking Co., Inc. v. City of Augusta, Georgia*, 2007 U.S. Dist. Lexis 27127 (S.D. Ga. 2007).

*United States v. Paradise*, 480 U.S. 149 (1987).

*United States v. Virginia*, 518 U.S. 515 (1996).

*Virdi v. DeKalb County School District*, 2005 U.S. App. LEXIS 11203 (11<sup>th</sup> Cir. 2005).

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*Webster v. Fulton County, Georgia*, 51 F.Supp.2d 1354 (N.D. Ga. 1999).

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### **2. Statutes**

*Transportation Equity Act for the 21st Century* (“TEA-21”), Pub. L. No. 105-178 (b)(1), 112 Stat. 107, 113.

### **3. Regulations**

49 C.F.R. Part 26.

### **4. Reports**

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### III. Defining the Relevant Markets

#### A. Introduction

The U.S. Supreme Court in *Croson* indicated that the U.S. Congress' national findings of minority business discrimination in construction and related industries were not geographically specific enough, or "narrowly tailored" enough, standing alone, to support an MBE program in the City of Richmond. The first step in our evaluation of DBE availability and participation for the JMAA must therefore be to define the relevant market area for its contracting, procurement, and concessions activities. Markets have both a geographic dimension and a product, or industry, dimension, both of which are considered.<sup>194</sup> For this Study, we define JMAA's market area based on its own historical contracting and subcontracting records. We define the geographic market dimension by calculating from zip code data where the majority of JMAA's contractors and subcontractors are located.

Narrow tailoring also applies to product markets. The extent of disparity may differ from industry to industry just as it does among geographic locations.<sup>195</sup> Documenting the specific industries that comprise JMAA's contracting activities and the relative importance of each to contract and subcontract spending is important because it allows for: (1) implementation of more narrowly tailored availability estimation methods, (2) contract-level goal-setting, and (3) overall DBE availability estimates and annual goals that are a weighted average of underlying industry-level availability estimates, rather than a simple average. The weights used are the proportion of dollars awarded or paid within each industry and allow the overall availability measure to be influenced more heavily by availability in those industries where more contracting dollars are spent, and less heavily by availability in those industries where relatively fewer contracting dollars are spent.

We define the product market dimension by estimating which North American Industrial Classification System (NAICS) codes best describe each identifiable contractor, subcontractor, subconsultant, or supplier in those records.<sup>196</sup> In both cases, the definitions are weighted according to how many dollars were spent with firms from each zip code or NAICS code, respectively, so that locations and industries, respectively, receiving relatively more contracting dollars receive relatively more weight in the estimation of DBE availability. Once the geographic and industry parameters of JMAA's market area have been defined, we can restrict our subsequent analyses to business enterprises and other phenomena within this market area. Restricting our analyses in this manner narrowly tailors our findings to JMAA's specific market area and contracting circumstances. We conduct a related exercise in evaluating the appropriate market area for Airport Concessions.

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<sup>194</sup> See, for example, Areeda, P., L. Kaplow, and A. Edlin (2004).

<sup>195</sup> See Wainwright (2000), documenting that, in general, the similarities in the amount of discrimination present in different industries and geographic locations significantly outweigh the differences.

<sup>196</sup> Executive Office of the President, Office of Management and Budget (2007).

## **B. Preparing the Master Contract/Subcontract Database**

### **1. Contracts and Purchase Orders**

With assistance from JMAA, NERA collected prime contract and purchase order records for federally-assisted and locally-funded contracts and purchases, as well as airport concessions revenues, spanning FFY 2005 through FFY 2010.<sup>197</sup> These data were retrieved from several management information systems at JMAA including their Microsoft Dynamics SL (formerly Solomon IV) software system and their Airport Project Manager (APM) and Airport Business Manager (ABM) software systems from GCR Consulting, Inc.

For each prime contract and purchase order from the study period, we identified the prime contractor business name and address, contract description, contract or project number, start date, initial award amount, and total current paid amount. Additionally, we cross-referenced contractor business names and addresses with JMAA vendor lists and lists of certified D/M/WBE firms to obtain contractor race and gender information. Additionally, available data was obtained for associated subcontractors, subconsultants, suppliers, and truckers (collectively “subcontractors” or “subcontracts”), including name and address, work description, race and gender, award amount, and current paid amount.

Prime contract and purchasing data was classified into one of four major procurement categories: (1) Construction, (2) Architecture, Engineering, and other Construction-Related Services (AE-CRS), (3) Services, and (4) Commodities.

In this manner, a total of 4,198 prime contracts and purchases during the study period were identified from JMAA records. Collectively, these contracts had an award value of \$70.4 million and a paid to date value of \$61.6 million.

Not all of these contracts were likely to have subcontract opportunities, however. In particular, contracts for commodities, supplies, and equipment rarely have subcontract opportunities; nor do contracts valued at less than \$10,000.

We identified 204 contracts in the JMAA files valued at \$10,000 or more in the categories of Construction, AE-CRS, and Services. These 204 contracts, although less than 5 percent of all contracts in the study universe, collectively accounted for more than \$50 million in contract payments, or over 80 percent of the universe total. We conducted a careful review of the available subcontract data for these 204 records. As a result of this review, we determined that the available subcontract records were incomplete. In consultation with JMAA, NERA developed a plan to directly contact the prime contractors and vendors associated with these contracts in order to verify the existing data and supplement it with additional subcontract records where appropriate. As noted above, prime contracts and purchases valued at \$10,000 or greater in Construction, AE-CRS, and Services were included in this data collection effort. Prime contracts and purchases of Commodities, Supplies, and Equipment, or in amounts less than

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<sup>197</sup> That is, October 1, 2004 through September 30, 2011.

\$10,000 were not, due to the limited opportunities for subcontracting in these areas. These contracts do, however, remain in the study universe.

With JMAA’s support and assistance, of the 204 prime contracts for which we sought to collect additional subcontract information, we were ultimately able to obtain the requested data for over 97 percent of the contracts and 98 percent of the contract dollars. These percentages are sufficiently large to be representative for statistical purposes. In all, a total of 198 prime contracts and 215 associated subcontracts were collected from prime contractors, with a total paid value of \$50.0 million. Of this, Construction accounted for \$33.1 million, or 66.2 percent of the total; AE-CRS accounted for \$7.9 million, or 15.8 percent of the total; and Services accounted for \$9.0 million, or 18.0 percent of the total.

These 198 prime contracts and 215 associated subcontracts were then combined with the 3,994 prime contracts and purchases without significant subcontracting opportunities to form the Master Contract/Subcontract Database for the study. Together, as shown below in Tables 3.1A through 3.1C and Table 3.2, these prime contracts and subcontracts comprise the Master Contract/Subcontract Database compiled for this Study.

Table 3.1A-3.1C show the total number of prime contracts, subcontracts, dollars awarded, and dollars paid, by major procurement category. Table 3.1A shows all contracts, Table 3.1B shows just federally-assisted contracts, and Table 3.1C shows just locally-funded contracts.

**Table 3.1A. Summary of Master Contract/Subcontract Database: Prime Contracts and Subcontracts by Procurement Category, FFY 2005-2010, All Funding Sources**

CONTRACT CATEGORY	NUMBER OF CONTRACTS	DOLLARS AWARDED (\$)	DOLLARS PAID (\$)
<i>CONSTRUCTION</i>		41,572,938	33,692,218
<i>Prime Contracts</i>	361	24,515,081	17,390,097
<i>Subcontracts</i>	113	17,057,857	16,302,121
<i>AE-CRS</i>		8,639,828	7,985,799
<i>Prime Contracts</i>	65	5,678,017	5,485,587
<i>Subcontracts</i>	64	2,961,811	2,500,213
<i>SERVICES</i>		10,616,202	10,363,231
<i>Prime Contracts</i>	1,216	8,421,501	8,315,310
<i>Subcontracts</i>	38	2,194,701	2,047,921
<i>COMMODITIES</i>		9,458,557	9,415,200
<i>Prime Contracts</i>	2,550	9,458,557	9,415,200
<i>Subcontracts</i>	0	0	0
<i>GRAND TOTAL</i>		70,287,524	61,456,447
<i>Prime Contracts</i>	4,192	48,073,155	40,606,193
<i>Subcontracts</i>	215	22,214,369	20,850,254

Source: NERA calculations from Master Contract/Subcontract Database. Note: Prime Contract dollar amounts are net of subcontract amounts.

**Table 3.1B. Summary of Master Contract/Subcontract Database: Prime Contracts and Subcontracts by Procurement Category, FFY 2005-2010, Federally-Assisted Contracts Only**

<b>CONTRACT CATEGORY</b>	<b>NUMBER OF CONTRACTS</b>	<b>DOLLARS AWARDED (\$)</b>	<b>DOLLARS PAID (\$)</b>
<i>CONSTRUCTION</i>		19,304,890	11,333,459
<i>Prime Contracts</i>	28	12,732,344	5,479,954
<i>Subcontracts</i>	16	6,572,546	5,853,505
<i>AE-CRS</i>		6,774,984	6,330,549
<i>Prime Contracts</i>	16	4,097,759	4,106,773
<i>Subcontracts</i>	31	2,677,226	2,223,776
<i>SERVICES</i>		1,164,186	804,227
<i>Prime Contracts</i>	96	867,045	653,401
<i>Subcontracts</i>	6	297,141	150,827
<i>COMMODITIES</i>		2,824,603	2,776,315
<i>Prime Contracts</i>	20	2,824,603	2,776,315
<i>Subcontracts</i>	0	0	0
<i>GRAND TOTAL</i>		30,068,663	21,244,550
<i>Prime Contracts</i>	143	20,521,750	13,016,442
<i>Subcontracts</i>	65	9,546,913	8,228,108

Source and Notes: See Table 3.1A.

**Table 3.1C. Summary of Master Contract/Subcontract Database: Prime Contracts and Subcontracts by Procurement Category, FFY 2005-2010, Locally-Funded Contracts Only**

<b>CONTRACT CATEGORY</b>	<b>NUMBER OF CONTRACTS</b>	<b>DOLLARS AWARDED (\$)</b>	<b>DOLLARS PAID (\$)</b>
<i>CONSTRUCTION</i>		22,268,048	22,358,759
<i>Prime Contracts</i>	85	11,782,736	11,910,144
<i>Subcontracts</i>	49	10,485,311	10,448,615
<i>AE-CRS</i>		1,864,844	1,655,250
<i>Prime Contracts</i>	49	1,580,258	1,378,813
<i>Subcontracts</i>	33	284,585	276,437
<i>SERVICES</i>		9,452,016	9,559,003
<i>Prime Contracts</i>	1120	7,554,456	7,661,909
<i>Subcontracts</i>	32	1,897,560	1,897,094
<i>COMMODITIES</i>		6,633,954	6,638,885
<i>Prime Contracts</i>	2530	6,633,954	6,638,885
<i>Subcontracts</i>	0	0	0
<i>GRAND TOTAL</i>		40,218,862	40,211,897
<i>Prime Contracts</i>	4049	27,551,405	27,589,751
<i>Subcontracts</i>	150	12,667,457	12,622,146

Source and Notes: See Table 3.1A.

Table 3.2 shows the total number of prime contracts awarded during each year of the study period and total dollar payments associated with those contracts, by major procurement category.

**Table 3.2. Summary of Master Contract/Subcontract Database: Prime Contracts by FFY, All Funding Sources**

<b>PROCUREMENT CATEGORY &amp; FFY</b>	<b>NUMBER OF PRIME CONTRACTS</b>	<b>DOLLARS AWARDED (\$)</b>	<b>DOLLARS PAID (\$)</b>
<i>CONSTRUCTION</i>			
2005	37	15,384,451	15,384,451
2006	60	1,563,028	1,635,776
2007	53	1,597,678	1,597,678
2008	95	1,170,938	1,205,372
2009	39	719,553	734,094
2010	43	19,963,700	11,961,258
<b>TOTAL</b>	<b>361</b>	<b>41,572,938</b>	<b>33,692,218</b>
<i>AE-CRS</i>			
2005	8	353,437	312,547
2006	12	1,543,142	1,523,077
2007	8	106,960	106,960
2008	11	1,451,905	1,315,708
2009	18	3,464,128	3,332,724
2010	6	1,432,440	1,190,950
<b>TOTAL</b>	<b>65</b>	<b>8,624,828</b>	<b>7,971,149</b>
<i>SERVICES</i>			
2005	217	1,183,673	1,207,327
2006	284	5,257,017	5,251,864
2007	194	986,359	890,113
2008	193	1,111,929	1,200,486
2009	157	872,376	739,105
2010	113	1,069,776	584,844
<b>TOTAL</b>	<b>1,216</b>	<b>10,766,144</b>	<b>10,517,902</b>

**Table 3.2. Summary of Master Contract/Subcontract Database: Prime Contracts by FFY, All Funding Sources (cont'd)**

<b>PROCUREMENT CATEGORY &amp; FFY</b>	<b>NUMBER OF PRIME CONTRACTS</b>	<b>DOLLARS AWARDED (\$)</b>	<b>DOLLARS PAID (\$)</b>
<i>COMMODITIES</i>			
2005	310	898,904	894,651
2006	444	1,190,890	1,202,038
2007	401	2,294,587	2,294,587
2008	385	901,576	891,521
2009	336	2,909,930	2,871,697
2010	358	532,688	530,724
<b>TOTAL</b>	<b>2,550</b>	<b>9,458,557</b>	<b>9,415,200</b>
<i>GRAND TOTAL</i>			
2005	572	17,820,465	17,798,976
2006	800	9,554,077	9,612,755
2007	656	4,985,584	4,889,338
2008	684	4,636,348	4,613,087
2009	550	7,965,988	7,677,619
2010	520	22,998,605	14,267,776
<b>TOTAL</b>	<b>4,192</b>	<b>70,422,467</b>	<b>61,596,468</b>

Source: NERA calculations from Master Contract/Subcontract Database.

## 2. Airport Concessions

Unlike contracting for Construction, AE-CRS, Services, and Commodities contracts for Airport Concessions generate revenue for JMAA. Rather than paying a contractor or vendor directly for goods or services supplied, the Airport grants each concessionaire the right to conduct business at Jackson-Evers International Airport for a set period of time in exchange for an agreed-upon percentage of the revenues generated by each concessionaire. For this reason, in the concession context, the type of data required to determine product markets, geographic markets, and in later chapters, availability, utilization, and disparity, is different from that required for other types of JMAA contracts and purchases.

We worked with JMAA to obtain gross reportable revenue figures for each concessions category from FFY 2006 through 2010.<sup>198</sup> The Airport Concessions revenue data we obtained contained the type of concession category being provided, the business name of the concessionaire, and the reportable revenues by month and year for each business in each concession category. We

<sup>198</sup> Data for FFY 2005 was not available.

combined this information with research on existing concessions contracts at the Airport to determine the D/M/WBE status of each concessionaire, and the race and sex of ownership.

JMAA reports Airport Concessions gross revenues in six different categories: (1) Rental Cars, (2) Food/Beverage, (3) News/Gifts, (4) Advertising, (5) Banking (ATMs), and (6) Coin-operated luggage cart rentals.<sup>199</sup>

Ultimately, we obtained data on Airport Concessions revenues over this five-year period totaling approximately \$134.5 million. As shown below in Tables 3.3 and 3.4, these data comprise the Master Concessions Database compiled for this Study.

Table 3.3 shows total revenues over the five-year period by type of concession.

**Table 3.3. Summary of Master Concessions Database: Revenues by Concessions Category, FFY 2006-2010**

CONCESSIONS CATEGORY	GROSS REVENUES
RENTAL CAR AGENCIES	\$116,516,256
FOOD/BEVERAGE CONCESSIONS	\$9,493,053
NEWS/GIFTS CONCESSIONS	\$7,657,088
ADVERTISING	\$736,585
BANKING (ATMs)	\$38,641
COIN-OPERATED LUGGAGE CARTS	\$85,907
GRAND TOTAL	\$134,527,530

Source: NERA calculations from Master Concessions Database.

<sup>199</sup> Taxi and limousine services are licensed through the City of Jackson. They are permitted to operate at the Airport but do not generate revenues for JMAA. Parking and Airport Shuttle Services are provided through a standard contract arrangement, which is included in the Master Contract/Subcontract Database described above.

Table 3.4 shows annual revenues for each FFY from 2006 through 2010 for each type of concession.

**Table 3.4. Summary of Master Concessions Database: Revenues by Category and FFY**

<b>CONCESSIONS CATEGORY &amp; FFY</b>	<b>GROSS REVENUES</b>
<i>RENTAL CAR AGENCIES</i>	
2006	\$30,170,109
2007	\$22,800,435
2008	\$22,243,412
2009	\$20,231,538
2010	\$21,070,763
TOTAL	\$116,516,256
<i>FOOD/BEVERAGE</i>	
2006	\$2,116,977
2007	\$2,048,798
2008	\$1,952,289
2009	\$1,708,569
2010	\$1,666,420
TOTAL	\$9,493,053
<i>NEWS/GIFTS</i>	
2006	\$1,395,242
2007	\$1,515,147
2008	\$1,578,780
2009	\$1,572,844
2010	\$1,595,075
TOTAL	\$7,657,088
<i>ADVERTISING</i>	
2006	\$114,556
2007	\$171,063
2008	\$164,574
2009	\$157,516
2010	\$128,877
2006	\$114,556
TOTAL	\$736,585

Table 3.4. Summary of Master Concessions Database: Revenues by Category and FFY (cont'd)

CONCESSIONS CATEGORY & FFY	GROSS REVENUES
<i>BANKING (ATMs)</i>	
2006	\$7,342
2007	\$9,539
2008	\$8,169
2009	\$5,496
2010	\$8,095
2006	\$7,342
TOTAL	\$38,641
<i>LUGGAGE CARTS</i>	
2006	\$26,476
2007	\$20,383
2008	\$17,247
2009	\$11,964
2010	\$9,837
2006	\$26,476
TOTAL	\$85,907
<i>GRAND TOTAL</i>	
2006	\$1,279,375
2007	\$1,009,254
2008	\$993,266
2009	\$1,077,816
2010	\$817,125
2006	\$790,446
TOTAL	\$134,527,530

Source: NERA calculations from Master Concessions Database.

### C. Geographic Market Definition for Contracting and Procurement

To determine the geographic dimension of JMAA's contracting and procurement markets, we used the Master Contract/Subcontract Database, as described in the previous section, to obtain the zip codes and thereby the county and state for each contractor and subcontractor establishment identified in the database. Using this location information, we then calculated the

percentage of JMAA contract and subcontract dollars awarded to establishments by state and county during the study period.

As discussed above, the geographic market area is defined as that region which accounts for approximately 75 percent of overall contracting and procurement spending by a given state or local government. Contractors located in the State of Mississippi account for the large majority of contracting and procurement expenditures by JMAA during the study period.

As shown in Table 3.5, the overall share of payments made to establishments located in Mississippi is 74.3 percent. The share is highest in Construction (79.4 percent) and lowest in Commodities (65.9 percent). Outside of Mississippi, there were very few instances where there was activity with more than one contractor or vendor in a given state or county. In AE-CRS, there were contracts with two different firms in Hennepin County, Minnesota (Minneapolis-St. Paul) and two different firms in Harris County, Texas (Houston). In Commodities, there were contracts with two different firms in Shelby County, Alabama (Birmingham), Orange County, Florida (Orlando), Cook County, Illinois (Chicago), and Cass County, North Dakota (Fargo).

For purposes of this Study, therefore, we define the primary geographic market area to be the State of Mississippi. Within Mississippi, JMAA expends substantial funds within the Jackson, MS Metropolitan Statistical Area, as can be seen from the bottom panel of Table 3.5.

**Table 3.5. Distribution of Contracting Dollars by Geographic Location**

<b>Location</b>	<b>Construction (%)</b>	<b>AE-CRS (%)</b>	<b>Services (%)</b>	<b>Commodities (%)</b>	<b>Total (%)</b>
<i>Dollars Awarded</i>					
Inside JMAA Market Area	65.6	70.3	65.3	65.9	66.2
Outside JMAA Market Area	34.4	29.7	34.7	34.1	33.8
<i>Dollars Paid</i>					
Inside JMAA Market Area	79.4	70.1	68.8	65.8	74.3
Outside JMAA Market Area	20.6	29.9	31.2	34.2	25.7
<i>Dollars Awarded</i>					
Inside Jackson MSA	60.8	59.2	63.5	35.5	57.6
Outside Jackson MSA	39.2	40.8	36.5	64.5	42.4
<i>Dollars Paid</i>					
Inside Jackson MSA	75.6	58.6	67.0	35.2	65.7
Outside Jackson MSA	24.4	41.4	33.0	64.8	34.3

Source: NERA calculations from Master Contract/Subcontract Database.

**D. Product Market Definition for Contracting and Procurement**

Using the major procurement categories for each prime contract and the primary NAICS codes assigned by NERA to each prime contractor and subcontractor in the Master Contract/Subcontract Database, we identified the most important Industry Groups within each contracting and procurement category, as measured by total dollars expended. The relevant NAICS codes and their associated dollar weights appear below in Tables 3.6 through 3.9 for Construction, AE-CRS, Services, and Commodities, respectively.

Each Industry Group (four-digit NAICS) identified in Tables 3.6 through 3.9 consists of several more detailed Industries (five-digit and six-digit NAICS). Overall, JMAA contracting expenditures occur in 164 NAICS Industry Groups and 300 NAICS Industries. In Construction, JMAA contract spending occurs across 39 NAICS Industry Groups and 61 NAICS Industries. In AE-CRS, spending occurs across 8 NAICS Industry Groups and 17 NAICS Industries. In Services, spending occurs across 84 NAICS Industry Groups and 122 NAICS Industries. In Commodities, spending occurs across 124 NAICS Industry Groups and 202 NAICS Industries.

Although numerous Industry Groups and Industries play a role in JMAA’s contracting activities, it is clear from Tables 3.6 through 3.9 that actual contracting and subcontracting opportunities are not distributed evenly among them. The distribution of contract expenditures is, in fact, highly skewed.

In Construction, for example, we see from Table 3.6 that just two Industry Groups alone (NAICS 2362 and 2373) account for more than half of all contract spending, four Groups account for 75 percent, and seven Groups account for more than 90 percent, with the remaining 10 percent distributed among 32 additional Industry Groups.

**Table 3.6. Distribution of Contract and Subcontract Dollars Paid by Industry Group: Construction**

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
2362	Nonresidential Building Construction	38.48	38.48
2373	Highway, Street, and Bridge Construction	17.44	55.92
2389	Other Specialty Trade Contractors	10.42	66.34
3339	Other General Purpose Machinery Manufacturing	8.96	75.30
2381	Foundation, Structure, and Building Exterior Contractors	6.16	81.46
2382	Building Equipment Contractors	5.74	87.20
4236	Electrical and Electronic Goods Merchant Wholesalers	4.53	91.73
2371	Utility System Construction	3.61	95.34
5617	Services to Buildings and Dwellings	0.68	96.02

## Defining the Relevant Markets

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
2383	Building Finishing Contractors	0.54	96.55
3351	Electric Lighting Equipment Manufacturing	0.52	97.07
5416	Management, Scientific, and Technical Consulting Services	0.51	97.58
4233	Lumber and Other Construction Materials Merchant Wholesalers	0.50	98.08
3273	Cement and Concrete Product Manufacturing	0.34	98.42
4841	General Freight Trucking	0.27	98.69
3324	Boiler, Tank, and Shipping Container Manufacturing	0.22	98.91
3399	Other Miscellaneous Manufacturing	0.17	99.08
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	0.13	99.21
5413	Architectural, Engineering, and Related Services	0.11	99.32
2123	Nonmetallic Mineral Mining and Quarrying	0.11	99.43
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	0.10	99.53
	Balance of industries (18 industry groups)	0.47	100.00

Source: NERA calculations from Master Contract/Subcontract Database.

In AE-CRS (Table 3.7), we see an even more concentrated pattern—one Industry Group (NAICS 5413) alone accounts for 88 percent of all contract spending, with the balance distributed among seven additional groups.

**Table 3.7. Distribution of Contract and Subcontract Dollars Paid by Industry Group: AE-CRS**

NAICS Sub-sector	NAICS Description	Percentage	Cumulative Percentage
5413	Architectural, Engineering, and Related Services	88.28	88.28
5416	Management, Scientific, and Technical Consulting Services	7.89	96.17
5418	Advertising, Public Relations, and Related Services	2.35	98.51
5629	Remediation and Other Waste Management Services	0.66	99.17
7121	Museums, Historical Sites, and Similar Institutions	0.52	99.69
	Balance of industries (3 industry groups)	0.31	100.00

Source: See Table 3.6.

In Services (Table 3.8), two Groups account for almost half of all contract spending, six Groups account for 75 percent of spending, and 18 Groups together account for 90 percent of spending, and the remaining 10 percent is distributed among 70 additional Industry Groups.

**Table 3.8. Distribution of Contract and Subcontract Dollars Paid by Industry Group: Services**

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
8129	Other Personal Services (Parking)	25.26	25.26
5416	Management, Scientific, and Technical Consulting Services	21.40	46.66
5242	Agencies, Brokerages, and Other Insurance Related Activities	12.10	58.77
5411	Legal Services	9.23	68.00
5415	Computer Systems Design and Related Services	3.79	71.79
2389	Other Specialty Trade Contractors	3.00	74.79
7111	Performing Arts Companies	2.45	77.24
5419	Other Professional, Scientific, and Technical Services	1.86	79.10

## Defining the Relevant Markets

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
8139	Business, Professional, Labor, Political, and Similar Organizations	1.69	80.80
2382	Building Equipment Contractors	1.29	82.08
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	1.27	83.35
5414	Specialized Design Services	1.21	84.56
5611	Office Administrative Services	1.18	85.74
5112	Software Publishers	1.15	86.89
4442	Lawn and Garden Equipment and Supplies Stores	1.06	87.95
5312	Offices of Real Estate Agents and Brokers	0.99	88.94
5617	Services to Buildings and Dwellings	0.80	89.75
5111	Newspaper, Periodical, Book, and Directory Publishers	0.71	90.45
4413	Automotive Parts, Accessories, and Tire Stores	0.65	91.10
5417	Scientific Research and Development Services	0.64	91.75
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	0.55	92.29
4431	Electronics and Appliance Stores	0.52	92.82
5616	Investigation and Security Services	0.46	93.27
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	0.44	93.72
5171	Wired Telecommunications Carriers	0.39	94.11
5413	Architectural, Engineering, and Related Services	0.38	94.49
5182	Data Processing, Hosting, and Related Services	0.34	94.83
3339	Other General Purpose Machinery Manufacturing	0.34	95.17
3333	Commercial and Service Industry Machinery Manufacturing	0.33	95.50
8112	Electronic and Precision Equipment Repair and Maintenance	0.31	95.81
3231	Printing and Related Support Activities	0.30	96.11
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	0.29	96.40
6116	Other Schools and Instruction	0.25	96.65
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	0.24	96.89
4881	Support Activities for Air Transportation	0.22	97.11
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	0.21	97.32
2381	Foundation, Structure, and Building Exterior Contractors	0.21	97.53

## Defining the Relevant Markets

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
5418	Advertising, Public Relations, and Related Services	0.19	97.71
8123	Drycleaning and Laundry Services	0.19	97.90
5172	Wireless Telecommunications Carriers (except Satellite)	0.16	98.06
5619	Other Support Services	0.15	98.21
4441	Building Material and Supplies Dealers	0.13	98.34
5313	Activities Related to Real Estate	0.12	98.47
5612	Facilities Support Services	0.12	98.59
5121	Motion Picture and Video Industries	0.11	98.70
5613	Employment Services	0.09	98.80
4884	Support Activities for Road Transportation	0.09	98.89
4233	Lumber and Other Construction Materials Merchant Wholesalers	0.09	98.98
3343	Audio and Video Equipment Manufacturing	0.09	99.08
2362	Nonresidential Building Construction	0.09	99.17
7115	Independent Artists, Writers, and Performers	0.09	99.25
7211	Traveler Accommodation	0.08	99.34
5311	Lessors of Real Estate	0.08	99.42
4236	Electrical and Electronic Goods Merchant Wholesalers	0.06	99.48
7139	Other Amusement and Recreation Industries	0.06	99.54
	Balance of industries (33 industry groups)	0.46	100.00

Source: See Table 3.6.

In Commodities (Table 3.9), three Groups account for half of all spending, and fourteen Groups together account for 75 percent of spending, and 34 Groups together account for 90 percent of spending, and the remaining 10 percent is distributed among 90 additional Industry Groups.

**Table 3.9. Distribution of Contract and Subcontract Dollars Paid by Industry Group: Commodities**

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	27.33	27.33
3342	Communications Equipment Manufacturing	17.46	44.79
3362	Motor Vehicle Body and Trailer Manufacturing	4.99	49.78
3339	Other General Purpose Machinery Manufacturing	4.89	54.68
4247	Petroleum and Petroleum Products Merchant Wholesalers	4.76	59.44
4411	Automobile Dealers	2.39	61.83
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	2.17	64.01
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	1.92	65.92
3152	Cut and Sew Apparel Manufacturing	1.83	67.75
5415	Computer Systems Design and Related Services	1.52	69.27
5418	Advertising, Public Relations, and Related Services	1.41	70.68
4236	Electrical and Electronic Goods Merchant Wholesalers	1.40	72.07
7223	Special Food Services	1.29	73.36
4239	Miscellaneous Durable Goods Merchant Wholesalers	1.27	74.63
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	1.15	75.78
4531	Florists	1.07	76.85
5416	Management, Scientific, and Technical Consulting Services	1.05	77.90
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	1.04	78.94
4413	Automotive Parts, Accessories, and Tire Stores	0.97	79.91
5172	Wireless Telecommunications Carriers (except Satellite)	0.93	80.83
3231	Printing and Related Support Activities	0.88	81.71
5182	Data Processing, Hosting, and Related Services	0.88	82.59
3351	Electric Lighting Equipment Manufacturing	0.84	83.43
4881	Support Activities for Air Transportation	0.82	84.24
5111	Newspaper, Periodical, Book, and Directory Publishers	0.72	84.96

## Defining the Relevant Markets

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
5112	Software Publishers	0.72	85.68
3399	Other Miscellaneous Manufacturing	0.61	86.29
3323	Architectural and Structural Metals Manufacturing	0.59	86.87
5616	Investigation and Security Services	0.58	87.46
4412	Other Motor Vehicle Dealers	0.54	88.00
4421	Furniture Stores	0.52	88.52
3333	Commercial and Service Industry Machinery Manufacturing	0.51	89.03
7221	Full-Service Restaurants	0.47	89.50
4532	Office Supplies, Stationery, and Gift Stores	0.42	89.92
3391	Medical Equipment and Supplies Manufacturing	0.41	90.33
4233	Lumber and Other Construction Materials Merchant Wholesalers	0.41	90.74
8123	Drycleaning and Laundry Services	0.39	91.13
3261	Plastics Product Manufacturing	0.37	91.50
5617	Services to Buildings and Dwellings	0.37	91.88
3262	Rubber Product Manufacturing	0.37	92.25
3331	Agriculture, Construction, and Mining Machinery Manufacturing	0.37	92.62
4244	Grocery and Related Product Merchant Wholesalers	0.35	92.97
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	0.35	93.32
4481	Clothing Stores	0.34	93.65
7222	Limited-Service Eating Places	0.32	93.98
3341	Computer and Peripheral Equipment Manufacturing	0.31	94.29
4431	Electronics and Appliance Stores	0.31	94.60
7211	Traveler Accommodation	0.27	94.87
4539	Other Miscellaneous Store Retailers	0.26	95.13
7139	Other Amusement and Recreation Industries	0.24	95.37
2382	Building Equipment Contractors	0.22	95.59
5321	Automotive Equipment Rental and Leasing	0.21	95.80
3119	Other Food Manufacturing	0.21	96.01
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	0.19	96.20
4441	Building Material and Supplies Dealers	0.18	96.38
3149	Other Textile Product Mills	0.18	96.56

## Defining the Relevant Markets

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
5322	Consumer Goods Rental	0.17	96.73
5621	Waste Collection	0.16	96.89
5419	Other Professional, Scientific, and Technical Services	0.16	97.04
4511	Sporting Goods, Hobby, and Musical Instrument Stores	0.15	97.19
5413	Architectural, Engineering, and Related Services	0.15	97.34
3364	Aerospace Product and Parts Manufacturing	0.14	97.48
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	0.13	97.61
5171	Wired Telecommunications Carriers	0.12	97.73
3118	Bakeries and Tortilla Manufacturing	0.11	97.85
5331	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	0.11	97.96
8129	Other Personal Services	0.11	98.06
3255	Paint, Coating, and Adhesive Manufacturing	0.10	98.16
6219	Other Ambulatory Health Care Services	0.10	98.26
4543	Direct Selling Establishments	0.09	98.35
4241	Paper and Paper Product Merchant Wholesalers	0.09	98.44
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	0.09	98.53
3369	Other Transportation Equipment Manufacturing	0.09	98.62
4232	Furniture and Home Furnishing Merchant Wholesalers	0.09	98.70
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	0.08	98.79
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	0.08	98.87
8111	Automotive Repair and Maintenance	0.08	98.95
5619	Other Support Services	0.07	99.02
5629	Remediation and Other Waste Management Services	0.07	99.09
4533	Used Merchandise Stores	0.07	99.16
4841	General Freight Trucking	0.07	99.23
8134	Civic and Social Organizations	0.05	99.28
3329	Other Fabricated Metal Product Manufacturing	0.05	99.33
3222	Converted Paper Product Manufacturing	0.04	99.37
4521	Department Stores	0.04	99.41
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	0.04	99.45
3372	Office Furniture (including Fixtures) Manufacturing	0.04	99.49

NAICS Industry Group	NAICS Description	Percentage	Cumulative Percentage
7121	Museums, Historical Sites, and Similar Institutions	0.04	99.53
	Balance of industries (36 industry groups)	0.47	100.00

Source: See Table 3.6.

The resulting percentage weights from these NAICS Industries are used below in Chapter IV to calculate average D/M/WBE availability figures for Construction, AE-CRS, Services, and Commodities.<sup>200</sup>

Now that the geographic and industry parameters of JMAA’s contracting market area has been established, we will restrict our subsequent analyses, in Chapter IV and beyond, to business enterprises and other phenomena within this market area so as to narrowly tailor our findings to JMAA’s specific contracting circumstances.

**E. Concessions: Product and Geographic Markets**

The product market for Concessions is determined in a manner analogous to that for Contracting and Procurement—a primary NAICS code is assigned to each concessionaire and the distribution of Concession revenues is then tabulated by NAICS code.

As with contracting and procurement, revenues are not distributed evenly across the various NAICS codes. For example, we see from Table 3.10 that one Industry alone (NAICS 532111) accounts for over 85 percent of all revenues. Altogether in Concessions, revenues are spread across seven NAICS Industry Groups and seven NAICS Industries.<sup>201</sup>

**Table 3.10. Distribution of Concessions Revenues by Industry Group**

NAICS Industry	NAICS Description	Percentage	Cumulative Percentage
532111	Automotive Equipment Rental and Leasing	86.61	86.61
722211	Limited-Service Eating Places	5.53	92.15
451212	Book, Periodical, and Music Stores	4.47	96.61
722110	Full-Service Restaurants	1.52	98.14
453220	Office Supplies, Stationery, and Gift Stores	1.22	99.36

<sup>200</sup> After re-normalizing the percentage weights to sum to 100.

<sup>201</sup> In JMAA’s case, there is only one Industry (six-digit NAICS) present within each Industry Group (four-digit NAICS). We therefore report six-digit NAICS in Table 3.10.

NAICS Industry	NAICS Description	Percentage	Cumulative Percentage
541850	Advertising, Public Relations, and Related Services	0.55	99.91
812990	Other Personal Services	0.06	99.97
522110	Depository Credit Intermediation	0.03	100.00

Source: NERA calculations from Master Concessions Database.

Certain Concessions categories, such as car rental services, are dominated by a small number of large national chains with local establishments. Similarly, much of the Food/Beverage and News/Gifts Concession market is dominated by a small number of nationwide “master concessionaires,” such as HMS Host and CA One Services. These firms enjoy exclusive co-branding agreements with well known national or regional companies whose goods and services are in high demand from the traveling public.

In Car Rentals, opportunities for participation by minority-owned and women-owned firms have been limited. One reason for this is that most of the major car rental companies do not offer franchising opportunities within the United States. There is therefore scant opportunity for minority or female ownership of car rental establishments. Only one of the major national chains, The Dollar Thrift Group, offers franchising opportunities within the US. Two other smaller chains, Payless Car Rental and Advantage Car Rental, also offer domestic franchising. One potential avenue for future D/M/WBE participation in the Car Rental field, therefore, is through franchising. Currently, however, Dollar Thrift Group is not represented at the Airport.

Another potential avenue for D/M/WBE participation in the Car Rental field is similar to that for all other contracting and procurement—through subcontracting and supplier arrangements. Car Rental establishments purchase a wide variety of goods in support of their day-to-day operations, including vehicles, petroleum products, auto parts, tires, uniforms, and office supplies. They purchase services as well, including auto repair, towing, building maintenance and pest control, advertising, IT, and a variety of construction services, such as plumbing and electrical contracting, in order to build and/or maintain their facilities. However, many, if not most, of these goods and services are purchased through national or regional agreements arranged by the parent company.<sup>202</sup> Consequently, future D/M/WBE participation in the Car Rental field may best be achieved if USDOT can facilitate DBE participation at the national level with the major Car Rental chains, similar to the current arrangements with Transit Vehicle Manufacturers.<sup>203</sup>

Outside of the Car Rental concessions, opportunities for participation by D/M/WBEs in JMAA concessions have occurred through the establishment of joint venture agreements between D/M/WBEs and one or more master concessionaires, facilitated by the Airport. One such agreement is currently in place with the Hudson Group for the news and gift concession. A

<sup>202</sup> An examination of national and local expenditures made on behalf of the local car rental establishments at the Airport was beyond the scope of the present study.

<sup>203</sup> See 49 CFR §26.49.

second agreement was in place with Central Parking System of Mississippi for the parking concession.<sup>204</sup>

Therefore, in some important ways the market for certain key Concessions is national in scope. Determining nationwide D/M/WBE availability under a methodology comparable to that used for contracting and procurement, however, would be prohibitively costly for JMAA to undertake and is beyond the scope of our Study.

On the other hand, as shown above in Table 3.5, JMAA draws on the State of Mississippi market area for approximately 75 percent of its overall contracting and procurement expenditures. Given the prohibitive expense of calculating D/M/WBE availability nationwide for dozens of detailed NAICS codes, it is reasonable to use the JMAA market area as a proxy geographic market for availability levels, so that JMAA may set ACDBE contract goals that are narrowly tailored to the specifics of its needs in the area of Concessions.

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<sup>204</sup> On or about April 2012, Central Parking System of Mississippi was replaced in this agreement by Republic Parking System, Inc., with the DBE joint venture participant remaining in place. As noted above, the parking joint venture is included in the Master Contract/Subcontract Database rather than in the Master Concessions Database.

## IV. D/M/WBE Availability in JMAA's Market Area

### A. Introduction

Estimates of DBE availability are an important element of JMAA's disparity study since they provide benchmarks for assessing the effectiveness of JMAA's efforts to encourage DBE participation in public contracting and procurement. Furthermore, they provide a means by which to establish goals for DBE participation that are tailored to JMAA's relevant market area.

For this study, NERA used M/WBE availability as a proxy for DBE availability. The M/WBE and DBE populations have a high degree of correlation and overlap. There are two differences worth noting, however. First, to be certified as a DBE a business owner's personal net worth cannot exceed \$1,320,000, exclusive of equity in the owner's primary residence and in the business seeking certification.<sup>205</sup> Hence, not all M/WBEs can become DBEs. In practice, however, very few households—especially minority households—have net worth levels in excess of \$1,320,000. According to the Federal Reserve's *2003 Survey of Small Business Finances* (the most recent available), about 1.4 percent of nonminority female-owned small businesses, and 4.2 percent of minority-owned small businesses have business equity in excess of \$1,320,000.<sup>206</sup> Census Bureau data from 2004 (the most recent available) show that the median net worth of African American and Hispanic households is much less than the median for nonminority households. Very few African American or Hispanic households have net worth levels above even \$500,000. Only 3.2 percent of African American households and 4.0 percent of Hispanic households have a net worth greater than \$500,000—compared to a figure of 14.3 percent for nonminority households. Overall, the median net worth for nonminority households is over 11 times higher than that of African American households and over 7 times higher than that of Hispanic households.<sup>207</sup> More recent data also document that the net worth of nonminority households is much greater than that of African American or Hispanic households. Furthermore, the recent recession has reduced minority household wealth disproportionately more than nonminority household wealth. According to a 2011 Pew Research Center Study, using data from the Census Bureau's *Survey of Income and Program Participation*, the median net worth of nonminority households fell 16.2 percent between 2005 and 2009. For African American households, the decline was 53.2 percent, while for Hispanic households the decline was 65.5 percent.<sup>208</sup>

Second, it is possible for businesses owned by nonminority males to become certified DBEs if they can establish that they are socially and economically disadvantaged under the regulations.<sup>209</sup> Hence, not all DBEs are necessarily M/WBEs. On balance, since so few M/WBEs have net

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<sup>205</sup> 49 C.F.R. § 26.67.

<sup>206</sup> Calculations by NERA from 2003 SSBF data.

<sup>207</sup> See U.S. Census Bureau (2004a) and (2004b).

<sup>208</sup> See Taylor, Paul, Rakesh Kochhar, Richard Fry, Gabriel Velasco, and Seth Motel (2011), "Twenty-to-One: Wealth Gaps Rise to Record Highs Between Whites, Blacks and Hispanics," Washington, DC: Pew Research Center.

<sup>209</sup> 49 C.F.R. § 26.67 and Appendix E.

worth levels in excess of \$1,320,000 and since a significant number of businesses owned by socially and economically disadvantaged nonminority males could potentially seek DBE certification (e.g., disabled persons, nonminority residents of Labor Surplus Areas, nonminority residents of HUB Zones), NERA's method may understate DBE availability to a small degree.<sup>210</sup>

NERA's approach to availability measurement reflects USDOT's own compliance advice. According to the USDOT's guidance, "... if you have data about the number of minority and women-owned businesses (regardless of whether they are certified as DBEs) in your market area, or DBEs in your market area that are in other recipients' Directories but not yours, you can supplement your Directory data with this information. *Doing so may provide a more complete picture of the availability of firms to work on your contracts than the data in your Directory alone.*"<sup>211</sup>

Many approaches to estimating availability suffer from internal inconsistency since the data employed to construct the availability numerator (i.e., the total number of DBE establishments in the market area) are measured differently than the data employed to construct the availability denominator (i.e., the total number of establishments in the market area). For example, the numerator might be drawn from an agency's internal list of certified DBEs while the denominator might be drawn from Census data. Since the methods used to identify and certify firms as DBEs are different from the methods used by the Census Bureau to count business establishments, such approaches inevitably compare "apples to oranges."

In this Study, we employ a method for measuring availability that ensures an "apples to apples" comparison between the availability numerator and denominator. This "Custom Census" method was pioneered by NERA and has been favorably reviewed by each court that has examined it to date. The Tenth Circuit found the custom census approach to be "a more sophisticated method to calculate availability than the earlier studies."<sup>212</sup> Likewise, this method was successful in the defense of the DBE programs for Minnesota DOT<sup>213</sup> and Illinois DOT,<sup>214</sup> as well as the M/WBE construction program for the City of Chicago.<sup>215</sup>

In addition to its favorable reception in the courts, when properly executed, the Custom Census method is superior to other approaches for at least three reasons. First, it provides an internally consistent and rigorous "apples to apples" comparison between establishments in the availability numerator and those in the denominator. Second, it comports with the remedial nature of most

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<sup>210</sup> For ease of exposition, we shall use the term DBE throughout the remainder of the report.

<sup>211</sup> See INTERNET: <http://www.osdbu.dot.gov/dbeprogram/hottips.cfm> (emphasis added). This information was released as official guidance by USDOT at 49 C.F.R. §26.9. See also Wainwright, J. and C. Holt (2010), pp. 33-44.

<sup>212</sup> *Concrete Works of Colorado, Inc. v. City and County of Denver*, 321 F.3d 950, 966 (10<sup>th</sup> Cir. 2003) ("*Concrete Works IV*"), cert. denied, 540 U.S. 1027 (2003).

<sup>213</sup> *Sherbrooke Turf, Inc. v. Minnesota Department of Transportation*, 345 F.3d 964 (8<sup>th</sup> Cir. 2003), cert. denied, 541 U.S. 1041 (2004).

<sup>214</sup> *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715 (7<sup>th</sup> Cir. 2007).

<sup>215</sup> *Builders Association of Greater Chicago v. City of Chicago*, 298 F. Supp.2d 725 (N.D. Ill. 2003).

DBE policies by measuring overall DBE availability in the relevant market area as opposed to only those businesses currently certified by an agency.<sup>216</sup> Third, when properly executed, the Custom Census is less likely to be tainted by the effects of past and present discrimination than other methods.<sup>217</sup>

The Custom Census method has seven steps. These are:

1. Create a database of representative and recent JMAA contracts in Construction, AE-CRS, Services, Commodities, and Concessions;
2. Identify JMAA's relevant geographic market from this database;
3. Identify JMAA's relevant product market from this database;
4. Count all business establishments in the relevant market area;
5. Identify listed DBE establishments in the relevant market area;
6. Verify the ownership status of listed DBEs; and
7. Verify the ownership status of all other firms in the relevant market area.

Steps 1-3 were described in Chapter III. Steps 4-7 are described in more detail below.

## **B. Identifying Business Establishments in the Relevant Markets**

DBE availability (unweighted) is defined as the number of DBEs divided by the total number of business establishments in JMAA's contracting market area—what we will refer to as the Baseline Business Universe.<sup>218</sup> Determining the total number of business establishments in the market area, however, is more straightforward than determining the number of minority- or women-owned establishments in those markets. The latter task has three main parts: (1) identify all listed DBEs in the relevant market; (2) verify the ownership status of listed DBEs; and (3) estimate the number of unlisted DBEs in the relevant market. This section describes how these tasks were accomplished for JMAA.

It is important to note that NERA's availability analysis is free from variables tainted by discrimination. Our approach recognizes that discrimination may impact many of the variables that contribute to a firm's success in obtaining work as a prime or a subcontractor. Factors such as firm size, time in business, qualifications, and experience are all adversely affected by discrimination if it is present in the market area. Despite the obvious relationship, some commentators argue that disparities should only be assessed between firms with similar

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<sup>216</sup> See *Northern Contracting, Inc. v. Illinois Department of Transportation*, 473 F.3d 715 at 723 (7<sup>th</sup> Cir. 2007) (“We agree with the district court that the remedial nature of the federal scheme militates in favor of a method of DBE availability calculation that casts a broader net”).

<sup>217</sup> See Section B.5., below, for further discussion of this point.

<sup>218</sup> To yield a percentage, the resulting figure is multiplied by 100.

“capacities.”<sup>219</sup> However, most courts have properly refused to make the results of discrimination the benchmark for non-discrimination.<sup>220</sup> They have acknowledged that DBEs may be smaller, newer, and otherwise less competitive than non-DBEs because of the very discrimination sought to be remedied by race-conscious contracting programs. Racial and gender differences in these “capacity” factors are the *outcomes* of discrimination and it is therefore inappropriate as a matter of economics and statistics to use them as “control” variables in a disparity study.<sup>221</sup>

## 1. Estimate the Total Number of Business Establishments in the Market

We used data supplied by Dun & Bradstreet to determine the total number of business establishments operating in the relevant geographic and product markets (these markets were discussed in the previous chapter). Dun & Bradstreet produces the most comprehensive publicly available database of business establishments in the U.S. This database contains over 15 million records and is updated continuously. Each record in Dun & Bradstreet represents a business establishment and includes the business name, address, telephone number, NAICS code, SIC code, business type, DUNS Number (a unique number assigned to each establishment by Dun & Bradstreet), and other descriptive information. Dun & Bradstreet gathers and verifies information from many different sources. These sources include, among others, annual management interviews, payment experiences, bank account information, filings for suits, liens, judgments and bankruptcies, news items, the U.S. Postal Service, utility and telephone service, business registrations, corporate charters, Uniform Commercial Code filings, and records of the Small Business Administration and other governmental agencies.

We used the Dun & Bradstreet database to identify the total number of businesses in each NAICS code that was identified as part of the JMAA product market. Table 4.1 shows the number of businesses identified in each NAICS Industry Group within the Construction category, along with the associated industry weight according to dollars awarded. Table 4.2 shows the same information along with the associated industry weight according to dollars paid. Comparable data for AE-CRS, Services, and Commodities appear in Tables 4.3 through 4.8.<sup>222</sup> Comparable data for Concessions appear in Tables 4.9 and 4.10.<sup>223</sup>

<sup>219</sup> See, e.g., La Noue (2006). Most of La Noue’s expert report in *Gross Seed Company v. Nebraska Department of Roads*, No. 02-3016 (D. Neb. 2002), including his views on “capacity,” was rejected by the court on the basis that it was legal opinion and not expert analysis. According to the court, “[legal analysis] is an issue solely for the Court and not for the presentation of expert testimony....” (see Defendants-Appellees’ Brief, *Gross Seed Company v. Nebraska Department of Roads*, on appeal to the Eighth Circuit Court of Appeals).

<sup>220</sup> *Concrete Works of Colorado, Inc. v. City and County of Denver*, 321 F.3d 950, 981, 983 (10<sup>th</sup> Cir. 2003), cert. denied, 124 S.Ct. 556 (2003) (emphasis in the originals) (“MWBE construction firms are generally smaller and less experienced *because* of discrimination.... Additionally, we do not read *Croson* to require disparity studies that measure whether construction firms are able to perform a *particular contract*.”).

<sup>221</sup> *Concrete Works*, 321 F.3d at 981 (emphasis in the original). See also Wainwright and Holt (2010), Appendix B “Understanding Capacity,” and Section B.5, below.

<sup>222</sup> Analogous sets of weights, restricted to federally-assisted contracts, were also produced. They are not published here due to space considerations.

<sup>223</sup> Weights for concessions are calculated based on gross revenues. Two sets of weights are used, one including car rental revenues and one excluding them.

Although numerous industries play a role in JMAA's Baseline Business Universe, contracting and subcontracting opportunities are not distributed evenly among them. The distribution of contract expenditures is, in fact, highly skewed, as documented above in Chapter III.

**Table 4.1. Construction—Number of Business Establishments and Industry Weight (Dollars Awarded), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
2373	Highway, Street, and Bridge Construction	327	32.08	32.08
2362	Nonresidential Building Construction	720	31.44	63.51
2389	Other Specialty Trade Contractors	1,610	8.29	71.80
3339	Other General Purpose Machinery Manufacturing	49	7.33	79.13
2382	Building Equipment Contractors	3,119	6.41	85.55
2381	Foundation, Structure, and Building Exterior Contractors	804	5.07	90.61
4236	Electrical and Electronic Goods Merchant Wholesalers	227	3.68	94.29
2371	Utility System Construction	244	2.82	97.11
5617	Services to Buildings and Dwellings	1,529	0.55	97.65
3351	Electric Lighting Equipment Manufacturing	15	0.42	98.07
2383	Building Finishing Contractors	1,042	0.38	98.46
4233	Lumber and Other Construction Materials Merchant Wholesalers	47	0.32	98.78
5416	Management, Scientific, and Technical Consulting Services	1,412	0.30	99.08
3273	Cement and Concrete Product Manufacturing	43	0.26	99.33
4841	General Freight Trucking	2,002	0.22	99.55
3324	Boiler, Tank, and Shipping Container Manufacturing	8	0.18	99.73
3399	Other Miscellaneous Manufacturing	210	0.16	99.89
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	84	0.11	100.00

Source: Dun & Bradstreet; DBE business directory information compiled by NERA; Master Contract/ Subcontract Database.

Notes: (1) Results are shown for the top 99 percent of contract dollars awarded. (2) Weights were renormalized so as to sum to 100.

**Table 4.2. Construction—Number of Business Establishments and Industry Weight (Dollars Paid), by NAICS Code**

<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Establishments</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
2362	Nonresidential Building Construction	720	38.87	38.87
2373	Highway, Street, and Bridge Construction	327	17.61	56.48
2389	Other Specialty Trade Contractors	1,610	10.52	67.00
3339	Other General Purpose Machinery Manufacturing	49	9.05	76.05
2381	Foundation, Structure, and Building Exterior Contractors	804	6.22	82.27
2382	Building Equipment Contractors	3,119	5.80	88.07
4236	Electrical and Electronic Goods Merchant Wholesalers	227	4.54	92.61
2371	Utility System Construction	244	3.64	96.25
5617	Services to Buildings and Dwellings	1,529	0.67	96.92
3351	Electric Lighting Equipment Manufacturing	15	0.52	97.44
2383	Building Finishing Contractors	1,042	0.47	97.92
4233	Lumber and Other Construction Materials Merchant Wholesalers	47	0.40	98.31
5416	Management, Scientific, and Technical Consulting Services	1,412	0.36	98.68
3273	Cement and Concrete Product Manufacturing	43	0.32	98.99
4841	General Freight Trucking	2,002	0.27	99.26
3324	Boiler, Tank, and Shipping Container Manufacturing	8	0.22	99.48
3399	Other Miscellaneous Manufacturing	210	0.18	99.66
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	84	0.13	99.79
2123	Nonmetallic Mineral Mining and Quarrying	53	0.11	99.90
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	238	0.10	100.00

Source and Notes: See Table 4.1.

**Table 4.3. AE-CRS—Number of Business Establishments and Industry Weight (Dollars Awarded), by NAICS Code**

<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Establishments</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
5413	Architectural, Engineering, and Related Services	1,258	88.52	88.52
5416	Management, Scientific, and Technical Consulting Services	1,598	8.20	96.72
5418	Advertising, Public Relations, and Related Services	106	1.85	98.56
7121	Museums, Historical Sites, and Similar Institutions	145	0.82	99.39
5629	Remediation and Other Waste Management Services	8	0.61	100.00

Source and Notes: See Table 4.1.

**Table 4.4. AE-CRS—Number of Business Establishments and Industry Weight (Dollars Paid), by NAICS Code**

<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Establishments</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
5413	Architectural, Engineering, and Related Services	1,258	88.52	88.52
5416	Management, Scientific, and Technical Consulting Services	1,598	7.94	96.46
5418	Advertising, Public Relations, and Related Services	106	2.36	98.82
5629	Remediation and Other Waste Management Services	8	0.66	99.48
7121	Museums, Historical Sites, and Similar Institutions	145	0.52	100.00

Source and Notes: See Table 4.1.

**Table 4.5. Services—Number of Business Establishments and Industry Weight (Dollars Awarded), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
8129	Other Personal Services	18	24.90	24.90
5416	Management, Scientific, and Technical Consulting Services	2,752	18.20	43.10
5242	Agencies, Brokerages, and Other Insurance Related Activities	2,620	11.93	55.03
5411	Legal Services	3,672	10.23	65.26
5415	Computer Systems Design and Related Services	331	4.02	69.28
5417	Scientific Research and Development Services	259	3.81	73.08
2389	Other Specialty Trade Contractors	1,227	2.96	76.04
7111	Performing Arts Companies	74	2.39	78.43
5312	Offices of Real Estate Agents and Brokers	2,659	2.13	80.57
5611	Office Administrative Services	768	1.73	82.30
2382	Building Equipment Contractors	3,119	1.27	83.57
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	486	1.25	84.81
5112	Software Publishers	81	1.14	85.95
4442	Lawn and Garden Equipment and Supplies Stores	78	1.05	87.00
5414	Specialized Design Services	194	1.00	88.00
5419	Other Professional, Scientific, and Technical Services	794	0.81	88.81
5617	Services to Buildings and Dwellings	3,520	0.77	89.59
5111	Newspaper, Periodical, Book, and Directory Publishers	212	0.71	90.30
4413	Automotive Parts, Accessories, and Tire Stores	463	0.64	90.94
5182	Data Processing, Hosting, and Related Services	127	0.55	91.48
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	742	0.54	92.02
8139	Business, Professional, Labor, Political, and Similar Organizations	380	0.52	92.54
4431	Electronics and Appliance Stores	413	0.52	93.06
5616	Investigation and Security Services	173	0.44	93.50
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	15	0.44	93.93
5413	Architectural, Engineering, and Related Services	897	0.41	94.34
5171	Wired Telecommunications Carriers	167	0.39	94.73
3339	Other General Purpose Machinery Manufacturing	5	0.33	95.06
3333	Commercial and Service Industry Machinery Manufacturing	34	0.33	95.39
3231	Printing and Related Support Activities	46	0.29	95.69
8112	Electronic and Precision Equipment Repair and Maintenance	312	0.29	95.98
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	138	0.28	96.26
6116	Other Schools and Instruction	496	0.25	96.51
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	685	0.24	96.75

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<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Establishments</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
4881	Support Activities for Air Transportation	45	0.21	96.96
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	9	0.21	97.18
5172	Wireless Telecommunications Carriers (except Satellite)	306	0.16	97.33
8123	Drycleaning and Laundry Services	356	0.15	97.48
5619	Other Support Services	25,373	0.15	97.63
2381	Foundation, Structure, and Building Exterior Contractors	477	0.15	97.78
4441	Building Material and Supplies Dealers	374	0.13	97.91
5313	Activities Related to Real Estate	321	0.12	98.03
5612	Facilities Support Services	51	0.12	98.15
5121	Motion Picture and Video Industries	154	0.11	98.26
5418	Advertising, Public Relations, and Related Services	104	0.11	98.38
4884	Support Activities for Road Transportation	281	0.09	98.47
4233	Lumber and Other Construction Materials Merchant Wholesalers	215	0.09	98.56
3343	Audio and Video Equipment Manufacturing	14	0.09	98.65
2362	Nonresidential Building Construction	720	0.09	98.74
7115	Independent Artists, Writers, and Performers	342	0.09	98.83
7211	Traveler Accommodation	888	0.08	98.91
5311	Lessors of Real Estate	1,265	0.08	98.99

Source and Notes: See Table 4.1.

**Table 4.6. Services—Number of Business Establishments and Industry Weight (Dollars Paid), by NAICS Code**

<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Establishments</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
8129	Other Personal Services	18	25.93	25.93
5416	Management, Scientific, and Technical Consulting Services	2,752	21.77	47.69
5242	Agencies, Brokerages, and Other Insurance Related Activities	2,620	12.42	60.11
5411	Legal Services	3,672	9.12	69.23
5415	Computer Systems Design and Related Services	331	3.89	73.12
2389	Other Specialty Trade Contractors	259	3.08	76.20
7111	Performing Arts Companies	1,227	2.47	78.68
8139	Business, Professional, Labor, Political, and Similar Organizations	74	1.74	80.42
2382	Building Equipment Contractors	2,659	1.32	81.74
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	768	1.30	83.04
5414	Specialized Design Services	3,119	1.24	84.27
5611	Office Administrative Services	486	1.21	85.49
5112	Software Publishers	81	1.18	86.67
4442	Lawn and Garden Equipment and Supplies Stores	78	1.09	87.76
5312	Offices of Real Estate Agents and Brokers	194	1.02	88.78
5419	Other Professional, Scientific, and Technical Services	794	0.85	89.62
5617	Services to Buildings and Dwellings	3,520	0.81	90.43
5111	Newspaper, Periodical, Book, and Directory Publishers	212	0.72	91.15
4413	Automotive Parts, Accessories, and Tire Stores	463	0.67	91.82
5417	Scientific Research and Development Services	127	0.65	92.47
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	742	0.56	93.03
4431	Electronics and Appliance Stores	380	0.54	93.57
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	413	0.45	94.02
5616	Investigation and Security Services	173	0.43	94.44
5171	Wired Telecommunications Carriers	15	0.40	94.85
5413	Architectural, Engineering, and Related Services	897	0.39	95.24
3339	Other General Purpose Machinery Manufacturing	167	0.35	95.59
3333	Commercial and Service Industry Machinery Manufacturing	5	0.34	95.93
5182	Data Processing, Hosting, and Related Services	34	0.33	96.25
3231	Printing and Related Support Activities	46	0.31	96.56
8112	Electronic and Precision Equipment Repair and Maintenance	312	0.31	96.87
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	138	0.30	97.16
6116	Other Schools and Instruction	496	0.26	97.42
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	685	0.25	97.67

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<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Establishments</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
4881	Support Activities for Air Transportation	45	0.22	97.89
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	9	0.22	98.11
5172	Wireless Telecommunications Carriers (except Satellite)	306	0.16	98.27
8123	Drycleaning and Laundry Services	356	0.16	98.43
5619	Other Support Services	25,373	0.15	98.58
2381	Foundation, Structure, and Building Exterior Contractors	477	0.15	98.74
4441	Building Material and Supplies Dealers	374	0.14	98.88
5313	Activities Related to Real Estate	321	0.13	99.00
5612	Facilities Support Services	51	0.12	99.13
5121	Motion Picture and Video Industries	154	0.12	99.24
5418	Advertising, Public Relations, and Related Services	104	0.12	99.36
4884	Support Activities for Road Transportation	281	0.10	99.46
4233	Lumber and Other Construction Materials Merchant Wholesalers	215	0.09	99.55
3343	Audio and Video Equipment Manufacturing	14	0.09	99.65
2362	Nonresidential Building Construction	720	0.09	99.74
7115	Independent Artists, Writers, and Performers	342	0.09	99.83
7211	Traveler Accommodation	888	0.09	99.92
5311	Lessors of Real Estate	1,265	0.08	100.00

Source and Notes: See Table 4.1.

**Table 4.7. Commodities—Number of Business Establishments and Industry Weight (Dollars Awarded), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	1,123	27.47	27.47
3342	Communications Equipment Manufacturing	45	17.95	45.42
3362	Motor Vehicle Body and Trailer Manufacturing	8	5.02	50.44
3339	Other General Purpose Machinery Manufacturing	61	4.92	55.36
4247	Petroleum and Petroleum Products Merchant Wholesalers	299	4.79	60.15
4411	Automobile Dealers	1,720	2.41	62.55
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	93	2.13	64.68
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	137	2.03	66.72
3152	Cut and Sew Apparel Manufacturing	11	1.84	68.55
5415	Computer Systems Design and Related Services	331	1.50	70.05
5418	Advertising, Public Relations, and Related Services	266	1.46	71.51
4236	Electrical and Electronic Goods Merchant Wholesalers	340	1.40	72.92
7223	Special Food Services	421	1.30	74.21
4239	Miscellaneous Durable Goods Merchant Wholesalers	598	1.27	75.49
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	280	1.16	76.64
4531	Florists	599	1.08	77.72
5416	Management, Scientific, and Technical Consulting Services	2,909	1.05	78.77
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	495	1.05	79.82
4413	Automotive Parts, Accessories, and Tire Stores	698	0.97	80.79
5172	Wireless Telecommunications Carriers (except Satellite)	306	0.93	81.72
5182	Data Processing, Hosting, and Related Services	127	0.88	82.60
3231	Printing and Related Support Activities	406	0.87	83.47
4881	Support Activities for Air Transportation	192	0.82	84.29
3351	Electric Lighting Equipment Manufacturing	4	0.81	85.10
5111	Newspaper, Periodical, Book, and Directory Publishers	394	0.73	85.83
3399	Other Miscellaneous Manufacturing	275	0.61	86.44
5112	Software Publishers	81	0.60	87.04
3323	Architectural and Structural Metals Manufacturing	37	0.59	87.63
5616	Investigation and Security Services	173	0.59	88.22
4412	Other Motor Vehicle Dealers	134	0.53	88.75
4421	Furniture Stores	773	0.53	89.27
3333	Commercial and Service Industry Machinery Manufacturing	34	0.51	89.78
7221	Full-Service Restaurants	3,560	0.47	90.26
3391	Medical Equipment and Supplies Manufacturing	19	0.41	90.67
4233	Lumber and Other Construction Materials Merchant Wholesalers	355	0.41	91.08

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NAICS Industry Group	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
4532	Office Supplies, Stationery, and Gift Stores	126	0.39	91.47
8123	Drycleaning and Laundry Services	31	0.39	91.87
5617	Services to Buildings and Dwellings	1,529	0.38	92.24
3262	Rubber Product Manufacturing	21	0.37	92.61
3331	Agriculture, Construction, and Mining Machinery Manufacturing	77	0.37	92.99
4244	Grocery and Related Product Merchant Wholesalers	215	0.35	93.34
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	129	0.35	93.69
3261	Plastics Product Manufacturing	61	0.34	94.04
4481	Clothing Stores	465	0.34	94.37
4431	Electronics and Appliance Stores	795	0.31	94.69
3341	Computer and Peripheral Equipment Manufacturing	10	0.31	94.99
7222	Limited-Service Eating Places	2,490	0.30	95.29
7211	Traveler Accommodation	888	0.28	95.56
4539	Other Miscellaneous Store Retailers	2,347	0.26	95.82
7139	Other Amusement and Recreation Industries	982	0.24	96.06
2382	Building Equipment Contractors	3,119	0.22	96.28
5321	Automotive Equipment Rental and Leasing	161	0.21	96.50
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	23	0.19	96.69
3119	Other Food Manufacturing	1	0.19	96.88
4441	Building Material and Supplies Dealers	778	0.18	97.06
3149	Other Textile Product Mills	120	0.18	97.23
5322	Consumer Goods Rental	141	0.17	97.40
5621	Waste Collection	1	0.16	97.56
5413	Architectural, Engineering, and Related Services	714	0.15	97.71
5419	Other Professional, Scientific, and Technical Services	4,108	0.15	97.86
4511	Sporting Goods, Hobby, and Musical Instrument Stores	337	0.15	98.01
3364	Aerospace Product and Parts Manufacturing	7	0.14	98.15
5171	Wired Telecommunications Carriers	167	0.12	98.27
5331	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	25	0.11	98.38
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	465	0.11	98.49
3118	Bakeries and Tortilla Manufacturing	173	0.11	98.60
8129	Other Personal Services	491	0.11	98.71
3255	Paint, Coating, and Adhesive Manufacturing	15	0.10	98.81
6219	Other Ambulatory Health Care Services	1,148	0.10	98.91
4241	Paper and Paper Product Merchant Wholesalers	50	0.09	99.00
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	624	0.09	99.09
3369	Other Transportation Equipment Manufacturing	10	0.09	99.17
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	15	0.08	99.25
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	24	0.07	99.32

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<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Establishments</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
5619	Other Support Services	25,373	0.07	99.40
5629	Remediation and Other Waste Management Services	117	0.07	99.47
4543	Direct Selling Establishments	3	0.07	99.54
4533	Used Merchandise Stores	704	0.07	99.61
4841	General Freight Trucking	2,002	0.07	99.68
4232	Furniture and Home Furnishing Merchant Wholesalers	202	0.06	99.73
8134	Civic and Social Organizations	1,146	0.05	99.78
8111	Automotive Repair and Maintenance	702	0.05	99.83
3222	Converted Paper Product Manufacturing	1	0.04	99.87
3329	Other Fabricated Metal Product Manufacturing	27	0.04	99.92
4521	Department Stores	174	0.04	99.96
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	6	0.04	100.00

Source and Notes: See Table 4.1.

**Table 4.8. Commodities—Number of Business Establishments and Industry Weight (Dollars Paid), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	1,123	27.60	27.60
3342	Communications Equipment Manufacturing	45	17.62	45.22
3362	Motor Vehicle Body and Trailer Manufacturing	8	5.04	50.26
3339	Other General Purpose Machinery Manufacturing	61	4.94	55.20
4247	Petroleum and Petroleum Products Merchant Wholesalers	299	4.81	60.02
4411	Automobile Dealers	1,720	2.42	62.43
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	93	2.14	64.57
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	137	1.93	66.51
3152	Cut and Sew Apparel Manufacturing	11	1.85	68.35
5415	Computer Systems Design and Related Services	331	1.51	69.86
5418	Advertising, Public Relations, and Related Services	266	1.42	71.28
4236	Electrical and Electronic Goods Merchant Wholesalers	340	1.41	72.69
7223	Special Food Services	421	1.30	73.99
4239	Miscellaneous Durable Goods Merchant Wholesalers	598	1.28	75.27
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	280	1.16	76.44
4531	Florists	599	1.08	77.52
5416	Management, Scientific, and Technical Consulting Services	2,909	1.06	78.58
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	495	1.05	79.63
4413	Automotive Parts, Accessories, and Tire Stores	698	0.98	80.60
5172	Wireless Telecommunications Carriers (except Satellite)	306	0.94	81.54
5182	Data Processing, Hosting, and Related Services	127	0.88	82.42
3231	Printing and Related Support Activities	406	0.87	83.30
4881	Support Activities for Air Transportation	192	0.82	84.12
3351	Electric Lighting Equipment Manufacturing	4	0.81	84.93
5111	Newspaper, Periodical, Book, and Directory Publishers	394	0.73	85.66
5112	Software Publishers	275	0.72	86.38
3399	Other Miscellaneous Manufacturing	81	0.61	87.00
3323	Architectural and Structural Metals Manufacturing	37	0.59	87.59
5616	Investigation and Security Services	173	0.59	88.18
4412	Other Motor Vehicle Dealers	134	0.54	88.72
4421	Furniture Stores	773	0.53	89.24
3333	Commercial and Service Industry Machinery Manufacturing	34	0.51	89.76
7221	Full-Service Restaurants	3,560	0.48	90.23
3391	Medical Equipment and Supplies Manufacturing	19	0.42	90.65
4233	Lumber and Other Construction Materials Merchant Wholesalers	355	0.41	91.06

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NAICS Industry Group	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
4532	Office Supplies, Stationery, and Gift Stores	126	0.39	91.46
8123	Drycleaning and Laundry Services	31	0.39	91.85
5617	Services to Buildings and Dwellings	1,529	0.38	92.23
3262	Rubber Product Manufacturing	21	0.38	92.60
3331	Agriculture, Construction, and Mining Machinery Manufacturing	77	0.37	92.98
4244	Grocery and Related Product Merchant Wholesalers	215	0.35	93.33
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	129	0.35	93.68
3261	Plastics Product Manufacturing	61	0.35	94.03
4481	Clothing Stores	465	0.34	94.37
4431	Electronics and Appliance Stores	795	0.31	94.68
3341	Computer and Peripheral Equipment Manufacturing	10	0.31	94.99
7222	Limited-Service Eating Places	2,490	0.30	95.29
4539	Other Miscellaneous Store Retailers	888	0.26	95.55
7211	Traveler Accommodation	2,347	0.26	95.80
7139	Other Amusement and Recreation Industries	982	0.24	96.04
2382	Building Equipment Contractors	3,119	0.22	96.27
5321	Automotive Equipment Rental and Leasing	161	0.21	96.48
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	23	0.19	96.67
3119	Other Food Manufacturing	1	0.19	96.86
4441	Building Material and Supplies Dealers	778	0.18	97.04
3149	Other Textile Product Mills	120	0.18	97.22
5322	Consumer Goods Rental	141	0.17	97.39
5621	Waste Collection	1	0.16	97.55
5413	Architectural, Engineering, and Related Services	714	0.15	97.70
5419	Other Professional, Scientific, and Technical Services	4,108	0.15	97.85
4511	Sporting Goods, Hobby, and Musical Instrument Stores	337	0.15	98.00
3364	Aerospace Product and Parts Manufacturing	7	0.14	98.14
5171	Wired Telecommunications Carriers	167	0.12	98.26
5331	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	25	0.11	98.37
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	465	0.11	98.49
3118	Bakeries and Tortilla Manufacturing	173	0.11	98.60
8129	Other Personal Services	491	0.11	98.70
3255	Paint, Coating, and Adhesive Manufacturing	15	0.10	98.80
6219	Other Ambulatory Health Care Services	1,148	0.10	98.90
4241	Paper and Paper Product Merchant Wholesalers	50	0.09	98.99
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	624	0.09	99.08
3369	Other Transportation Equipment Manufacturing	10	0.09	99.17
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	15	0.08	99.24
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	24	0.07	99.32

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<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Establishments</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
5619	Other Support Services	25,373	0.07	99.39
5629	Remediation and Other Waste Management Services	117	0.07	99.47
4543	Direct Selling Establishments	3	0.07	99.54
4533	Used Merchandise Stores	704	0.07	99.61
4841	General Freight Trucking	2,002	0.07	99.68
4232	Furniture and Home Furnishing Merchant Wholesalers	202	0.06	99.73
8134	Civic and Social Organizations	1,146	0.05	99.78
8111	Automotive Repair and Maintenance	702	0.05	99.83
3222	Converted Paper Product Manufacturing	1	0.04	99.87
3329	Other Fabricated Metal Product Manufacturing	27	0.04	99.92
4521	Department Stores	174	0.04	99.96
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	6	0.04	100.00

Source and Notes: See Table 4.1.

**Table 4.9. Concessions—Number of Business Establishments and Industry Weight (Including Car Rentals), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
532111	Passenger Car Rental (Majors Only)	75	86.61	86.61
722211	Limited-Service Restaurants	2,490	5.53	92.15
451212	News Dealers and Newsstands	8	4.47	96.61
722110	Full-Service Restaurants	3,560	1.52	98.14
453220	Gift, Novelty, and Souvenir Stores	1,081	1.22	99.36
541850	Display Advertising	34	0.55	99.91
812990	All Other Personal Services	491	0.06	99.97
522110	Commercial Banking	1,047	0.03	100.00

Source and Notes: See Table 4.1.

**Table 4.10. Concessions—Number of Business Establishments and Industry Weight (Excluding Car Rentals), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Establishments	Industry Weight	Industry Weight (Cumulative)
722211	Limited-Service Restaurants	2,490	41.34	41.34
451212	News Dealers and Newsstands	8	33.38	74.72
722110	Full-Service Restaurants	3,560	11.37	86.09
453220	Gift, Novelty, and Souvenir Stores	1,081	9.13	95.22
541850	Display Advertising	34	4.09	99.31
812990	All Other Personal Services	491	0.48	99.79
522110	Commercial Banking	1,047	0.21	100.00

Source and Notes: See Table 4.1.

## 2. Identify Listed DBEs

While extensive, Dun & Bradstreet does not sufficiently identify all businesses owned by minorities or women. Although many such businesses *are* correctly identified in Dun & Bradstreet, experience has demonstrated that many are also missed. For this reason, several additional steps were required to identify the appropriate percentage of DBEs in the relevant market.

First, NERA completed an intensive regional search for information on minority-owned and woman-owned businesses in Mississippi. Beyond the information already in Dun & Bradstreet, NERA collected lists of M/WBEs from other public and private entities. Specifically, directories were included from: JMAA, Mississippi Department of Transportation, American Indian Search, Business Research Services Inc., City of Jackson, Diversity Information Resources,

DiversityBusiness.com, The DMWBE Directory, Minority Professional Network, Mississippi Development Authority, National Women Business Owners Corporation, Picayune Minority Business Group, Robinson & Watson Book Company, Small Business Administration/Central Contractor Registry, State of Mississippi Office of Purchasing, Travel and Fleet Management, Tunica Airport, U.S. Department of Commerce, United Indian Development Association, and Women Business Enterprise South Council.<sup>224</sup>

If the listed DBEs identified in Tables 4.11-4.20 are in fact *all* DBEs and are the *only* DBEs among all of the businesses identified in Tables 4.1-4.10, then an estimate of “listed” DBE availability is simply the number of listed DBEs (taken from Tables 4.11–4.20, respectively) divided by the total number of businesses in the relevant market (taken from Tables 4.1-4.10, respectively). However, as we shall see below, neither of these two conditions holds true in practice and this is therefore *not* an appropriate method for measuring DBE availability.

There are two reasons for this. First, it is likely that some proportion of the DBEs listed in the tables is not actually minority-owned or women-owned. Second, it is likely that there are additional “unlisted” DBEs among all of the businesses included in Tables 4.1-4.10. Such businesses do not appear in any of the directories we gathered and are therefore not included as DBEs in Tables 4.11-4.12. Additional steps are required to test these two conditions and to arrive at a more accurate representation of DBE availability within the Baseline Business Universe. We discuss these steps in Sections 3.A and 3.B below.

**Table 4.11. Construction—Number of Listed DBEs and Industry Weight (Dollars Awarded), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Listed DBEs	Industry Weight	Industry Weight (Cumulative)
2373	Highway, Street, and Bridge Construction	53	32.08	32.08
2362	Nonresidential Building Construction	137	31.44	63.51
2389	Other Specialty Trade Contractors	160	8.29	71.80
3339	Other General Purpose Machinery Manufacturing	2	7.33	79.13
2382	Building Equipment Contractors	180	6.41	85.55
2381	Foundation, Structure, and Building Exterior Contractors	63	5.07	90.61
4236	Electrical and Electronic Goods Merchant Wholesalers	22	3.68	94.29
2371	Utility System Construction	23	2.82	97.11
5617	Services to Buildings and Dwellings	115	0.55	97.65
3351	Electric Lighting Equipment Manufacturing	4	0.42	98.07
2383	Building Finishing Contractors	59	0.38	98.46
4233	Lumber and Other Construction Materials Merchant	4	0.32	98.78

<sup>224</sup> We also obtained information from certain entities that was duplicative of either Dun & Bradstreet or one or more of the other sources listed above. These entities are listed below in Appendix A. We were unable to obtain relevant lists or directories from a number of entities. The reasons for this include: (1) the entity did not have a list or the entity's list did not include race and sex information; (2) the entity was unresponsive to repeated attempts at contacts; or, (3) the entity simply declined to provide us the list. These entities, as well, are listed in Appendix A.

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<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Listed DBEs</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
	Wholesalers			
5416	Management, Scientific, and Technical Consulting Services	183	0.30	99.08
3273	Cement and Concrete Product Manufacturing	4	0.26	99.33
4841	General Freight Trucking	111	0.22	99.55
3324	Boiler, Tank, and Shipping Container Manufacturing	2	0.18	99.73
3399	Other Miscellaneous Manufacturing	23	0.16	99.89
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	4	0.11	100.00

Source and Notes: See Table 4.1.

**Table 4.12. Construction—Number of Listed DBEs and Industry Weight (Dollars Paid), by NAICS Code**

<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Listed DBEs</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
2362	Nonresidential Building Construction	137	38.87	38.87
2373	Highway, Street, and Bridge Construction	53	17.61	56.48
2389	Other Specialty Trade Contractors	160	10.52	67.00
3339	Other General Purpose Machinery Manufacturing	2	9.05	76.05
2381	Foundation, Structure, and Building Exterior Contractors	63	6.22	82.27
2382	Building Equipment Contractors	180	5.80	88.07
4236	Electrical and Electronic Goods Merchant Wholesalers	22	4.54	92.61
2371	Utility System Construction	23	3.64	96.25
5617	Services to Buildings and Dwellings	115	0.67	96.92
3351	Electric Lighting Equipment Manufacturing	4	0.52	97.44
2383	Building Finishing Contractors	59	0.47	97.92
4233	Lumber and Other Construction Materials Merchant Wholesalers	4	0.40	98.31
5416	Management, Scientific, and Technical Consulting Services	183	0.36	98.68
3273	Cement and Concrete Product Manufacturing	4	0.32	98.99
4841	General Freight Trucking	111	0.27	99.26
3324	Boiler, Tank, and Shipping Container Manufacturing	2	0.22	99.48
3399	Other Miscellaneous Manufacturing	23	0.18	99.66
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	4	0.13	99.79
2123	Nonmetallic Mineral Mining and Quarrying	5	0.11	99.90
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	23	0.10	100.00

Source and Notes: See Table 4.1.

**Table 4.13. AE-CRS—Number of Listed DBE Establishments and Industry Weight (Dollars Awarded), by NAICS Code**

<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Listed DBEs</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
5413	Architectural, Engineering, and Related Services	106	88.52	88.52
5416	Management, Scientific, and Technical Consulting Services	195	8.20	96.72
5418	Advertising, Public Relations, and Related Services	11	1.85	98.56
7121	Museums, Historical Sites, and Similar Institutions	1	0.82	99.39
5629	Remediation and Other Waste Management Services	1	0.61	100.00

Source and Notes: See Table 4.1.

**Table 4.14. AE-CRS—Number of Listed DBE Establishments and Industry Weight (Dollars Paid), by NAICS Code**

<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Listed DBEs</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
5413	Architectural, Engineering, and Related Services	106	88.52	88.52
5416	Management, Scientific, and Technical Consulting Services	195	7.94	96.46
5418	Advertising, Public Relations, and Related Services	11	2.36	98.82
5629	Remediation and Other Waste Management Services	1	0.66	99.48
7121	Museums, Historical Sites, and Similar Institutions	1	0.52	100.00

Source and Notes: See Table 4.1.

**Table 4.15. Services—Number of Listed DBE Establishments and Industry Weight (Dollars Awarded), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Listed DBEs	Industry Weight	Industry Weight (Cumulative)
8129	Other Personal Services	1	24.90	24.90
5416	Management, Scientific, and Technical Consulting Services	359	18.20	43.10
5242	Agencies, Brokerages, and Other Insurance Related Activities	158	11.93	55.03
5411	Legal Services	211	10.23	65.26
5415	Computer Systems Design and Related Services	78	4.02	69.28
5417	Scientific Research and Development Services	31	3.81	73.08
2389	Other Specialty Trade Contractors	95	2.96	76.04
7111	Performing Arts Companies	18	2.39	78.43
5312	Offices of Real Estate Agents and Brokers	328	2.13	80.57
5611	Office Administrative Services	45	1.73	82.30
2382	Building Equipment Contractors	180	1.27	83.57
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	30	1.25	84.81
5112	Software Publishers	8	1.14	85.95
4442	Lawn and Garden Equipment and Supplies Stores	7	1.05	87.00
5414	Specialized Design Services	28	1.00	88.00
5419	Other Professional, Scientific, and Technical Services	43	0.81	88.81
5617	Services to Buildings and Dwellings	413	0.77	89.59
5111	Newspaper, Periodical, Book, and Directory Publishers	32	0.71	90.30
4413	Automotive Parts, Accessories, and Tire Stores	25	0.64	90.94
5182	Data Processing, Hosting, and Related Services	13	0.55	91.48
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	42	0.54	92.02
8139	Business, Professional, Labor, Political, and Similar Organizations	3	0.52	92.54
4431	Electronics and Appliance Stores	27	0.52	93.06
5616	Investigation and Security Services	16	0.44	93.50
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	2	0.44	93.93
5413	Architectural, Engineering, and Related Services	79	0.41	94.34
5171	Wired Telecommunications Carriers	13	0.39	94.73
3339	Other General Purpose Machinery Manufacturing	0	0.33	95.06
3333	Commercial and Service Industry Machinery Manufacturing	2	0.33	95.39
3231	Printing and Related Support Activities	6	0.29	95.69
8112	Electronic and Precision Equipment Repair and Maintenance	19	0.29	95.98
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	16	0.28	96.26
6116	Other Schools and Instruction	84	0.25	96.51
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	67	0.24	96.75

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<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Listed DBEs</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
4881	Support Activities for Air Transportation	3	0.21	96.96
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	0	0.21	97.18
5172	Wireless Telecommunications Carriers (except Satellite)	11	0.16	97.33
8123	Drycleaning and Laundry Services	51	0.15	97.48
5619	Other Support Services	175	0.15	97.63
2381	Foundation, Structure, and Building Exterior Contractors	24	0.15	97.78
4441	Building Material and Supplies Dealers	19	0.13	97.91
5313	Activities Related to Real Estate	39	0.12	98.03
5612	Facilities Support Services	6	0.12	98.15
5121	Motion Picture and Video Industries	16	0.11	98.26
5418	Advertising, Public Relations, and Related Services	29	0.11	98.38
4884	Support Activities for Road Transportation	18	0.09	98.47
4233	Lumber and Other Construction Materials Merchant Wholesalers	10	0.09	98.56
3343	Audio and Video Equipment Manufacturing	1	0.09	98.65
2362	Nonresidential Building Construction	137	0.09	98.74
7115	Independent Artists, Writers, and Performers	40	0.09	98.83
7211	Traveler Accommodation	115	0.08	98.91
5311	Lessors of Real Estate	27	0.08	98.99

Source and Notes: See Table 4.1.

**Table 4.16. Services—Number of Listed DBE Establishments and Industry Weight (Dollars Paid), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Listed DBEs	Industry Weight	Industry Weight (Cumulative)
8129	Other Personal Services	1	25.93	25.93
5416	Management, Scientific, and Technical Consulting Services	359	21.77	47.69
5242	Agencies, Brokerages, and Other Insurance Related Activities	158	12.42	60.11
5411	Legal Services	211	9.12	69.23
5415	Computer Systems Design and Related Services	78	3.89	73.12
2389	Other Specialty Trade Contractors	95	3.08	76.20
7111	Performing Arts Companies	18	2.47	78.68
8139	Business, Professional, Labor, Political, and Similar Organizations	3	1.74	80.42
2382	Building Equipment Contractors	180	1.32	81.74
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	30	1.30	83.04
5414	Specialized Design Services	28	1.24	84.27
5611	Office Administrative Services	45	1.21	85.49
5112	Software Publishers	8	1.18	86.67
4442	Lawn and Garden Equipment and Supplies Stores	7	1.09	87.76
5312	Offices of Real Estate Agents and Brokers	328	1.02	88.78
5419	Other Professional, Scientific, and Technical Services	43	0.85	89.62
5617	Services to Buildings and Dwellings	413	0.81	90.43
5111	Newspaper, Periodical, Book, and Directory Publishers	32	0.72	91.15
4413	Automotive Parts, Accessories, and Tire Stores	25	0.67	91.82
5417	Scientific Research and Development Services	31	0.65	92.47
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	42	0.56	93.03
4431	Electronics and Appliance Stores	27	0.54	93.57
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	2	0.45	94.02
5616	Investigation and Security Services	16	0.43	94.44
5171	Wired Telecommunications Carriers	13	0.40	94.85
5413	Architectural, Engineering, and Related Services	79	0.39	95.24
3339	Other General Purpose Machinery Manufacturing	0	0.35	95.59
3333	Commercial and Service Industry Machinery Manufacturing	2	0.34	95.93
5182	Data Processing, Hosting, and Related Services	13	0.33	96.25
3231	Printing and Related Support Activities	6	0.31	96.56
8112	Electronic and Precision Equipment Repair and Maintenance	19	0.31	96.87
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	16	0.30	97.16
6116	Other Schools and Instruction	84	0.26	97.42
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	67	0.25	97.67

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<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Listed DBEs</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
4881	Support Activities for Air Transportation	3	0.22	97.89
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	0	0.22	98.11
5172	Wireless Telecommunications Carriers (except Satellite)	11	0.16	98.27
8123	Drycleaning and Laundry Services	51	0.16	98.43
5619	Other Support Services	175	0.15	98.58
2381	Foundation, Structure, and Building Exterior Contractors	24	0.15	98.74
4441	Building Material and Supplies Dealers	19	0.14	98.88
5313	Activities Related to Real Estate	39	0.13	99.00
5612	Facilities Support Services	6	0.12	99.13
5121	Motion Picture and Video Industries	16	0.12	99.24
5418	Advertising, Public Relations, and Related Services	29	0.12	99.36
4884	Support Activities for Road Transportation	18	0.10	99.46
4233	Lumber and Other Construction Materials Merchant Wholesalers	10	0.09	99.55
3343	Audio and Video Equipment Manufacturing	1	0.09	99.65
2362	Nonresidential Building Construction	137	0.09	99.74
7115	Independent Artists, Writers, and Performers	40	0.09	99.83
7211	Traveler Accommodation	115	0.09	99.92
5311	Lessors of Real Estate	27	0.08	100.00

Source and Notes: See Table 4.1.

**Table 4.17. Commodities—Number of Listed DBE Establishments and Industry Weight (Dollars Awarded), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Listed DBEs	Industry Weight	Industry Weight (Cumulative)
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	111	27.47	27.47
3342	Communications Equipment Manufacturing	4	17.95	45.42
3362	Motor Vehicle Body and Trailer Manufacturing	0	5.02	50.44
3339	Other General Purpose Machinery Manufacturing	5	4.92	55.36
4247	Petroleum and Petroleum Products Merchant Wholesalers	14	4.79	60.15
4411	Automobile Dealers	69	2.41	62.55
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	8	2.13	64.68
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	8	2.03	66.72
3152	Cut and Sew Apparel Manufacturing	0	1.84	68.55
5415	Computer Systems Design and Related Services	78	1.50	70.05
5418	Advertising, Public Relations, and Related Services	60	1.46	71.51
4236	Electrical and Electronic Goods Merchant Wholesalers	28	1.40	72.92
7223	Special Food Services	54	1.30	74.21
4239	Miscellaneous Durable Goods Merchant Wholesalers	40	1.27	75.49
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	15	1.16	76.64
4531	Florists	191	1.08	77.72
5416	Management, Scientific, and Technical Consulting Services	371	1.05	78.77
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	21	1.05	79.82
4413	Automotive Parts, Accessories, and Tire Stores	31	0.97	80.79
5172	Wireless Telecommunications Carriers (except Satellite)	11	0.93	81.72
5182	Data Processing, Hosting, and Related Services	13	0.88	82.60
3231	Printing and Related Support Activities	63	0.87	83.47
4881	Support Activities for Air Transportation	5	0.82	84.29
3351	Electric Lighting Equipment Manufacturing	1	0.81	85.10
5111	Newspaper, Periodical, Book, and Directory Publishers	53	0.73	85.83
3399	Other Miscellaneous Manufacturing	29	0.61	86.44
5112	Software Publishers	8	0.60	87.04
3323	Architectural and Structural Metals Manufacturing	4	0.59	87.63
5616	Investigation and Security Services	16	0.59	88.22
4412	Other Motor Vehicle Dealers	7	0.53	88.75
4421	Furniture Stores	84	0.53	89.27
3333	Commercial and Service Industry Machinery Manufacturing	2	0.51	89.78
7221	Full-Service Restaurants	293	0.47	90.26
3391	Medical Equipment and Supplies Manufacturing	1	0.41	90.67
4233	Lumber and Other Construction Materials Merchant Wholesalers	25	0.41	91.08

D/M/WBE Availability in JMAA's Market Area

NAICS Industry Group	NAICS Description	Number of Listed DBEs	Industry Weight	Industry Weight (Cumulative)
4532	Office Supplies, Stationery, and Gift Stores	23	0.39	91.47
8123	Drycleaning and Laundry Services	7	0.39	91.87
5617	Services to Buildings and Dwellings	115	0.38	92.24
3262	Rubber Product Manufacturing	2	0.37	92.61
3331	Agriculture, Construction, and Mining Machinery Manufacturing	7	0.37	92.99
4244	Grocery and Related Product Merchant Wholesalers	18	0.35	93.34
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	3	0.35	93.69
3261	Plastics Product Manufacturing	9	0.34	94.04
4481	Clothing Stores	104	0.34	94.37
4431	Electronics and Appliance Stores	45	0.31	94.69
3341	Computer and Peripheral Equipment Manufacturing	2	0.31	94.99
7222	Limited-Service Eating Places	129	0.30	95.29
7211	Traveler Accommodation	115	0.28	95.56
4539	Other Miscellaneous Store Retailers	134	0.26	95.82
7139	Other Amusement and Recreation Industries	74	0.24	96.06
2382	Building Equipment Contractors	180	0.22	96.28
5321	Automotive Equipment Rental and Leasing	6	0.21	96.50
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	3	0.19	96.69
3119	Other Food Manufacturing	0	0.19	96.88
4441	Building Material and Supplies Dealers	50	0.18	97.06
3149	Other Textile Product Mills	46	0.18	97.23
5322	Consumer Goods Rental	11	0.17	97.40
5621	Waste Collection	1	0.16	97.56
5413	Architectural, Engineering, and Related Services	71	0.15	97.71
5419	Other Professional, Scientific, and Technical Services	157	0.15	97.86
4511	Sporting Goods, Hobby, and Musical Instrument Stores	34	0.15	98.01
3364	Aerospace Product and Parts Manufacturing	2	0.14	98.15
5171	Wired Telecommunications Carriers	13	0.12	98.27
5331	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	1	0.11	98.38
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	27	0.11	98.49
3118	Bakeries and Tortilla Manufacturing	32	0.11	98.60
8129	Other Personal Services	57	0.11	98.71
3255	Paint, Coating, and Adhesive Manufacturing	2	0.10	98.81
6219	Other Ambulatory Health Care Services	33	0.10	98.91
4241	Paper and Paper Product Merchant Wholesalers	13	0.09	99.00
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	109	0.09	99.09
3369	Other Transportation Equipment Manufacturing	0	0.09	99.17
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	2	0.08	99.25
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	2	0.07	99.32

D/M/WBE Availability in JMAA's Market Area

<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Listed DBEs</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
5619	Other Support Services	175	0.07	99.40
5629	Remediation and Other Waste Management Services	14	0.07	99.47
4543	Direct Selling Establishments	0	0.07	99.54
4533	Used Merchandise Stores	118	0.07	99.61
4841	General Freight Trucking	111	0.07	99.68
4232	Furniture and Home Furnishing Merchant Wholesalers	14	0.06	99.73
8134	Civic and Social Organizations	11	0.05	99.78
8111	Automotive Repair and Maintenance	40	0.05	99.83
3222	Converted Paper Product Manufacturing	0	0.04	99.87
3329	Other Fabricated Metal Product Manufacturing	2	0.04	99.92
4521	Department Stores	6	0.04	99.96
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	1	0.04	100.00

Source and Notes: See Table 4.1.

**Table 4.18. Commodities—Number of Listed DBE Establishments and Industry Weight (Dollars Paid), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Listed DBEs	Industry Weight	Industry Weight (Cumulative)
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	111	27.60	27.60
3342	Communications Equipment Manufacturing	4	17.62	45.22
3362	Motor Vehicle Body and Trailer Manufacturing	0	5.04	50.26
3339	Other General Purpose Machinery Manufacturing	5	4.94	55.20
4247	Petroleum and Petroleum Products Merchant Wholesalers	14	4.81	60.02
4411	Automobile Dealers	69	2.42	62.43
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	8	2.14	64.57
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	8	1.93	66.51
3152	Cut and Sew Apparel Manufacturing	0	1.85	68.35
5415	Computer Systems Design and Related Services	78	1.51	69.86
5418	Advertising, Public Relations, and Related Services	60	1.42	71.28
4236	Electrical and Electronic Goods Merchant Wholesalers	28	1.41	72.69
7223	Special Food Services	54	1.30	73.99
4239	Miscellaneous Durable Goods Merchant Wholesalers	40	1.28	75.27
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	15	1.16	76.44
4531	Florists	191	1.08	77.52
5416	Management, Scientific, and Technical Consulting Services	371	1.06	78.58
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	21	1.05	79.63
4413	Automotive Parts, Accessories, and Tire Stores	31	0.98	80.60
5172	Wireless Telecommunications Carriers (except Satellite)	11	0.94	81.54
5182	Data Processing, Hosting, and Related Services	13	0.88	82.42
3231	Printing and Related Support Activities	63	0.87	83.30
4881	Support Activities for Air Transportation	5	0.82	84.12
3351	Electric Lighting Equipment Manufacturing	1	0.81	84.93
5111	Newspaper, Periodical, Book, and Directory Publishers	53	0.73	85.66
5112	Software Publishers	8	0.72	86.38
3399	Other Miscellaneous Manufacturing	29	0.61	87.00
3323	Architectural and Structural Metals Manufacturing	4	0.59	87.59
5616	Investigation and Security Services	16	0.59	88.18
4412	Other Motor Vehicle Dealers	7	0.54	88.72
4421	Furniture Stores	84	0.53	89.24
3333	Commercial and Service Industry Machinery Manufacturing	2	0.51	89.76
7221	Full-Service Restaurants	293	0.48	90.23
3391	Medical Equipment and Supplies Manufacturing	1	0.42	90.65
4233	Lumber and Other Construction Materials Merchant Wholesalers	25	0.41	91.06

D/M/WBE Availability in JMAA's Market Area

NAICS Industry Group	NAICS Description	Number of Listed DBEs	Industry Weight	Industry Weight (Cumulative)
4532	Office Supplies, Stationery, and Gift Stores	23	0.39	91.46
8123	Drycleaning and Laundry Services	7	0.39	91.85
5617	Services to Buildings and Dwellings	115	0.38	92.23
3262	Rubber Product Manufacturing	2	0.38	92.60
3331	Agriculture, Construction, and Mining Machinery Manufacturing	7	0.37	92.98
4244	Grocery and Related Product Merchant Wholesalers	18	0.35	93.33
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	3	0.35	93.68
3261	Plastics Product Manufacturing	9	0.35	94.03
4481	Clothing Stores	104	0.34	94.37
4431	Electronics and Appliance Stores	45	0.31	94.68
3341	Computer and Peripheral Equipment Manufacturing	2	0.31	94.99
7222	Limited-Service Eating Places	129	0.30	95.29
4539	Other Miscellaneous Store Retailers	134	0.26	95.55
7211	Traveler Accommodation	115	0.26	95.80
7139	Other Amusement and Recreation Industries	74	0.24	96.04
2382	Building Equipment Contractors	180	0.22	96.27
5321	Automotive Equipment Rental and Leasing	6	0.21	96.48
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	3	0.19	96.67
3119	Other Food Manufacturing	0	0.19	96.86
4441	Building Material and Supplies Dealers	50	0.18	97.04
3149	Other Textile Product Mills	46	0.18	97.22
5322	Consumer Goods Rental	11	0.17	97.39
5621	Waste Collection	1	0.16	97.55
5413	Architectural, Engineering, and Related Services	71	0.15	97.70
5419	Other Professional, Scientific, and Technical Services	157	0.15	97.85
4511	Sporting Goods, Hobby, and Musical Instrument Stores	34	0.15	98.00
3364	Aerospace Product and Parts Manufacturing	2	0.14	98.14
5171	Wired Telecommunications Carriers	13	0.12	98.26
5331	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	1	0.11	98.37
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	27	0.11	98.49
3118	Bakeries and Tortilla Manufacturing	32	0.11	98.60
8129	Other Personal Services	57	0.11	98.70
3255	Paint, Coating, and Adhesive Manufacturing	2	0.10	98.80
6219	Other Ambulatory Health Care Services	33	0.10	98.90
4241	Paper and Paper Product Merchant Wholesalers	13	0.09	98.99
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	109	0.09	99.08
3369	Other Transportation Equipment Manufacturing	0	0.09	99.17
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	2	0.08	99.24
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	2	0.07	99.32

D/M/WBE Availability in JMAA's Market Area

<b>NAICS Industry Group</b>	<b>NAICS Description</b>	<b>Number of Listed DBEs</b>	<b>Industry Weight</b>	<b>Industry Weight (Cumulative)</b>
5619	Other Support Services	175	0.07	99.39
5629	Remediation and Other Waste Management Services	14	0.07	99.47
4543	Direct Selling Establishments	0	0.07	99.54
4533	Used Merchandise Stores	118	0.07	99.61
4841	General Freight Trucking	111	0.07	99.68
4232	Furniture and Home Furnishing Merchant Wholesalers	14	0.06	99.73
8134	Civic and Social Organizations	11	0.05	99.78
8111	Automotive Repair and Maintenance	40	0.05	99.83
3222	Converted Paper Product Manufacturing	0	0.04	99.87
3329	Other Fabricated Metal Product Manufacturing	2	0.04	99.92
4521	Department Stores	6	0.04	99.96
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	1	0.04	100.00

Source and Notes: See Table 4.1.

**Table 4.19. Concessions—Number of Listed DBE Establishments and Industry Weight (Including Car Rentals), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Listed DBEs	Industry Weight	Industry Weight (Cumulative)
532111	Passenger Car Rental (Majors Only)	0	86.61	86.61
722211	Limited-Service Restaurants	129	5.53	92.15
451212	News Dealers and Newsstands	0	4.47	96.61
722110	Full-Service Restaurants	293	1.52	98.14
453220	Gift, Novelty, and Souvenir Stores	209	1.22	99.36
541850	Display Advertising	5	0.55	99.91
812990	All Other Personal Services	57	0.06	99.97
522110	Commercial Banking	3	0.03	100.00

Source and Notes: See Table 4.1.

**Table 4.20. Concessions—Number of Listed DBE Establishments and Industry Weight (Excluding Car Rentals), by NAICS Code**

NAICS Industry Group	NAICS Description	Number of Listed DBEs	Industry Weight	Industry Weight (Cumulative)
722211	Limited-Service Restaurants	129	41.34	41.34
451212	News Dealers and Newsstands	0	33.38	74.72
722110	Full-Service Restaurants	293	11.37	86.09
453220	Gift, Novelty, and Souvenir Stores	209	9.13	95.22
541850	Display Advertising	5	4.09	99.31
812990	All Other Personal Services	57	0.48	99.79
522110	Commercial Banking	3	0.21	100.00

Source and Notes: See Table 4.1.

### 3. Verify Listed DBEs

#### a. Introduction

It is likely that information on DBEs from Dun & Bradstreet and other DBE directories is not correct in all instances. Phenomena such as ownership changes, associate or mentor status, recording errors, or even outright misrepresentation, will lead to businesses being listed as DBEs in a particular directory even though they may actually be owned by nonminority males. Other things equal, this type of error would cause our availability estimate to be biased upward from the actual availability number.

The second likelihood that must be addressed is that not all DBE businesses are necessarily listed—either in Dun & Bradstreet or in any of the other directories we collected. Such phenomena as geographic relocation, ownership changes, directory compilation errors, fear of stigmatization, and limitations in DBE outreach, could all lead to DBEs being unlisted. Other things equal, this type of error would cause our availability estimate to be biased downward from the actual availability number.

In our experience, we have found that both types of bias are not uncommon. For this Study, we corrected for the effect of these biases using statistical sampling procedures. We surveyed a large, stratified random sample of 5,000 establishments drawn from the Baseline Business Universe and measured how often they were misclassified (or unclassified) by race and/or gender.<sup>225</sup>

Strata were defined according to NAICS sectors and listed DBE status.<sup>226</sup> In the telephone survey, up to 10 attempts were made to reach each business and speak with an appropriate respondent. Attempts were scheduled for a mix of day and evening, weekdays and weekends, and appointments were scheduled for callbacks when necessary. Of the 5,000 firms in our sample, 1,580 (31.6%) were listed DBEs and 3,420 (68.4%) were unclassified by race or gender. Of these 5,000 firms, however, 569 (12.2%) were excluded as “unable to contact.” Exclusions resulted primarily from firms that were no longer in business.<sup>227</sup> Of the remaining 4,431 firms, 1,429 (32.3%) were listed DBEs and the remaining 3,002 establishments (67.7%) were unclassified.

The first part of the survey tested whether our sample of listed DBEs was correctly classified by race and/or gender. The second part of the survey tested whether the unclassified firms (that is, firms putatively owned by nonminority males) could all be properly classified as non-DBEs. Both elements of the survey are described in more detail below.<sup>228</sup>

### **b. Survey of Listed DBEs**

We selected a stratified random sample of 1,580 listed DBEs to verify the race and gender status of their owner(s). Of these, 151 (9.6 percent) were excluded as “unable to contact.” Of the 1,429 remaining establishments, we obtained complete interviews from 645, for a response rate of 45.1 percent.

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<sup>225</sup> A similar method was employed by the Federal Reserve Board to deal with similar problems in designing and implementing the National Survey of Small Business Finances for 1993 and 1998. *See* Haggerty, C., K. Grigorian, R. Harter and J. D. Wolken (2000).

<sup>226</sup> Thirteen separate industry strata were created based on NAICS code. All 13 strata were then split according to listed DBE status to create a total of 26 strata. Generally, listed DBEs were sampled at a higher rate than unclassified establishments.

<sup>227</sup> Putative DBEs were not more likely to be affected by this than putative non-DBEs.

<sup>228</sup> By “putative,” we mean the race and gender that we initially assigned to each firm based on the information provided by JMAA, by Dun & Bradstreet, by our master DBE directory, or from other sources.

Of the 645 establishments interviewed, 57 (8.8 percent) were actually owned by nonminority males. Misclassification varied by putative race and gender, as shown in Table 4.21. Misclassification was highest among putative Native American-owned firms, followed by putative nonminority Hispanic-owned firms, nonminority female-owned firms, Asian/Pacific Islander-owned firms, and finally African American-owned firms.<sup>229</sup>

**Table 4.21. Listed DBE Survey—Amount of Misclassification, by Putative DBE Type**

<b>Putative Race/Gender</b>	<b>Misclassification (Percentage Nonminority Male)</b>	<b>Misclassification (Percentage Other DBE Type)</b>	<b>Percentage Correctly Classified</b>	<b>Number of Businesses Interviewed</b>
African American (either gender)	8.79	4.40	86.81	182
Hispanic (either gender)	26.09	26.08	47.83	23
Asian/Pacific Islander (either gender)	13.04	8.70	78.26	23
Native American (either gender)	37.14	34.29	28.57	35
Nonminority Female	22.51	9.17	68.32	382
All DBE Types	19.22	9.77	71.01	645

Source: NERA telephone surveys.

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) Similar calculations, not shown here, were performed within each stratum.

Misclassification was also observed in every NAICS stratum, ranging from a high of 63.8 percent in NAICS 81 (Other Miscellaneous Services) to a low of 11.6 percent in NAICS 541 (Professional, Scientific, and Technical Services) as shown in Table 4.22.

The race and gender status of the listed DBEs responding to the survey was changed, if necessary, according to the survey results. For example, if a business originally listed as African American-owned was actually nonminority male-owned, then that business was counted as nonminority male-owned for purposes of calculating DBE availability.

But what about the remaining putatively African American-owned establishments that we did not interview? For these businesses, we estimate the race and gender of their ownership based on the amount of misclassification we observed among the putatively African American-owned firms

<sup>229</sup> For this study, “Black” or “African American” refers to an individual having origins in any of the Black racial groups of Africa; “Hispanic” refers to an individual of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race; “Asian” or “Asian/Pacific Islander” refers to an individual having origins in the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands; “Native American” refers to an individual having origins in any of the original peoples of North America or of Hawai’i.

that we did interview. In this example, our interviews show that 86.8 percent of these firms are indeed actually African American-owned, 8.8 percent are actually nonminority male-owned, 3.3 percent are nonminority female-owned, and 1.1 percent are actually owned by other minority groups (see Table 4.21). Therefore, we assign each of the remaining putative African American-owned firms an 86.8 percent probability of actually being African American-owned, an 8.8 percent probability of actually being nonminority male-owned, a 3.3 percent chance of being nonminority female-owned, and a 1.1 percent chance of being owned by persons from another minority group. We repeated this procedure within each sample stratum and for all putative race and gender categories.

**Table 4.22. Listed DBE Survey—Amount of Misclassification, by Industry Grouping**

Listed DBE By NAICS Code Grouping	Misclassification (Percentage Nonminority Male)	Percentage Actually DBE-owned	Number of Businesses Interviewed
NAICS 541	11.58	88.42	95
NAICS 236	14.29	85.71	56
NAICS 238	23.73	76.27	59
NAICS 237	13.89	86.11	36
NAICS 42	27.69	72.31	65
NAICS 333	25.00	75.00	4
NAICS 81	63.76	36.24	68
NAICS 33 (Balance)	28.57	71.43	28
NAICS 52	18.92	81.08	37
NAICS 5 (Balance)	14.29	85.71	35
NAICS 4 (Balance)	17.31	82.69	52
NAICS 3 (Balance)	13.64	86.36	44
Balance	10.61	89.39	66
All NAICS Codes	19.22	80.78	645

Source: See Table 4.17.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

#### 4. Verify Putative Non-DBEs

##### a. Survey of Unclassified Businesses

In the same manner as our survey of listed DBEs, we also examined unclassified businesses, i.e., any business that was not originally identified as a DBE, either in Dun & Bradstreet or in one or more of the other directories, and that would otherwise appear to be a non-DBE.

We selected a stratified random sample of 3,420 unclassified businesses from the Baseline Business Universe to verify the race and gender status of their owner(s). Of these, 418 (12.2 percent) were excluded as “unable to contact.” Of the 3,002 remaining establishments, we obtained 1,200 complete interviews, for a response rate of 40.0 percent.

As shown in Table 4.23, of the 1,200 establishments interviewed, 942 (78.5 percent) were owned by nonminority males. Clearly, a large majority of unclassified businesses in the Baseline Business Universe are nonminority male-owned. Nevertheless, the survey results indicate that 21.5 percent are *not* nonminority male-owned. Among the latter, the largest group was nonminority female-owned (12.3 percent), with descending size shares accounted for by African American-owned (6.9 percent), Asian/Pacific Islander-owned (1.25 percent), Hispanic-owned (0.75 percent), and Native American-owned (0.33 percent).

**Table 4.23. Unclassified Businesses Survey—By Race and Gender**

Verified Race/Gender	Number of Businesses Interviewed	Percentage of Total
Nonminority male	942	78.50
Nonminority female	147	12.25
African American (either gender)	83	6.92
Hispanic (either gender)	9	0.75
Asian/Pacific Islander (either gender)	15	1.25
Native American (either gender)	4	0.33
<b>TOTAL</b>	<b>1,200</b>	<b>100.00</b>

Source: See Table 4.21.

Notes: (1) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (2) Similar calculations, not shown here, were performed within each stratum.

As in the survey of Listed DBEs, misclassification was again observed within each industry stratum, as shown in Table 4.24. By industry grouping, NAICS 4 (Retail Trade/Transportation & Warehousing) had the lowest share of actual nonminority male-owned firms, at 64.2 percent, while NAICS 236 (Construction of Buildings) had the highest, at 90.6 percent.

As with the survey of listed DBEs, the race and gender status of unclassified businesses was changed, if necessary, according to the survey results. For example, if an interviewed business that was originally unclassified indicated that it was actually nonminority male-owned, then that business was counted as nonminority male-owned for purposes of the DBE availability calculation. If it indicated it was nonminority female-owned, it was counted as nonminority female, and so on. For unclassified businesses that were not interviewed, we assigned probability values (probability actually nonminority male-owned, probability actually nonminority female-owned, probability actually African American-owned, etc.) based on the interview responses. We again carried out the probability assignment procedure within each stratum.

**Table 4.24. Unclassified Businesses Survey—By Industry Grouping**

Listed DBE By NAICS Grouping	Percentage Actually Nonminority Male-owned	Percentage DBE	Number of Businesses Interviewed
NAICS 541	74.43	25.57	176
NAICS 236	90.57	9.43	53
NAICS 238	83.56	16.44	73
NAICS 237	90.48	9.52	126
NAICS 42	82.05	17.95	117
NAICS 333	82.86	17.14	70
NAICS 81	70.51	29.49	78
NAICS 33 (Balance)	84.48	15.52	116
NAICS 52	84.80	15.20	125
NAICS 5 (Balance)	41.18	58.82	17
NAICS 4 (Balance)	64.18	35.82	67
NAICS 3 (Balance)	71.05	28.95	114
Balance	64.71	35.29	68
All NAICS Codes	78.50	21.50	1,200

Source: See Table 4.17.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

## 5. Understanding “Capacity”

As noted in the beginning of this chapter, some observers, primarily opponents of efforts to address discrimination in contracting, have argued that, in order to be accurate, availability estimates must be adjusted for “capacity.” These assertions are rarely accompanied by specific suggestions about how such adjustments could be made consistent with professional social science standards. This Study does adjust for certain appropriate characteristics of firms related to capacity (such as industry affiliation, geographic location, owner labor market experience, and educational attainment); however, we are careful to not adjust for capacity factors that are themselves likely to be influenced by discrimination. In our view, all of the “capacity” indicators recommended by program opponents (e.g., firm age, annual individual firm revenues, number of employees, largest contract received, bonding limits) are subject to the impact of discrimination.

Further, the reality is that large, adverse statistical disparities between minority-owned or women-owned businesses and nonminority male-owned businesses have been documented in numerous research studies and reports since *Croson*.<sup>230</sup> Business outcomes, however, can be

<sup>230</sup> See Enchautegui, et al. (1996).

influenced by multiple factors, and it is important that disparity studies examine the likelihood of whether discrimination is an important contributing factor to observed disparities.

Moreover, terms such as “capacity,” “qualifications,” and “ability,” are not well defined in any statistical sense. Does “capacity” mean the level of annual individual firm revenues, employment size, bonding limits, or number of contracts bid or awarded? Does “qualified” or “able” mean possession of a business license, certain amounts of training, types of work experience, or the number of contracts a firm can perform at a given moment? What mix of business attributes properly reflects “capacity”? Does the meaning of such terms differ from industry to industry, locality to locality, or through time? Where and how might such data be reliably gathered? Even if capacity is well-defined and adequate data are gathered, when measuring the existence of discrimination, the statistical method used should not improperly limit the availability measure by incorporating factors that are themselves impacted by discrimination, such as firm age, annual individual firm revenues, bonding limits, or numbers of employees.

Consider an extreme example where discrimination has prevented the emergence of any minority owned firms. Suppose that racial discrimination was ingrained in a city's construction market. As a result, few minority construction employees are given the opportunity to gain managerial experience in the business; minorities who do end up starting construction firms are denied the opportunity to work as subcontractors for nonminority prime contractors; and nonminority prime contractors refuse to work with minority firms and put pressure on bonding companies and banks to prevent minority owned construction firms from securing bonding and capital. In this example, discrimination has prevented the emergence of a minority highway construction industry with “capacity.” Those M/WBEs that exist at all will be smaller and less experienced and have lower annual individual firm revenues, bonding limits, and employees (i.e., “capacity”) because of discrimination than firms that have benefited from the exclusionary system.

Using annual individual firm revenues as the measure of qualifications illustrates the point. If DBEs are subject to market area discrimination, their annual individual firm revenues will be smaller than nonminority, male-owned businesses because they will be less successful at obtaining work. Annual individual firm revenues measure the extent to which a firm has succeeded in the market area, perhaps in spite of discrimination—it does not measure the ability to succeed in the absence of discrimination and should not be used to evaluate the effects of discrimination.

Therefore, focusing on the “capacity” of businesses in terms of employment, annual individual firm revenues, bonding limits, number of trucks, and so forth, is simply wrong as a matter of economics because it can obscure the existence of discrimination. A truly “effective” discriminatory system would lead to a finding of no “capacity,” and under the “capacity” approach, a finding of no discrimination. Excluding firms from an availability measure based on their “capacity” in a discriminatory market merely affirms the results of discrimination rather than ameliorating them. A capacity requirement could preclude JMAA from doing anything to rectify its passive participation through public dollars in a clearly discriminatory system. The capacity argument fails to acknowledge that discrimination has obstructed the emergence of “qualified, willing, and able” minority firms. Without such firms, there can be no statistical disparity.

Further, in dynamic business environments, and especially in the construction sector, such “qualifications” or “capacity” can be obtained relatively easily. It is well known that small construction companies can expand rapidly as needs arise by hiring workers and renting equipment, and many general contractors subcontract the majority of a project. Firms grow quickly when demand increases and shrink quickly when demand decreases. Subcontracting is one important source of this elasticity, as has been noted by several academic studies.<sup>231</sup> Other industry sectors, especially in this era of Internet commerce and independent contractors, can also quickly grow or shrink in response to demand.

Finally, even where “capacity”-type factors have been controlled for in statistical analyses, results consistent with business discrimination are still typically observed. For example, large and statistically significant differences in commercial loan denial rates between minority and nonminority firms are evident throughout the country, even when detailed balance sheet and creditworthiness measures are held constant.<sup>232</sup> Similarly, economists using decennial census data have demonstrated that statistically significant disparities in business formation and business owner earnings between minorities and nonminorities remain even after controlling for a host of additional relevant factors, including educational achievement, labor market experience, marital status, disability status, veteran status, interest and dividend income, labor market attachment, industry, geographic location, and local labor market variables such as the unemployment rate, population growth rate, government employment rate, or per capita income.<sup>233</sup>

To summarize, the statistical analysis of the availability of minority firms compared to nonminority firms to examine the existence and effects of discrimination in disparity studies should not adjust for inappropriate “capacity” factors because:

- “Capacity” has been ill-defined; and reliable data for measurement are generally unavailable;
- Small firms, particularly in the construction industry, are highly elastic with regard to ability to perform;
- Many disparity studies have shown that even when “capacity” and “qualifications”-type factors are held constant in statistical analyses, evidence of disparate impact against DBE and DBE firms persists; and
- Most important, identifiable indicators of “capacity” are themselves impacted by discrimination.

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<sup>231</sup> See Bourdon and Levitt (1980); *see also* Eccles (1981); *and* Gould (1980).

<sup>232</sup> See Wainwright (2008).

<sup>233</sup> Wainwright (2000).

### C. Estimates of DBE Availability by Detailed Race, Gender, and Industry

Top-level estimates of DBE availability appear below in Table 4.25. Four sets of weighted availability measures are provided for each of the four major procurement categories of Construction, AE-CRS, Services, and Commodities. The first set is based on award dollars for all contracts (rows 1, 5, 9 and 13). The second set is based on paid dollars for all contracts (rows 2, 6, 10, and 14). The third set is based on award dollars for federally-assisted contracts (rows 3, 7, 11, and 15). The fourth and final set is based on paid dollars for federally-assisted contracts (rows 4, 8, 12, and 16). In general, all four weighting procedures yield similar results.

**Table 4.25. Overall Estimated DBE Availability Percentages**

	African American	Hispanic	Asian/Pacific Islander	Native American	MBE	Non-minority Female	DBE	Non-DBE
<b>OVERALL (ALL CONTRACTS)</b>								
AWARD DOLLARS	10.10	1.20	0.78	0.81	12.89	14.48	27.36	72.64
PAID DOLLARS	10.36	1.21	0.78	0.74	13.10	14.36	27.46	72.54
<b>OVERALL (FEDERALLY-ASSISTED CONTRACTS)</b>								
AWARD DOLLARS	8.60	1.33	0.78	0.92	11.63	14.66	26.29	73.71
PAID DOLLARS	9.34	1.39	0.79	0.71	12.23	15.14	27.37	72.63
<b>CONSTRUCTION (ALL CONTRACTS)</b>								
AWARD DOLLARS	9.38	1.23	0.93	1.34	12.87	10.90	23.77	76.23
PAID DOLLARS	9.99	1.26	0.92	1.27	13.44	10.66	24.10	75.90
<b>CONSTRUCTION (FEDERALLY-ASSISTED CONTRACTS)</b>								
AWARD DOLLARS	6.96	1.12	0.99	1.48	10.56	11.71	22.27	77.73
PAID DOLLARS	7.79	1.15	1.07	1.22	11.23	11.68	22.92	77.08
<b>AE-CRS (ALL CONTRACTS)</b>								
AWARD DOLLARS	10.62	1.66	0.58	0.47	13.33	17.67	31.00	69.00
PAID DOLLARS	10.62	1.66	0.59	0.48	13.34	17.62	30.97	69.03
<b>AE-CRS (FEDERALLY-ASSISTED CONTRACTS)</b>								
AWARD DOLLARS	10.67	1.66	0.57	0.47	13.38	17.63	31.01	68.99
PAID DOLLARS	10.67	1.66	0.58	0.48	13.39	17.59	30.98	69.02

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	African American	Hispanic	Asian/Pacific Islander	Native American	MBE	Non-minority Female	DBE	Non-DBE
<b>SERVICES (ALL CONTRACTS)</b>								
AWARD DOLLARS	11.26	1.00	0.22	0.11	12.59	18.03	30.62	69.38
PAID DOLLARS	11.02	1.01	0.24	0.12	12.39	17.30	29.69	70.31
<b>SERVICES (FEDERALLY-ASSISTED CONTRACTS)</b>								
AWARD DOLLARS	9.96	1.57	0.12	0.11	11.75	17.12	28.88	71.12
PAID DOLLARS	10.35	1.55	0.23	0.17	12.30	16.37	28.67	71.33
<b>COMMODITIES (ALL CONTRACTS)</b>								
AWARD DOLLARS	9.65	0.84	2.69	0.35	13.54	21.00	34.54	65.46
PAID DOLLARS	9.66	0.84	2.69	0.35	13.53	21.02	34.56	65.44
<b>COMMODITIES (FEDERALLY-ASSISTED CONTRACTS)</b>								
AWARD DOLLARS	6.07	0.04	2.04	0.20	8.36	16.23	24.60	75.40
PAID DOLLARS	6.06	0.04	2.05	0.20	8.35	16.25	24.60	75.40
<b>CONCESSIONS</b>								
INCLUDING CAR RENTAL	6.97	3.16	6.22	1.09	17.43	20.71	38.15	61.85
EXCLUDING CAR RENTAL	9.16	4.15	8.17	1.43	22.92	16.12	39.05	60.95

Sources: Dun & Bradstreet; DBE business directory information compiled by NERA; Master Contract/ Subcontract Database.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

Overall, DBE availability in the construction sector is between 22.27 and 24.10 percent. Non-DBE availability is between 75.90 and 77.73 percent. Among DBEs, availability of African American-owned businesses is between 6.96 and 9.99 percent, availability of Hispanic-owned businesses is between 1.12 and 1.26 percent, availability of Asian/Pacific Islander-owned businesses is between 0.92 and 1.07 percent, and availability of Native American-owned businesses is between 1.22 and 1.48 percent. Availability of minority-owned businesses as a group is between 10.56 and 13.44 percent. Availability of nonminority female-owned businesses is between 10.66 and 11.71 percent.

Overall, DBE availability in the AE-CRS sector is between 30.97 and 31.01 percent. Non-DBE availability is between 68.99 and 69.03 percent. Among DBEs, availability of African American-owned businesses is between 10.62 and 10.67 percent, availability of Hispanic-owned businesses

is 1.66 percent, availability of Asian/Pacific Islander-owned businesses is between 0.57 and 0.59 percent, and availability of Native American-owned businesses is between 0.47 and 0.48 percent. Availability of minority-owned businesses as a group is between 13.33 and 13.39 percent. Availability of nonminority female-owned businesses is between 17.59 and 17.67 percent.

Overall, DBE availability in the Services sector is between 28.67 and 30.62 percent. Non-DBE availability is between 69.38 and 71.33 percent. Among DBEs, availability of African American-owned businesses is between 9.96 and 11.26 percent, availability of Hispanic-owned businesses is between 1.00 and 1.57 percent, availability of Asian/Pacific Islander-owned businesses is between 0.12 and 0.24 percent, and availability of Native American-owned businesses is between 0.11 and 0.17 percent. Availability of minority-owned businesses as a group is between 11.75 and 12.59 percent. Availability of nonminority female-owned businesses is between 16.37 and 18.03 percent.

Overall, DBE availability in the Commodities sector is between 24.60 and 34.56 percent. Non-DBE availability is between 65.44 and 75.40 percent. Among DBEs, availability of African American-owned businesses is between 6.06 and 9.66 percent, availability of Hispanic-owned businesses is between 0.04 and 0.84 percent, availability of Asian/Pacific Islander-owned businesses is between 2.04 and 2.69 percent, and availability of Native American-owned businesses is between 0.20 and 0.35 percent. Availability of minority-owned businesses as a group is between 8.35 and 13.54 percent. Availability of nonminority female-owned businesses is between 16.23 and 21.02 percent.

In Concessions, DBE availability is between 38.15 and 39.05 percent. Non-DBE availability is between 60.95 and 61.85 percent. Among DBEs, availability of African American-owned businesses is between 6.97 and 9.16 percent, availability of Hispanic-owned businesses is between 3.16 and 4.15 percent, availability of Asian/Pacific Islander-owned businesses is between 6.22 and 8.17 percent, and availability of Native American-owned businesses is between 1.09 and 1.43 percent. Availability of minority-owned businesses as a group is between 17.43 and 22.92 percent. Availability of nonminority female-owned businesses is between 16.12 and 20.71 percent.

Tables 4.26 through 4.35 present detailed estimates of DBE availability in JMAA's relevant market area for Construction, AE-CRS, Services, Commodities, and Concessions. For Construction, AE-CRS, Services, and Commodities, two tables are presented. The first provides availability for all JMAA contracts, weighted by dollars paid. The second provides availability for federally-assisted JMAA contracts, weighted by dollars paid. For Concessions, two tables are also presented, one using weights that include car rentals and one using weights that exclude car rentals. Both sets of tables generally provide similar results.

**Table 4.26. Detailed DBE Availability Percentages—Construction (All Contracts) (Dollars Paid)**

Detailed Industry Group	African American	Hispanic	Asian/Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Nonmetallic Mineral Mining and Quarrying (NAICS 2123)	9.69	4.26	8.25	1.59	16.85	40.64	59.36
Nonresidential Building Construction (NAICS 2362)	11.05	1.34	0.69	1.82	9.45	24.36	75.64
Utility System Construction (NAICS 2371)	2.56	0.41	1.38	0.00	12.31	16.66	83.34
Highway, Street, and Bridge Construction (NAICS 2373)	4.85	0.92	0.84	2.29	13.45	22.35	77.65
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	8.45	1.29	1.28	0.01	8.05	19.08	80.92
Building Equipment Contractors (NAICS 2382)	9.38	1.48	1.33	0.08	8.08	20.36	79.64
Building Finishing Contractors (NAICS 2383)	9.55	1.27	1.27	0.12	7.68	19.90	80.10
Other Specialty Trade Contractors (NAICS 2389)	11.48	1.63	1.39	0.42	10.23	25.15	74.85
Cement and Concrete Product Manufacturing (NAICS 3273)	7.93	0.00	1.49	0.65	22.16	32.23	67.77
Boiler, Tank, and Shipping Container Manufacturing (NAICS 3324)	2.48	0.32	0.00	0.32	20.55	23.68	76.32
Other General Purpose Machinery Manufacturing (NAICS 3339)	3.33	0.00	0.00	0.00	16.95	20.28	79.72
Electric Lighting Equipment Manufacturing (NAICS 3351)	2.70	0.52	6.67	0.52	28.43	38.83	61.17
Other Miscellaneous Manufacturing (NAICS 3399)	4.95	0.70	0.95	0.70	15.20	22.49	77.51
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	6.86	0.00	1.68	0.15	13.94	22.62	77.38
Electrical & Electronic Goods Merchant Whlse. (NAICS 4236)	5.02	0.00	1.67	0.19	15.77	22.66	77.34
Hardware, & Plumbing & Heating Eqpmt. & Supplies Merchant Whlse. (NAICS 4237)	4.72	0.00	1.63	0.08	12.30	18.73	81.27
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	5.46	0.00	1.66	0.16	14.86	22.13	77.87
General Freight Trucking (NAICS 4841)	8.71	0.05	2.99	0.02	26.61	38.38	61.62
Management, Scientific, and Technical Consulting Services (NAICS 5416)	12.56	1.68	0.00	0.21	19.53	33.97	66.03
Services to Buildings and Dwellings (NAICS 5617)	24.60	0.26	0.13	0.07	35.94	61.00	39.00

Source: See Table 4.25. Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

**Table 4.27. Detailed DBE Availability Percentages—Construction (Federally-Assisted Contracts) (Dollars Paid)**

Detailed Industry Group	African American	Hispanic	Asian/Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Nonmetallic Mineral Mining and Quarrying (NAICS 2123)	9.69	4.26	8.25	1.59	16.85	40.64	59.36
Nonresidential Building Construction (NAICS 2362)	11.05	1.34	0.69	1.82	9.45	24.36	75.64
Utility System Construction (NAICS 2371)	2.56	0.41	1.38	0.00	12.31	16.66	83.34
Highway, Street, and Bridge Construction (NAICS 2373)	4.85	0.92	0.84	2.29	13.45	22.35	77.65
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	7.81	1.28	1.28	0.00	8.58	18.95	81.05
Building Equipment Contractors (NAICS 2382)	9.42	1.47	1.34	0.08	8.34	20.65	79.35
Other Specialty Trade Contractors (NAICS 2389)	11.65	1.65	1.39	0.45	10.42	25.56	74.44
Cement and Concrete Product Manufacturing (NAICS 3273)	7.93	0.00	1.49	0.65	22.16	32.23	67.77
Other General Purpose Machinery Manufacturing (NAICS 3339)	3.38	0.00	0.00	0.00	16.60	19.98	80.02
Electric Lighting Equipment Manufacturing (NAICS 3351)	2.70	0.52	6.67	0.52	28.43	38.83	61.17
General Freight Trucking (NAICS 4841)	8.71	0.05	2.99	0.02	26.61	38.38	61.62

Source: See Table 4.25.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

**Table 4.28. Detailed DBE Availability Percentages—AE-CRS (All Contracts) (Dollars Paid)**

Detailed Industry Group	African American	Hispanic	Asian/Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Architectural, Engineering, and Related Services (NAICS 5413)	10.38	1.64	0.58	0.47	17.65	30.72	69.28
Management, Scientific, and Technical Consulting Services (NAICS 5416)	13.80	1.64	0.06	0.16	17.87	33.53	66.47
Advertising, Public Relations, and Related Services (NAICS 5418)	12.35	1.51	0.00	0.00	18.07	31.93	68.07
Remediation and Other Waste Management Services (NAICS 5629)	21.21	0.00	0.00	0.00	41.51	62.72	37.28
Museums, Historical Sites, and Similar Institutions (NAICS 7121)	9.19	4.38	8.76	1.46	11.86	35.65	64.35

Source: See Table 4.25.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

**Table 4.29. Detailed DBE Availability Percentages—AE-CRS (Federally-Assisted Contracts) (Dollars Paid)**

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Architectural, Engineering, and Related Services (NAICS 5413)	10.47	1.65	0.60	0.48	17.52	30.73	69.27
Management, Scientific, and Technical Consulting Services (NAICS 5416)	14.27	1.67	0.07	0.19	17.50	33.71	66.29
Advertising, Public Relations, and Related Services (NAICS 5418)	12.35	1.51	0.00	0.00	18.07	31.93	68.07

Source: See Table 4.25.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

**Table 4.30. Detailed DBE Availability Percentages—Services (All Contracts) (Dollars Paid)**

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Nonresidential Building Construction (NAICS 2362)	11.05	1.34	0.69	1.82	9.45	24.36	75.64
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)	9.03	1.29	1.29	0.02	7.27	18.89	81.11
Building Equipment Contractors (NAICS 2382)	9.40	1.48	1.33	0.08	8.19	20.48	79.52
Other Specialty Trade Contractors (NAICS 2389)	9.69	1.41	1.41	0.11	8.27	20.89	79.11
Printing and Related Support Activities (NAICS 3231)	10.65	0.00	1.66	0.74	21.47	34.53	65.47
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	7.13	0.00	0.00	0.00	16.88	24.01	75.99
Engine, Turbine, and Power Transmission Equipment Manufacturing (NAICS 3336)	5.08	0.00	0.00	0.00	10.16	15.24	84.76
Other General Purpose Machinery Manufacturing (NAICS 3339)	2.29	0.00	0.00	0.00	24.57	26.86	73.14
Audio and Video Equipment Manufacturing (NAICS 3343)	3.54	0.80	0.00	0.80	14.37	19.51	80.49
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)	8.82	0.46	0.00	0.46	9.96	19.70	80.30
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	4.87	0.00	1.69	0.10	12.96	19.62	80.38
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)	5.22	0.00	1.73	1.65	17.27	25.87	74.13
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	5.56	0.00	2.04	0.16	15.81	23.57	76.43
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)	8.13	0.00	2.95	0.00	27.24	38.32	61.68
Electronics and Appliance Stores (NAICS 4431)	7.75	0.00	3.23	0.00	28.13	39.12	60.88
Building Material and Supplies Dealers (NAICS 4441)	7.61	0.00	3.01	0.00	27.69	38.31	61.69
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)	7.43	0.00	3.04	0.00	29.83	40.30	59.70
Support Activities for Air Transportation (NAICS 4881)	9.07	0.00	5.09	0.00	25.35	39.50	60.50
Support Activities for Road Transportation (NAICS 4884)	8.19	0.00	2.98	0.00	27.84	39.01	60.99

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Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)	22.16	0.30	0.30	0.00	40.44	63.20	36.80
Software Publishers (NAICS 5112)	22.63	1.23	0.00	0.00	38.10	61.97	38.03
Motion Picture and Video Industries (NAICS 5121)	26.31	0.00	0.00	0.00	35.49	61.80	38.20
Wired Telecommunications Carriers (NAICS 5171)	24.94	0.00	0.00	0.00	36.11	61.05	38.95
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)	23.65	0.00	0.00	0.00	36.25	59.89	40.11
Data Processing, Hosting, and Related Services (NAICS 5182)	24.79	0.00	0.00	0.00	37.04	61.83	38.17
Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)	7.71	0.00	0.21	0.00	11.48	19.40	80.60
Lessors of Real Estate (NAICS 5311)	23.44	0.00	0.24	0.00	35.82	59.49	40.51
Offices of Real Estate Agents and Brokers (NAICS 5312)	22.29	0.15	0.04	0.04	40.10	62.62	37.38
Activities Related to Real Estate (NAICS 5313)	22.71	0.00	0.31	0.00	39.73	62.75	37.25
Legal Services (NAICS 5411)	9.55	1.58	0.00	0.08	17.69	28.90	71.10
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)	9.11	1.59	0.00	0.00	18.25	28.95	71.05
Architectural, Engineering, and Related Services (NAICS 5413)	11.52	1.58	0.22	0.86	17.31	31.51	68.49
Specialized Design Services (NAICS 5414)	11.28	1.97	0.00	0.00	21.47	34.72	65.28
Computer Systems Design and Related Services (NAICS 5415)	15.01	1.90	1.21	0.60	22.05	40.77	59.23
Management, Scientific, and Technical Consulting Services (NAICS 5416)	12.90	1.69	0.05	0.25	19.30	34.18	65.82
Scientific Research and Development Services (NAICS 5417)	10.65	1.48	0.00	0.00	20.70	32.84	67.16
Advertising, Public Relations, and Related Services (NAICS 5418)	8.38	2.19	0.00	0.96	31.38	42.92	57.08
Other Professional, Scientific, and Technical Services (NAICS 5419)	8.99	1.58	0.00	0.06	19.36	29.99	70.01
Office Administrative Services (NAICS 5611)	24.27	0.39	0.26	0.13	35.44	60.49	39.51
Facilities Support Services (NAICS 5612)	22.74	3.92	0.00	0.00	36.14	62.80	37.20
Investigation and Security Services (NAICS 5616)	23.58	1.16	0.00	0.58	36.45	61.77	38.23

D/M/WBE Availability in JMAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Services to Buildings and Dwellings (NAICS 5617)	24.99	0.33	0.13	0.04	36.56	62.06	37.94
Other Support Services (NAICS 5619)	23.58	0.01	0.02	0.00	35.40	59.00	41.00
Other Schools and Instruction (NAICS 6116)	12.44	4.03	7.86	1.78	18.86	44.97	55.03
Performing Arts Companies (NAICS 7111)	12.28	3.94	7.28	1.72	24.26	49.48	50.52
Independent Artists, Writers, and Performers (NAICS 7115)	11.06	4.47	8.06	1.59	17.23	42.39	57.61
Traveler Accommodation (NAICS 7211)	8.50	4.07	13.72	1.54	14.24	42.07	57.93
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)	17.32	1.58	1.27	1.20	9.96	31.32	68.68
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Main	17.28	1.25	1.47	1.60	9.49	31.08	68.92
Drycleaning and Laundry Services (NAICS 8123)	16.42	1.14	2.12	1.34	12.51	33.53	66.47
Other Personal Services (NAICS 8129)	20.56	1.58	1.21	1.21	8.48	33.03	66.97
Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139)	17.13	1.28	1.26	1.26	8.83	29.76	70.24

Source: See Table 4.25.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

**Table 4.31. Detailed DBE Availability Percentages—Services (Federally-Assisted Contracts) (Dollars Paid)**

Detailed Industry Group	African American	Hispanic	Asian/Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Other Specialty Trade Contractors (NAICS 2389)	9.69	1.41	1.41	0.11	8.27	20.89	79.11
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)	22.05	0.64	0.64	0.00	39.84	63.16	36.84
Legal Services (NAICS 5411)	9.55	1.58	0.00	0.08	17.69	28.90	71.10
Management, Scientific, and Technical Consulting Services (NAICS 5416)	13.14	1.69	0.00	0.24	19.71	34.78	65.22
Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139)	17.13	1.28	1.26	1.26	8.83	29.76	70.24

Source: See Table 4.25.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

**Table 4.32. Detailed DBE Availability Percentages—Commodities (All Contracts) (Dollars Paid)**

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Building Equipment Contractors (NAICS 2382)	9.37	1.49	1.32	0.08	7.99	20.26	79.74
Bakeries and Tortilla Manufacturing (NAICS 3118)	9.73	0.00	2.71	0.64	30.54	43.62	56.38
Other Food Manufacturing (NAICS 3119)	7.02	0.00	1.75	0.88	19.30	28.95	71.05
Other Textile Product Mills (NAICS 3149)	12.08	0.00	1.67	0.52	38.87	53.14	46.86
Cut and Sew Apparel Manufacturing (NAICS 3152)	7.02	0.00	1.75	0.88	19.30	28.95	71.05
Converted Paper Product Manufacturing (NAICS 3222)	7.02	0.00	1.75	0.88	19.30	28.95	71.05
Printing and Related Support Activities (NAICS 3231)	8.96	0.22	1.60	0.82	24.24	35.84	64.16
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)	5.04	0.00	1.35	0.58	24.76	31.73	68.27
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)	10.31	0.00	1.61	5.03	21.92	38.87	61.13
Plastics Product Manufacturing (NAICS 3261)	9.16	0.00	3.20	3.15	20.33	35.83	64.17
Rubber Product Manufacturing (NAICS 3262)	6.20	0.00	1.68	0.71	23.09	31.67	68.33
Architectural and Structural Metals Manufacturing (NAICS 3323)	3.05	0.70	0.00	0.70	11.99	16.44	83.56
Other Fabricated Metal Product Manufacturing (NAICS 3329)	2.81	0.70	0.00	0.70	15.84	20.05	79.95
Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)	2.38	0.00	0.00	0.00	15.08	17.46	82.54
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)	5.95	0.00	0.00	0.00	12.32	18.27	81.73
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS 3339)	3.81	0.00	0.00	0.00	24.29	28.10	71.90
Other General Purpose Machinery Manufacturing (NAICS 3339)	8.19	0.00	0.00	0.00	18.42	26.61	73.39
Computer and Peripheral Equipment Manufacturing (NAICS 3341)	12.41	0.60	0.00	0.60	17.24	30.86	69.14
Communications Equipment Manufacturing (NAICS 3342)	11.54	0.63	0.00	0.63	14.40	27.21	72.79

D/M/WBE Availability in JMAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)	8.82	0.46	0.00	0.46	9.96	19.70	80.30
Electric Lighting Equipment Manufacturing (NAICS 3351)	27.59	0.65	0.00	0.65	7.76	36.64	63.36
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)	3.45	0.86	0.00	0.86	10.34	15.52	84.48
Aerospace Product and Parts Manufacturing (NAICS 3364)	2.46	0.62	14.29	0.62	21.67	39.66	60.34
Other Transportation Equipment Manufacturing (NAICS 3369)	3.45	0.86	0.00	0.86	10.34	15.52	84.48
Medical Equipment and Supplies Manufacturing (NAICS 3391)	2.79	0.64	0.00	0.64	16.39	20.46	79.54
Other Miscellaneous Manufacturing (NAICS 3399)	5.11	0.69	0.81	0.69	15.29	22.60	77.40
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)	4.86	0.00	1.69	0.10	13.05	19.69	80.31
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)	6.20	0.00	1.65	0.59	13.64	22.08	77.92
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)	5.68	0.00	1.64	0.12	14.57	22.01	77.99
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)	6.27	0.00	1.67	0.13	14.58	22.65	77.35
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)	4.89	0.00	1.65	0.04	11.48	18.06	81.94
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	5.73	0.00	1.67	0.16	14.72	22.28	77.72
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)	4.93	0.00	1.67	0.09	13.24	19.93	80.07
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	5.70	0.00	2.20	0.18	16.52	24.61	75.39
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)	5.23	0.00	1.68	0.12	14.35	21.38	78.62
Paper and Paper Product Merchant Wholesalers (NAICS 4241)	10.93	0.00	1.65	0.42	19.48	32.48	67.52

D/M/WBE Availability in JMAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Apparel, Piece Goods, and Notions Merchant Wholesalers (NAICS 4243)	6.88	0.00	1.66	0.10	12.80	21.44	78.56
Grocery and Related Product Merchant Wholesalers (NAICS 4244)	7.13	0.00	2.10	0.10	13.66	22.99	77.01
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)	4.86	0.00	1.68	0.09	13.16	19.79	80.21
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)	5.41	0.00	1.91	0.11	13.86	21.28	78.72
Automobile Dealers (NAICS 4411)	7.96	0.00	3.08	0.00	26.40	37.44	62.56
Other Motor Vehicle Dealers (NAICS 4412)	7.39	0.00	2.99	0.00	28.52	38.91	61.09
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)	8.15	0.00	2.94	0.00	26.61	37.69	62.31
Furniture Stores (NAICS 4421)	7.92	0.00	3.12	0.04	30.17	41.25	58.75
Electronics and Appliance Stores (NAICS 4431)	7.77	0.00	3.15	0.02	27.87	38.81	61.19
Building Material and Supplies Dealers (NAICS 4441)	7.60	0.00	2.99	0.02	28.66	39.27	60.73
Clothing Stores (NAICS 4481)	10.02	0.13	2.96	0.00	33.38	46.48	53.52
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)	8.43	0.00	2.97	0.00	29.22	40.62	59.38
Department Stores (NAICS 4521)	7.45	0.00	3.01	0.00	27.08	37.54	62.46
Florists (NAICS 4531)	8.22	0.00	3.10	0.00	40.53	51.85	48.15
Office Supplies, Stationery, and Gift Stores (NAICS 4532)	8.25	0.00	2.90	0.79	32.24	44.19	55.81
Used Merchandise Stores (NAICS 4533)	7.59	0.00	3.19	0.05	33.32	44.15	55.85
Other Miscellaneous Store Retailers (NAICS 4539)	7.60	0.85	3.08	0.00	29.66	41.20	58.80
Direct Selling Establishments (NAICS 4543)	7.46	0.00	2.99	0.00	25.37	35.82	64.18
General Freight Trucking (NAICS 4841)	8.71	0.05	2.99	0.02	26.61	38.38	61.62
Support Activities for Air Transportation (NAICS 4881)	8.95	0.00	4.94	0.02	25.39	39.30	60.70
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)	22.20	0.13	0.13	0.00	40.79	63.26	36.74
Software Publishers (NAICS 5112)	22.63	1.23	0.00	0.00	38.10	61.97	38.03
Wired Telecommunications Carriers (NAICS 5171)	24.94	0.00	0.00	0.00	36.11	61.05	38.95

D/M/WBE Availability in JMAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)	23.65	0.00	0.00	0.00	36.25	59.89	40.11
Data Processing, Hosting, and Related Services (NAICS 5182)	24.79	0.00	0.00	0.00	37.04	61.83	38.17
Automotive Equipment Rental and Leasing (NAICS 5321)	17.62	0.00	0.00	0.00	28.62	46.23	53.77
Consumer Goods Rental (NAICS 5322)	22.64	0.00	0.00	0.00	38.57	61.21	38.79
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)	23.26	0.06	0.00	0.00	38.45	61.77	38.23
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works) (NAICS 5331)	22.79	0.00	0.00	0.00	37.28	60.07	39.93
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)	10.08	1.37	0.00	0.00	24.10	35.56	64.44
Architectural, Engineering, and Related Services (NAICS 5413)	10.01	1.51	0.28	0.28	18.85	30.92	69.08
Computer Systems Design and Related Services (NAICS 5415)	15.01	1.90	1.21	0.60	22.05	40.77	59.23
Management, Scientific, and Technical Consulting Services (NAICS 5416)	11.96	1.68	0.04	0.16	19.67	33.51	66.49
Advertising, Public Relations, and Related Services (NAICS 5418)	8.51	2.03	0.00	0.77	30.41	41.72	58.28
Other Professional, Scientific, and Technical Services (NAICS 5419)	9.40	1.72	0.00	0.05	16.93	28.10	71.90
Investigation and Security Services (NAICS 5616)	23.58	1.16	0.00	0.58	36.45	61.77	38.23
Services to Buildings and Dwellings (NAICS 5617)	24.60	0.26	0.13	0.07	35.94	61.00	39.00
Other Support Services (NAICS 5619)	23.58	0.01	0.02	0.00	35.40	59.00	41.00
Waste Collection (NAICS 5621)	5.00	0.00	0.00	0.00	85.00	90.00	10.00
Remediation and Other Waste Management Services (NAICS 5629)	22.65	0.00	0.00	0.00	39.79	62.44	37.56
Other Ambulatory Health Care Services (NAICS 6219)	9.22	4.33	8.68	1.49	13.32	37.05	62.95
Other Amusement and Recreation Industries (NAICS 7139)	9.49	4.27	8.34	1.56	15.91	39.57	60.43
Traveler Accommodation (NAICS 7211)	8.50	4.07	13.72	1.54	14.24	42.07	57.93

## D/M/WBE Availability in JMAA's Market Area

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Full-Service Restaurants (NAICS 7221)	9.38	4.74	8.40	1.56	15.81	39.88	60.12
Limited-Service Eating Places (NAICS 7222)	9.21	4.34	8.62	1.53	14.48	38.18	61.82
Special Food Services (NAICS 7223)	10.33	4.36	8.31	1.58	18.12	42.71	57.29
Automotive Repair and Maintenance (NAICS 8111)	17.61	1.26	1.26	1.34	9.67	31.14	68.86
Drycleaning and Laundry Services (NAICS 8123)	17.83	1.33	1.31	1.18	10.50	32.16	67.84
Other Personal Services (NAICS 8129)	17.46	1.59	1.32	1.13	11.67	33.16	66.84
Civic and Social Organizations (NAICS 8134)	17.25	1.30	1.26	1.26	9.05	30.12	69.88

Source: See Table 4.25.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

**Table 4.33. Detailed DBE Availability Percentages—Commodities (Federally-Assisted Contracts) (Dollars Paid)**

Detailed Industry Group	African American	Hispanic	Asian/ Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
Other General Purpose Machinery Manufacturing (NAICS 3339)	8.24	0.00	0.00	0.00	18.43	26.67	73.33
Communications Equipment Manufacturing (NAICS 3342)	11.64	0.63	0.00	0.63	14.47	27.38	72.62
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)	3.45	0.86	0.00	0.86	10.34	15.52	84.48
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)	4.86	0.00	1.69	0.10	13.05	19.69	80.31
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)	5.02	0.00	1.67	0.19	15.77	22.66	77.34
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)	5.84	0.00	2.28	0.18	16.64	24.95	75.05

Source: See Table 4.25.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

**Table 4.34. Detailed DBE Availability Percentages—Concessions (Including Car Rental)**

Detailed Industry Group	African American	Hispanic	Asian/Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
News Dealers and Newsstands (NAICS 451212)	7.46	0.00	2.99	0.00	25.37	35.82	64.18
Gift, Novelty, and Souvenir Stores (NAICS 453220)	7.69	0.09	3.15	0.00	34.53	45.46	54.54
Commercial Banking (NAICS 522110)	6.30	0.00	0.01	0.00	8.76	15.08	84.92
Passenger Car Rental (Majors Only) (NAICS 532111)	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Display Advertising (NAICS 541850)	10.52	1.40	0.00	0.00	21.91	33.83	66.17
Full-Service Restaurants (NAICS 722110)	9.38	4.74	8.40	1.56	15.81	39.88	60.12
Limited-Service Restaurants (NAICS 722211)	9.21	4.34	8.62	1.53	14.48	38.18	61.82
All Other Personal Services (NAICS 812990)	17.46	1.59	1.32	1.13	11.67	33.16	66.84

Source: See Table 4.25.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

**Table 4.35. Detailed DBE Availability Percentages—Concessions (Excluding Car Rental)**

Detailed Industry Group	African American	Hispanic	Asian/Pacific Islander	Native American	Non-minority Female	DBE	Non-DBE
News Dealers and Newsstands (NAICS 451212)	7.46	0.00	2.99	0.00	25.37	35.82	64.18
Gift, Novelty, and Souvenir Stores (NAICS 453220)	7.69	0.09	3.15	0.00	34.53	45.46	54.54
Commercial Banking (NAICS 522110)	6.30	0.00	0.01	0.00	8.76	15.08	84.92
Display Advertising (NAICS 541850)	10.52	1.40	0.00	0.00	21.91	33.83	66.17
Full-Service Restaurants (NAICS 722110)	9.38	4.74	8.40	1.56	15.81	39.88	60.12
Limited-Service Restaurants (NAICS 722211)	9.21	4.34	8.62	1.53	14.48	38.18	61.82
All Other Personal Services (NAICS 812990)	17.46	1.59	1.32	1.13	11.67	33.16	66.84

Source: See Table 4.25.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

## V. Market-Based Disparities in Business Formation and Business Owner Earnings

### A. Introduction

In this chapter, we examine disparities in business formation and earnings principally in the private sector, where contracting activities are generally *not* subject to DBE or other affirmative action requirements. Statistical examination of disparities in the private sector of the relevant geographic market area is important for several reasons. First, to the extent that discriminatory practices by contractors, suppliers, insurers, lenders, customers, and others limit the ability of DBEs to compete, those practices will impact the larger private sector as well as the public sector. Second, examining the utilization of DBEs in the private sector provides an indicator of the extent to which DBEs are used in the absence of race- and gender-conscious efforts, since few firms in the private sector make such efforts. Third, the Supreme Court in *Croson* and other courts acknowledged that state and local governments have a constitutional duty not to contribute to the perpetuation of discrimination in the private sector of their relevant geographic and product markets.

After years of comparative neglect, research on the economics of entrepreneurship—especially upon self-employment—has expanded in the last 20 years.<sup>234</sup> As a result, there is now a good deal of agreement in the literature on the microeconomic correlates of self-employment.<sup>235</sup> In the U.S., it appears that self-employment rises with age, is higher among men than women, and higher among non-minorities than minorities. The least educated have the highest probability of being self-employed. However, evidence is also found in the U.S. that the most highly educated also have relatively high probabilities. On average, however, increases in educational attainment are generally found to lead to increases in the probability of being self-employed. A higher number of children in the family increases the likelihood of (male) self-employment. Workers in agriculture and construction are also especially likely to be self-employed.

There has been relatively less work on how institutional factors influence self-employment. Such work that has been conducted includes examining the role of minimum wage legislation (Blau, 1987), immigration (Fairlie and Meyer, 1998 and 2003; Olson, Zuiker and Montalto, 2000; Mora

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<sup>234</sup> Microeconomic work includes Fuchs (1982), Borjas and Bronars (1989), Evans and Jovanovic (1989), Evans and Leighton (1989), Fairlie and Meyer (1996, 1998), Reardon (1998), Fairlie (1999), Wainwright (2000), Blanchflower and Wainwright (2005), and Blanchflower (2009) for the United States; Rees and Shah (1986), Pickles and O’Farrell (1987), Blanchflower and Oswald (1990, 1998), Meager (1992), Taylor (1996), Robson (1998a, 1998b), and Blanchflower and Shadforth (2007) for the UK; DeWit and van Winden (1990) for the Netherlands; Alba-Ramirez (1994) for Spain; Bernhardt (1994), Schuetze (1998), Arai (1997), Lentz and Laband (1990), and Kuhn and Schuetze (1998) for Canada; Laferrere and McEntee (1995) for France; Blanchflower and Meyer (1994) and Kidd (1993) for Australia; and Foti and Vivarelli (1994) for Italy. There are also several theoretical papers including Kihlstrom and Laffont (1979), Kanbur (1990), Holmes and Schmitz (1990), Coate and Tennyson (1992), and Cagetti and DeNardi (2006), plus a few papers that draw comparisons across countries, i.e., Schuetze (1998) for Canada and the U.S., Blanchflower and Meyer (1994) for Australia and the U.S., Alba-Ramirez (1994) for Spain and the United States, and Acs and Evans (1994), Blanchflower (2000), Blanchflower, Oswald, and Stutzer (2001), and Blanchflower and Oswald (2008) for many countries.

<sup>235</sup> Parker (2004) and Aronson (1991) provide good overviews.

and Davila, 2006; Robles and Cordero-Gúzman, 2007),<sup>236</sup> immigration policy (Borjas and Bronars, 1989), and retirement policies (Quinn, 1980). Studies by Long (1982), Blau (1987), and Schuetze (1998), have considered the role of taxes.<sup>237</sup> A number of other studies have also considered the cyclical aspects of self-employment and in particular how movements of self-employment are correlated with movements in unemployment. Meager (1992) provides a useful summary of much of this work.<sup>238</sup>

Blanchflower, Oswald and Stutzer (2001) found that there is a strikingly large latent desire to own a business. There exists frustrated entrepreneurship on a huge scale in the U.S. and other Organization for Economic Co-operation and Development (OECD) countries.<sup>239</sup> In the U.S., 7 out of 10 people say they would prefer to be self-employed. This compares to an actual proportion of self-employed people in 2001 of 7.3 percent of the civilian labor force, which also shows that the proportion of the labor force that is self-employed has declined steadily since 1990 following a small increase in the rate from 1980 to 1990. This raises an important question. Why do so few individuals in the U.S. and OECD countries manage to translate their preferences into action? Lack of start-up capital is one likely explanation. This factor is commonly cited by small-business managers themselves (Blanchflower and Oswald, 1998). There is also econometric evidence that confirms this barrier. Holding other influences constant, people who

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<sup>236</sup> Fairlie and Meyer (1998) found that immigration had no statistically significant impact at all on African American self-employment. In a subsequent paper, Fairlie and Meyer (2003) found that self-employed immigrants did displace self-employed native non-African Americans. They found that immigration has a large negative effect on the probability of self-employment among native non-African Americans, although, surprisingly, they found that immigrants increase native self-employment earnings.

<sup>237</sup> In an interesting study pooling individual level data for the U.S. and Canada from the Current Population Survey and the Survey of Consumer Finances, respectively, Schuetze (1998) finds that increases in income taxes have large and positive effects on the male self-employment rate. He found that a 30 percent increase in taxes generated a rise of 0.9 to 2.0 percentage points in the male self-employment rate in Canada compared with a rise of 0.8 to 1.4 percentage points in the U.S. over 1994 levels.

<sup>238</sup> Evans and Leighton (1989) found that nonminority men who are unemployed are nearly twice as likely as wage workers to enter self-employment. Bogenhold and Staber (1991) also find evidence that unemployment and self-employment are positively correlated. Blanchflower and Oswald (1990) found a strong negative relationship between regional unemployment and self-employment for the period 1983-1989 in the U.K. using a pooled cross-section time-series data set. Blanchflower and Oswald (1998) confirmed this result, finding that the log of the county unemployment rate entered negatively in a cross-section self-employment model for young people age 23 in 1981 and for the same people aged 33 in 1991. Taylor (1996) confirmed this result using data from the British Household Panel Study of 1991, showing that the probability of being self-employed rises when expected self-employment earnings increase relative to employee earnings, i.e., when unemployment is low. Acs and Evans (1994) found evidence from an analysis of a panel of countries that the unemployment rate entered negatively in a fixed effect and random effects formulation. However, Schuetze (1998) found that for the U.S. and Canada the elasticity of the male self-employment rate with respect to the unemployment rate was considerably smaller than found for the effect from taxes discussed above. The elasticity of self-employment associated with the unemployment rate is about 0.1 in both countries using 1994 figures. A decrease of 5 percentage points in the unemployment rate in the U.S. (about the same decline occurred from 1983-1989) leads to about a 1 percentage point decrease in self-employment. Blanchflower (2000) found that there is generally a negative relationship between the self-employment rate and the unemployment rate. It does seem then that there is some disagreement in the literature on whether high unemployment acts to discourage self-employment because of the lack of available opportunities or encourage it because of the lack of viable alternatives.

<sup>239</sup> The OECD is an international organization of those developed countries that accept the principles of representative democracy and a free market economy. There are currently 30 full members.

inherit cash, who win the lottery, or who have large family assets, are all more likely both to set up and sustain a lasting small business. By contrast, childhood personality test-scores turn out to have almost no predictive power about which persons will be running their own businesses as adults (Blanchflower and Oswald, 1998).

One primary impediment to entrepreneurship among minorities is lack of capital. In work based on U.S. micro data at the level of the individual, Evans and Leighton (1989), and Evans and Jovanovic (1989), have argued formally that entrepreneurs face liquidity constraints. The authors use the National Longitudinal Survey of Young Men for 1966-1981, and the Current Population Surveys for 1968-1987. The key test shows that, all else remaining equal, people with greater family assets are more likely to switch to self-employment from employment. This asset variable enters econometric equations significantly and with a quadratic form. Although Evans and his collaborators draw the conclusion that capital and liquidity constraints bind, this claim is open to the objection that other interpretations of their correlation are feasible. One possibility, for example, is that inherently acquisitive individuals both start their own businesses and forego leisure to build up family assets. In this case, there would be a correlation between family assets and movement into self-employment even if capital constraints did not exist. A second possibility is that the correlation between family assets and the movement to self-employment arises because children tend to inherit family firms. Blanchflower and Oswald (1998), however, find that the probability of self-employment depends positively upon whether the individual ever received an inheritance or gift.<sup>240</sup> Moreover, when directly questioned in interview surveys, potential entrepreneurs say that raising capital is their principal problem. Work by Holtz-Eakin, Joulfaian and Harvey (1994a, 1994b) drew similar conclusions using different methods on U.S. data, examining flows into and out of self-employment and finding that inheritances both raise entry and slow exit. In contrast, Hurst and Lusardi (2004), citing evidence from the U.S. *Panel Study of Income Dynamics*, claim to show that wealth is not a significant determinant of entry into self-employment. In response, however, Fairlie and Krashinsky (2006) have demonstrated that when the sample is split into two segments—those who enter self-employment after job loss and those who do not—the strong correlation between assets and rate of entry business formation is evident in both segments.

The work of Black, et al. (1996) for the United Kingdom discovers an apparently powerful role for house prices (through its impact on equity withdrawal) in affecting the supply of small new firms. Cowling and Mitchell (1997) find a similar result. Again, these are both suggestive of capital constraints. Finally, Lindh and Ohlsson (1996) adopt the Blanchflower-Oswald procedure and provide complementary evidence for Sweden. Bernhardt (1994), in a study for Canada using data from the 1981 Social Change in Canada Project, also found evidence that capital constraints appear to bind. Using the 1991 French Household Survey of Financial Assets, Laferrere and McEntee (1995) examined the determinants of self-employment using data on intergenerational transfers of wealth, education, informal human capital, and a range of demographic variables.

They also find evidence of the importance played by the family in the decision to enter self-employment. Intergenerational transfers of wealth, familial transfers of human capital, and the

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<sup>240</sup> This emerges from British data, the National Child Development Study; a birth cohort of children born in March 1958 who have been followed for the whole of their lives.

structure of the family, were found to be determining factors in the decision to move from wage work into entrepreneurship. Broussard, et al. (2003) found that the self-employed have between 0.2 and 0.4 more children compared to the non-self-employed. The authors argue that having more children can increase the likelihood that an inside family member will be a good match at running the business. One might also think that the existence of family businesses, which are particularly prevalent in construction and in agriculture, is a further way to overcome the existence of capital constraints. Transfers of firms within families will help to preserve the status quo and will work against the interests of African Americans, in particular, who do not have as strong a history of business ownership as indigenous non-minorities. Analogously, Hout and Rosen (2000) and Fairlie and Robb (2007a) found that the offspring of self-employed parents are more likely than others to become self-employed and argued that the historically low rates of self-employment among African Americans and Latinos may contribute to their low contemporary rates. Fairlie and Robb (2007b), using data from the U.S. *Characteristics of Business Owners Survey*, and Dunn and Holtz-Eakin (2000), using data from the U.S. *National Longitudinal Surveys*, show that the transmission of positive effects of family on self-employment operates through two channels, intergenerational transmission of entrepreneurial preferences and wealth, and the acquisition of general and specific human capital.

A continuing puzzle in the literature has been why, nationally, the self-employment rate of African American males is one-third of that of nonminority males and has remained roughly constant since 1910. Fairlie and Meyer (2000) rule out a number of explanations for the difference. They found that trends in demographic factors, including the Great Migration and the racial convergence in education levels, “did not have large effects on the trend in the racial gap in self-employment” (p. 662). They also found that an initial lack of business experience “cannot explain the current low levels of black self-employment.” Further, they found that “the lack of traditions in business enterprise among blacks that resulted from slavery cannot explain a substantial part of the current racial gap in self-employment” (p. 664).

Fairlie (1999) and Wainwright (2000) have shown that a considerable part of the explanation of the differences between the African American and nonminority self-employment rate can be attributed to discrimination. Using the 5 percent Public Use Microdata Sample data (“PUMS”) from the 1990 Census, Wainwright (2000) demonstrated that these disparities tend to persist even when factors such as geography, industry, occupation, age, education and assets are held constant.

Bates (1989) finds strong supporting evidence that racial differences in levels of financial capital have significant effects upon racial patterns in business failure rates. Fairlie (1999, 2006) demonstrates, for example, that the African American exit rate from self-employment is twice as high as that of non-minorities. An example will help to make the point. Two baths are being filled with water. In the first scenario, both have the plug in. Water flows into bath A at the same rate as it does into bath B—that is, the inflow rate is the same. When we return after ten minutes the amount of water (the stock) will be the same in the two baths as the inflow rates were the same. In the second scenario, we take out the plugs and allow for the possibility that the outflow rates from the two baths are different. Bath A (the African American firms) has a much larger drain and hence the water flows out more quickly than it does from bath B (the nonminority firms). When we return after 10 minutes, even though the inflow rates are the same there is much

less water in bath A than there is in bath B. A lower exit rate for nonminority-owned firms than is found for minority-owned firms is perfectly consistent with the observed fact that minority-owned firms are younger and smaller than nonminority-owned firms. The extent to which that will be true is a function of the relative sizes of the inflow and the outflow rates.

### **B. Race and Gender Disparities in Earnings**

In this section, we examine earnings to determine whether minority and female entrepreneurs earn less from their businesses than do their nonminority male counterparts. Other things equal, if minority and female business owners as a group cannot achieve comparable earnings from their businesses as similarly-situated nonminorities because of discrimination, then failure rates for DBEs will be higher and DBE formation rates will be lower than would be observed in a race- and gender-neutral market area. Both phenomena would contribute directly to lower levels of minority and female business ownership.

Below, we first examine earnings disparities among wage and salary employees, that is, non-business owners. It is helpful to examine this segment of the labor force since a key source of new entrepreneurs in any given industry is the pool of experienced wage and salary workers in similar or related industries (Blanchflower 2000 and 2004). Employment discrimination that adversely impacts the ability of minorities or women to succeed in the labor force directly shrinks the available pool of potential DBEs. In almost every instance examined, a statistically significant adverse impact on wage and salary earnings is observed—in both the economy at large and also in the construction and construction-related professional services sector.<sup>241</sup>

We then turn to an examination of differences in earnings among the self-employed, that is, among business owners. Here too, among the pool of minorities and women who have formed businesses despite discrimination in both employment opportunities and business opportunities, statistically significant adverse impacts are observed in the vast majority of cases in construction and construction-related professional services (hereafter, “construction”), and other sectors of the economy.

In the remainder of this Chapter, we discuss the methods and data we employed and present the specific findings.

#### **1. Methods**

We used the statistical technique of linear regression analysis to estimate the effect of each of a set of observable characteristics, such as education and age, on an outcome variable of interest. In this case, the outcome variable of interest is earnings and we used regression to compare earnings among individuals in similar geographic and product markets at similar points in time

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<sup>241</sup> There is a growing body of evidence that discriminatory constraints in the capital market prevent minority-owned businesses from obtaining business loans. Furthermore, even when they are able to obtain them, there is evidence that these loans are not obtained on equal terms: minority-owned firms have to pay higher interest rates, other things being equal. This is another form of discrimination with an obvious and direct impact on the ability of racial minorities to form businesses and to expand or grow previously formed businesses. *See* Chapter VI, *infra*.

and with similar years of education and potential labor market experience and see if any adverse race or gender differences remain. In a discrimination free market area, one would not expect to observe significant differences in earnings by race or gender among such similarly situated observations.

Regression also allows us to narrowly tailor our statistical tests to JMAA's relevant geographic market, and assess whether disparities in that market are statistically significantly different from those observed elsewhere in the nation. Starting from an economy-wide data set, we first estimated the basic model of earnings differences just described and also included an indicator variable for the Jackson Municipal Airport Authority Market Area (JMAAMA), which is comprised of the State of Mississippi. This variable estimates the differential effect of location in the JMAAMA relevant to the rest of the country. This model appears as Specification 1 in Tables 5.1 through 5.6. Next, we estimated Specification 2, which is the same model as Specification 1 but with the addition of indicator variables that interact race and gender with the JMAAMA indicator. These variables estimate the differential effect of location in the JMAAMA *and* membership in the given race or gender group. Specification 3 represents our ultimate specification, which includes all the variables from the basic model as well as any of the interaction terms from Specification 2 that were statistically significant.<sup>242</sup>

Any negative and statistically significant differences by race or gender that remain in Specification 3 after holding all of these other factors constant—time, age, education, geography, and industry—are consistent with what would be observed in a market suffering from business-related discrimination.<sup>243</sup>

## 2. Data

The analyses undertaken in this Study require individual-level data (i.e., “microdata”) with relevant information on business ownership status and other key socioeconomic characteristics.

The data source used is the American Community Survey (ACS) Public Use Microdata Sample (PUMS) for 2006–2010. The Census Bureau's ACS is an ongoing survey covering the same type of information collected in the decennial census. The ACS is sent to approximately 3 million addresses annually, including housing units in all counties in the 50 states and the District of Columbia. The PUMS file from the ACS contains records for a subsample of the full ACS. The data used here are the multi-year estimates combining the 2006 through 2010 ACS PUMS records. The combined file contains over six million person-level records. Released in early 2012, the ACS PUMS provides the full range of population and housing information collected in the annual ACS and in the decennial census. Business ownership status is identified in the ACS PUMS through the “class of worker” variable, which distinguishes the unincorporated and incorporated self-employed from others in the labor force. The presence of the class of worker

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<sup>242</sup> If none of these terms is significant then Specification 3 reduces to Specification 1.

<sup>243</sup> Typically, a given test statistic is considered to be statistically significant if there is a reasonably low probability that the value of the statistic is due to random chance alone. Unless otherwise indicated, in this and subsequent chapters, we employ three levels of statistical significance, corresponding to 10 percent, 5 percent, and 1 percent probabilities that results were the result of random chance.

variable allows us to construct a detailed cross-sectional sample of individual business owners and their associated earnings.

### **3. Findings: Race and Gender Disparities in Wage and Salary Earnings**

Tables 5.1, 5.2 and 5.3 report results from our regression analyses of annual earnings among wage and salary workers. Table 5.1 focuses on the economy as a whole, Table 5.2 on the construction sector, and Table 5.3 on the goods and services sector. The numbers shown in each table indicate the percentage difference in that sector between the average annual wages of a given race/gender group and comparable nonminority males.

#### **a. Specification 1 - the Basic Model**

For example, in Table 5.1 Specification 1, the estimated percentage difference in average annual wages between African Americans (both genders) and nonminority males in 2006–2010 was -32.0 percent. That is, average annual wages among African Americans were 32.0 percent lower than for nonminority males who were otherwise similar in terms of geographic location, industry, age, and education. The number in parentheses below each percentage difference is the t-statistic, which indicates whether the estimated percentage difference is statistically significant or not. In Tables 5.1 through 5.6, a t-statistic of 1.99 or larger indicates statistical significance at a 95 percent confidence level or better.<sup>244</sup> In the example just used, the t-statistic of 214.30 indicates that the result is statistically significant.

Specification 1 in Table 5.1 shows adverse and statistically significant wage disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting in multiple race categories, and nonminority women, consistent with the presence of discrimination in these markets. Observed disparities are large as well, ranging from -22.5 percent for Hispanics to -32.0 percent for African Americans.

Specification 1 in Table 5.2 shows similar results when the basic analysis is restricted to the construction sector. In this sector, large, adverse, and statistically significant wage disparities are once again observed for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting in multiple race categories, and nonminority women, consistent with the presence of discrimination in these markets. Observed disparities are large as well, ranging from -19.8 percent for Hispanics to -34.8 percent for nonminority women.

Similarly, Specification 1 in Table 5.3 for the goods and services sector also shows large, adverse, and statistically significant wage disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting in multiple race categories, and nonminority women, consistent with the presence of discrimination in these markets. Observed disparities are large as well, ranging from -28.2 percent for Asians/Pacific Islanders to -38.3 percent for nonminority women.

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<sup>244</sup> From a two-tailed test.

A comparison of Tables 5.1 and 5.2 shows that for Hispanics and Asians, the disparities in the construction sector are somewhat smaller than those observed in the economy as a whole. For African Americans and nonminority women, they are somewhat larger. Disparities for Native Americans are about the same in both sectors. A comparison of Tables 5.1 and 5.3 shows that for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting in multiple race categories, and nonminority women, the disparities in the goods and services sector are all larger than those observed in the economy as a whole.

### **b. Specifications 2 and 3 - the Full Model Including JMAAMA-Specific Interaction Terms**

Next, we turn to Specifications 2 and 3 in Tables 5.1 through 5.3. In each of these Tables, Specification 2 is the basic regression model with a set of interaction terms added, designed to test whether minorities and women in the JMAAMA differ significantly from those elsewhere in the U.S. economy. Specification 2 in Table 5.1, for example, shows a -31.8 percent wage difference that estimates the direct effect of being African American in 2006–2010, as well as a statistically significant 11.5 percent wage decrement that captures the indirect effect of residing in the JMAAMA and being African American. That is, wages for African Americans in the JMAAMA, on average, were 11.5 percent lower than for African Americans in the nation as a whole and 43.3 percent lower (-31.8 percent minus 11.5 percent) than for nonminority males in the JMAAMA.

Specification 3 simply repeats Specification 2, dropping any JMAAMA interactions that are not statistically significant. In Table 5.1, for example, interaction terms were included in the final specification for African Americans, Hispanics, Native Americans, and nonminority women. The net result of Specification 3 in Table 5.1 is evidence of large, adverse, and statistically significant wage disparities for all minority groups and for nonminority women consistent with the presence of discrimination in these markets. The same is true for the construction sector (Table 5.2) as well as for the goods and services sector (Table 5.3).

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.1. Annual Wage Earnings Regressions, All Industries, 2006–2010**

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.320 (214.30)	-0.318 (210.46)	-0.318 (210.47)
Hispanic	-0.225 (156.85)	-0.225 (156.59)	-0.225 (156.60)
Asian/Pacific Islander	-0.258 (138.19)	-0.258 (137.95)	-0.258 (138.06)
Native American	-0.303 (59.07)	-0.304 (59.05)	-0.304 (59.05)
Two or more races	-0.265 (82.71)	-0.265 (82.47)	-0.265 (82.66)
Nonminority Female	-0.316 (359.46)	-0.316 (358.07)	-0.316 (358.09)
Age	0.181 (720.77)	0.181 (720.80)	0.181 (720.80)
Age <sup>2</sup>	-0.002 (628.05)	-0.002 (628.08)	-0.002 (628.08)
JMAAMA	-0.007 (1.23)	0.039 (4.58)	0.039 (4.61)
JMAAMA*African American		-0.115 (10.03)	-0.115 (10.08)
JMAAMA*Hispanic		0.077 (2.12)	0.078 (2.13)
JMAAMA*Asian/Pacific Islander		0.016 (0.32)	n/a
JMAAMA*Native American		0.185 (2.03)	0.185 (2.03)
JMAAMA*Two or more races		-0.050 (0.81)	n/a
JMAAMA*Nonminority female		-0.051 (4.53)	-0.050 (4.54)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	4205873	4205873	4205873
Adj. R <sup>2</sup>	.4494	.4495	.4495

Source: NERA calculations from the 2006-2010 ACS Public Use Microdata Sample.

Notes: (1) See above, section B.3.(a)-(b) for a description of Specifications 1 through 3; (2) Universe is all private sector wage and salary workers between the ages of 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (3) Reported number is the percentage difference in annual wages between a given group and nonminority men; (4) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (5) Geography is defined based on place of residence; (6) “JMAAMA” is shorthand for “Jackson Municipal Airport Authority Market Area,” which includes the State of Mississippi; (7) “n/a” in Specification 3 means that the category was not included in the regression because it was not statistically significant in Specification 2, as described above in section B.3.b.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.2. Annual Wage Earnings Regressions, Construction and Related Industries, 2006–2010**

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.340 (51.85)	-0.337 (50.44)	-0.337 (50.44)
Hispanic	-0.198 (45.68)	-0.198 (45.64)	-0.198 (45.65)
Asian/Pacific Islander	-0.211 (23.27)	-0.211 (23.20)	-0.211 (23.25)
Native American	-0.300 (20.12)	-0.301 (20.18)	-0.300 (20.12)
Two or more races	-0.220 (18.96)	-0.219 (18.78)	-0.220 (18.95)
Nonminority Female	-0.348 (94.88)	-0.348 (94.42)	-0.348 (94.88)
Age	0.144 (162.28)	0.144 (162.30)	0.144 (162.29)
Age <sup>2</sup>	-0.001 (139.61)	-0.001 (139.63)	-0.001 (139.62)
JMAAMA	-0.042 (2.13)	-0.011 (0.48)	-0.016 (0.75)
JMAAMA*African American		-0.186 (4.18)	-0.182 (4.15)
JMAAMA*Hispanic		0.124 (1.56)	n/a
JMAAMA*Asian/Pacific Islander		-0.124 (0.55)	n/a
JMAAMA*Native American		0.602 (1.60)	n/a
JMAAMA*Two or more races		-0.275 (1.76)	n/a
JMAAMA*Nonminority female		-0.068 (1.37)	n/a
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	351443	351443	351443
Adj. R <sup>2</sup>	.2572	.2573	.2573

Source and Notes: See Table 5.1.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.3. Annual Wage Earnings Regressions, Goods and Services Industries, 2006–2010**

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.372 (243.27)	-0.370 (238.98)	-0.370 (238.98)
Hispanic	-0.283 (185.18)	-0.283 (184.83)	-0.283 (184.9)
Asian/Pacific Islander	-0.282 (143.42)	-0.282 (143.00)	-0.281 (143.00)
Native American	-0.370 (67.52)	-0.371 (67.37)	-0.370 (67.51)
Two or more races	-0.320 (94.58)	-0.320 (94.33)	-0.320 (94.51)
Nonminority Female	-0.383 (451.81)	-0.383 (449.74)	-0.383 (449.77)
Age	0.217 (791.20)	0.217 (791.22)	0.217 (791.22)
Age <sup>2</sup>	-0.002 (686.65)	-0.002 (686.67)	-0.002 (686.67)
JMAAMA	-0.020 (3.16)	0.043 (4.38)	0.046 (4.83)
JMAAMA*African American		-0.138 (10.98)	-0.140 (11.37)
JMAAMA*Hispanic		0.075 (1.74)	n/a
JMAAMA*Asian/Pacific Islander		-0.152 (3.08)	-0.155 (3.14)
JMAAMA*Native American		0.059 (0.62)	n/a
JMAAMA*Two or more races		-0.033 (0.48)	n/a
JMAAMA*Nonminority female		-0.066 (5.38)	-0.068 (5.72)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	3854430	3854430	3854430
Adj. R <sup>2</sup>	.4002	.4002	.4002

Source and Notes: See Table 5.1.

### c. Conclusions

Clearly, minorities and women earn substantially and significantly less from their labor than do their similarly situated nonminority male counterparts—in the Jackson Municipal Airport Authority Market Area just as in the nation as a whole. Such disparities are symptoms of discrimination in the labor force that, in addition to its direct effect on workers, reduces the future availability of DBEs by stifling opportunities for minorities and women to progress through precisely those internal labor markets and occupational hierarchies that are most likely to lead to acquiring the skills, experience and contacts necessary to take advantage of entrepreneurial opportunities. They also demonstrate that discrimination results in less opportunity for minorities and women to accumulate and save business start-up capital through their work as employees. These disparities reflect more than mere “societal discrimination” because they demonstrate the nexus between discrimination in the job market and reduced entrepreneurial opportunities for minorities and women. Other things equal, these reduced entrepreneurial opportunities in turn lead to lower DBE availability levels than would be observed in a race- and gender-neutral market area.

### 4. Findings: Race and Gender Disparities in Business Owner Earnings

The patterns of discrimination that affect minority and female wage earners affect minority and female entrepreneurs as well. We turn next to the analysis of race and gender disparities in business owner earnings. Table 5.4 focuses on the economy as a whole, Table 5.5 on the construction sector, and Table 5.6 on the goods and services sector. The numbers shown in each table indicate the percentage difference in that sector between the average annual self-employment earnings of a given race/gender group and comparable nonminority males.

#### a. Specification 1 - the Basic Model<sup>245</sup>

Specification 1 in Table 5.4 shows large, adverse, and statistically significant business owner earnings disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting multiple races, and nonminority women, consistent with the presence of discrimination in these markets. The measured difference for African Americans is 39.0 percent lower than for comparable nonminority males; for Hispanics, 22.5 percent lower; for Asians, 10.3 percent lower; for Native Americans, 38.7 percent lower; for persons reporting two or more races, 36.7 percent lower; and for nonminority women, 39.4 percent lower.

Turning to the construction sector, Specification 1 in Table 5.5 shows large, adverse, and statistically significant business owner earnings disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting multiple races, and nonminority women, consistent with the presence of discrimination in these markets. The measured difference for African Americans is 41.6 percent lower than for comparable nonminority males; for Hispanics, 17.4 percent lower; for Asians/Pacific Islanders, 16.5 percent lower; for Native Americans, 31.7 percent lower; for persons reporting two or more races, 28.6 percent lower; and for nonminority women, 44.8 percent lower.

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<sup>245</sup> See above, section B.3.a., for a detailed description of Specification 1.

## Market-Based Disparities in Business Formation and Business Owner Earnings

For the Goods and Services sector, Specification 1 in Table 5.6 shows large, adverse, and statistically significant business owner earnings disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting multiple races, and nonminority women consistent with the presence of discrimination in these markets. The measured difference for African Americans is 42.7 percent lower than for comparable nonminority males; for Hispanics, 28.9 percent lower; for Asians/Pacific Islanders, 12.8 percent lower; for Native Americans, 44.2 percent lower; for persons reporting two or more races, 41.2 percent lower; and for nonminority women, 42.1 percent lower.

### **b. Specifications 2 and 3 - the Full Model Including JMAAMA-Specific Interaction Terms<sup>246</sup>**

Next, we turn to Specifications 2 and 3 in Tables 5.4 through 5.6. Specification 2 is the basic regression model enhanced by a set of interaction terms to test whether minorities and women in the JMAAMA differ significantly from those elsewhere in the U.S. economy. Specification 3 drops any JMAAMA interaction terms that are not statistically significant.

For the economy as a whole in 2006-2010, Table 5.4 shows that only the JMAAMA interaction term for nonminority women is statistically significant, indicating that disparities are, on average, significantly worse in the JMAAMA for nonminority women than in the nation as a whole. For the other groups, the disparities in the JMAAMA are, on average, no better or worse than what is observed for the nation as a whole.

For the construction sector in 2006–2010, Table 5.5 shows that the estimates for the JMAAMA are in agreement with results for the nation as a whole; that is, disparities in the JMAAMA are no better or worse than in the nation as a whole.

For the goods and services sector in 2006–2010, Table 5.6 shows that the JMAAMA interaction terms for Native Americans and for nonminority women are statistically significant, indicating that disparities for Native Americans and for nonminority women in the goods and services sector are worse in the JMAAMA than in the nation as a whole, while disparities for the other groups in the JMAAMA are no better or worse than in the nation as a whole.

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<sup>246</sup> See above, section B.3.b., for a detailed description of Specifications 2 and 3.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.4. Annual Business Owner Earnings Regressions, All Industries, 2006–2010**

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.390 (39.38)	-0.390 (38.90)	-0.390 (39.43)
Hispanic	-0.225 (25.83)	-0.225 (25.82)	-0.224 (25.80)
Asian/Pacific Islander	-0.103 (8.33)	-0.104 (8.37)	-0.103 (8.31)
Native American	-0.387 (14.07)	-0.385 (13.94)	-0.387 (14.06)
Two or more races	-0.367 (21.49)	-0.366 (21.38)	-0.367 (21.48)
Nonminority Female	-0.394 (81.57)	-0.394 (81.21)	-0.394 (81.25)
Age	0.167 (102.77)	0.167 (102.77)	0.167 (102.77)
Age <sup>2</sup>	-0.002 (90.40)	-0.002 (90.40)	-0.002 (90.40)
JMAAMA	0.046 (1.29)	0.090 (2.02)	0.087 (2.18)
JMAAMA*African American		-0.038 (0.47)	n/a
JMAAMA*Hispanic		0.258 (1.02)	n/a
JMAAMA*Asian/Pacific Islander		0.577 (1.70)	n/a
JMAAMA*Native American		-0.548 (1.49)	n/a
JMAAMA*Two or more races		-0.378 (1.26)	n/a
JMAAMA*Nonminority female		-0.142 (2.31)	-0.139 (2.37)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	458462	458462	458462
Adj. R <sup>2</sup>	.1629	.1629	.1629

Source: NERA calculations from the 2006-2010 ACS Public Use Microdata Sample.

Notes: (1) See above, section B.4.(a)-(b) for a description of specifications 1 through 3; (2) Universe is all persons in the private sector with positive business earnings between the ages of 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (3) Reported number is the percentage difference in annual business earnings between a given group and nonminority men; (4) Number in parentheses is the absolute value of the associated t-statistic. Using a two-tailed test, t-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (5) Geography is defined based on place of residence; (6) “JMAAMA” is shorthand for “Jackson Municipal Airport Authority Market Area,” which includes the State of Mississippi; (7) “n/a” in Specification 3 means that the category was not included in the regression because it was not statistically significant in Specification 2, as described above in section B.4.b.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.5. Business Owner Earnings Regressions, Construction and Related Industries, 2006–2010**

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.416 (16.62)	-0.415 (16.19)	-0.416 (16.62)
Hispanic	-0.174 (9.90)	-0.175 (9.90)	-0.174 (9.90)
Asian/Pacific Islander	-0.165 (4.23)	-0.164 (4.22)	-0.165 (4.23)
Native American	-0.317 (5.66)	-0.319 (5.70)	-0.317 (5.66)
Two or more races	-0.286 (7.06)	-0.287 (7.06)	-0.286 (7.06)
Nonminority female	-0.448 (27.28)	-0.448 (27.26)	-0.448 (27.28)
Age	0.131 (35.56)	0.131 (35.56)	0.131 (35.56)
Age <sup>2</sup>	-0.001 (32.2)	-0.001 (32.20)	-0.001 (32.20)
JMAAMA	-0.009 (0.13)	-0.019 (0.27)	-0.009 (0.13)
JMAAMA*African American		-0.023 (0.15)	n/a
JMAAMA*Hispanic		0.073 (0.19)	n/a
JMAAMA*Asian/Pacific Islander		-0.495 (0.49)	n/a
JMAAMA*Native American		1.157 (0.78)	n/a
JMAAMA*Two or more races		0.184 (0.36)	n/a
JMAAMA*Nonminority Female		0.232 (0.82)	n/a
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	74811	74811	74811
Adj. R <sup>2</sup>	.0509	.0508	.0509

Source and Notes: See Table 5.4.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.6. Business Owner Earnings Regressions, Goods and Services Industries, 2006–2010**

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.427 (40.05)	-0.427 (39.62)	-0.428 (40.12)
Hispanic	-0.289 (29.92)	-0.289 (29.88)	-0.289 (29.88)
Asian/Pacific Islander	-0.128 (9.70)	-0.129 (9.72)	-0.128 (9.68)
Native American	-0.442 (14.13)	-0.438 (13.95)	-0.438 (13.95)
Two or more races	-0.412 (21.72)	-0.410 (21.60)	-0.411 (21.70)
Nonminority female	-0.421 (88.96)	-0.420 (88.44)	-0.420 (88.49)
Age	0.186 (99.41)	0.186 (99.41)	0.186 (99.41)
Age <sup>2</sup>	-0.002 (86.37)	-0.002 (86.37)	-0.002 (86.38)
JMAAMA	0.079 (1.84)	0.170 (2.91)	0.160 (3.12)
JMAAMA*African American		-0.056 (0.59)	n/a
JMAAMA*Hispanic		0.152 (0.50)	n/a
JMAAMA*Asian/Pacific Islander		0.433 (1.25)	n/a
JMAAMA*Native American		-0.766 (2.28)	-0.764 (2.26)
JMAAMA*Two or more races		-0.646 (1.85)	n/a
JMAAMA*Nonminority Female		-0.197 (2.90)	-0.190 (2.96)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (88 categories)	Yes	Yes	Yes
N	383651	383651	383651
Adj. R <sup>2</sup>	.1125	.1125	.1125

Source and Notes: See Table 5.4.

### **c. Conclusions**

As was the case for wage and salary earners, minority and female entrepreneurs earn substantially and significantly less from their efforts than similarly situated nonminority male entrepreneurs. The situation, in general, differs little in the Jackson Municipal Airport Authority Market Area from what is observed for the nation as a whole. These disparities are consistent with the presence of discrimination in commercial markets that adversely affects DBEs. Other things equal, if minorities and women are prevented by discrimination from earning remuneration from their entrepreneurial efforts comparable to that of similarly situated nonminority males, then capital reinvestment and growth rates may slow, business failure rates may increase and, as demonstrated in the next section, business formation rates may decrease. Combined, these phenomena result in lower DBE availability levels than would be observed in a race- and gender-neutral market area. As this chapter demonstrates, discrimination depresses business owner earnings for women and minority entrepreneurs. Business owner earnings, however, are often directly related to whether an owner has the capital to reinvest (firm size), how long a firm survives (firm age), and how much money a firm takes in (individual firm revenues). These observations illustrate why employment size, years in business, and individual firm revenues are especially inappropriate factors to consider in any sort of “capacity” type analysis.

### **C. Race and Gender Disparities in Business Formation**

As discussed in the two previous sections, discrimination that affects the wages and entrepreneurial earnings of minorities and women will ultimately affect the number of businesses formed by these groups as well. In this section of this chapter, we turn to the analysis of race and gender disparities in business formation.<sup>247</sup> We compare self-employment rates by race and gender to determine whether minorities or women are as likely to enter the ranks of entrepreneurs as are similarly-situated nonminority males. We find that in most cases they are not as likely to do so, and that minority and female business formation rates in most cases would likely be substantially and significantly higher if markets operated in a race- and gender-neutral manner.

Discrimination in the labor market, symptoms of which are evidenced in Section B.3 above, might cause wage and salary workers to turn to self-employment in hopes of encountering less discrimination from customers and suppliers than from employers and co-workers. Other things equal, and assuming minority and female workers did not believe that discrimination pervaded commercial markets as well, this would lead minority and female business formation rates to be higher than would otherwise be expected.

On the other hand, discrimination in the labor market prevents minorities and women from acquiring the very skills, experience, and positions that are often observed among those who leave the ranks of the wage and salary earners to start their own businesses. Many construction contracting concerns have been formed by individuals who were once employed as foremen for other contractors, fewer by those who were employed instead as laborers. Similarly,

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<sup>247</sup> We use the phrases “business formation rates” and “self-employment rates” interchangeably in this Study.

discrimination in commercial capital and credit markets, as well as asset and wealth distribution, prevents minorities and women from acquiring the financial credit and capital that are so often prerequisites to starting or expanding a business. Other things being equal, these phenomena would lead minority and female business formation rates to be lower than otherwise would be expected.

Further, discrimination by commercial customers and suppliers against DBEs, symptoms of which are evidenced in Section B.4 above and elsewhere, operates to increase input prices and lower output prices for DBEs. This discrimination leads to higher rates of failure for some minority- and women-owned firms, lower rates of profitability and growth for others, and prevents some minorities and women from ever starting businesses at all.<sup>248</sup> All of these phenomena, other things equal, would contribute directly to relatively lower observed rates of minority and female self-employment.

### 1. Methods and Data

To see if minorities or nonminority women are as likely to be business owners as are comparable nonminority males, we use a statistical technique known as Probit regression. Probit regression is used to determine the relationship between a categorical variable—one that can be characterized in terms of a “yes” or a “no” response as opposed to a continuous number—and a set of characteristics that are related to the outcome of the categorical variable. Probit regression produces estimates of the extent to which each characteristic is positively or negatively related to the likelihood that the categorical variable will be a yes or no. For example, Probit regression is used by statisticians to estimate the likelihood that an individual participates in the labor force, retires this year, or contracts a particular disease—these are all variables that can be categorized by a response of “yes” (for example, she is in the labor force) or “no” (for example, she is not in the labor force)—and the extent to which certain factors are positively or negatively related to the likelihood (for example, the more education she has, the more likely that she is in the labor force). Probit regression is one of several techniques that can be used to examine qualitative outcomes. Generally, other techniques such as Logit regression yield similar results.<sup>249</sup> In the present case, Probit regression is used to examine the relationship between the choice to own a business (yes or no) and the other demographic and socioeconomic characteristics in our basic model. The underlying data for this section is once again the 2006–2010 ACS PUMS.

### 2. Findings: Race and Gender Disparities in Business Formation

As a point of reference for what follows, Tables 5.7 and 5.8 provide a summary of business ownership rates in 2006–2010 by race and gender. A striking feature of both tables is how much higher, in general, business ownership rates are for nonminority males than for other groups.

Table 5.7, for example, shows a 10.78 percentage point difference between the overall self-employment rate of African Americans and nonminority males in the JMAAMA ( $15.42 - 4.64 =$

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<sup>248</sup> See also the materials cited at fn. 234 *supra*.

<sup>249</sup> For a detailed discussion, see G.S. Maddala (1983). Probit analysis is performed here using the “dprobit” command in the statistical program STATA.

## Market-Based Disparities in Business Formation and Business Owner Earnings

10.78). As shown in the rightmost column, this 10.78 percentage point gap translates into an African American business formation rate in the JMAAMA that is 69.9 percent lower than the nonminority male business formation rate (i.e.,  $4.64 - 15.42 \div 15.42 \approx -69.9\%$ ). For Hispanics, the business formation rate is 42.7 percent lower. For Asians/Pacific Islanders, it is 8.8 percent lower. For Native Americans, it is 51.1 percent lower. For persons reporting multiple races, it is 38.5 percent lower. For minorities as a group, it is 65.4 percent lower. For nonminority women, it is 49.1 percent lower; and for DBEs overall, it is 57.9 percent lower.

Table 5.8 provides similar information for the construction sector and the goods and services sector. Large deficits are observed in construction for all groups. With the sole exception of Asians/Pacific Islanders, large deficits are observed in the goods and services sector as well.

There is no doubt that a portion of the group differences documented in Tables 5.7 and 5.8 are associated with differences in the distribution of individual productivity characteristics and preferences between minorities, women, and nonminority males. It is well known, for example, that earnings tend to increase with age (i.e., labor market experience). It is also true that the propensity toward self-employment increases with labor market experience.<sup>250</sup> Since most minority populations in the United States have a lower median age than the nonminority population, it is important to test whether the disparities in business ownership evidenced in Tables 5.7 and 5.8 can be explained by differences in the age distribution or other factors such as education, geographic location, or industry preferences of minorities and nonminority women compared to nonminority males.

To do this, the remainder of this section presents a series of regression analyses that test whether large, adverse, and statistically significant race and gender disparities for minorities and women remain when these other factors are held constant. Table 5.9 focuses on the economy as a whole and Tables 5.10 and 5.11 focus on the construction sector and the goods and services sector, respectively. The numbers shown in each of these tables indicate the percentage point difference between the probability of self-employment for a given race/gender group compared to similarly-situated nonminority males.

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<sup>250</sup> Wainwright (2000), p. 86.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.7. Self-Employment Rates in 2006–2010 for Selected Race and Gender Groups: United States and the Jackson Municipal Airport Authority Market Area, All Industries**

Race/Gender	U.S. (%)	Jackson Municipal Airport Authority Market Area (%)	Percent Difference from Nonminority Male in Column (2)
	(1)	(2)	(3)
African American	5.37	4.64	-69.9
Hispanic	8.54	8.84	-42.7
Asian/Pacific Islander	10.27	14.06	-8.8
Native American	8.69	7.54	-51.1
Two or more races	8.90	9.48	-38.5
Minority	7.88	5.33	-65.4
Nonminority female	8.59	7.85	-49.1
DBE	8.25	6.49	-57.9
Nonminority male	13.97	15.42	

Source: NERA calculations from the 2006-2010 ACS Public Use Microdata Sample.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.8. Self-Employment Rates in 2006–2010 for Selected Race and Gender Groups: United States and the Jackson Municipal Airport Authority Market Area, Construction Sector and Goods and Services Sectors**

Race/Gender	U.S. (%)	Jackson Municipal Airport Authority Market Area (%)	Percent Difference from Nonminority Male in Column (2)
	(1)	(2)	(3)
<i>Construction Sector</i>			
African American	16.86	20.70	-32.8
Hispanic	15.34	11.88	-61.4
Asian/Pacific Islander	17.39	4.62	-85.0
Native American	18.32	24.31	-21.1
Two or more races	20.22	27.78	-9.8
Minority	16.02	18.25	-40.8
Nonminority female	14.97	13.20	-57.2
DBE	15.75	16.91	-45.1
Nonminority male	26.25	30.81	-32.8
<i>Goods and Services Sectors</i>			
African American	4.81	3.70	-69.9
Hispanic	7.51	7.65	-37.8
Asian/Pacific Islander	9.97	14.58	18.6
Native American	7.38	5.26	-57.2
Two or more races	7.90	6.91	-43.8
Minority	7.10	4.30	-65.0
Nonminority female	8.41	7.68	-37.5
DBE	7.79	5.89	-52.1
Nonminority male	11.75	12.29	

Source: NERA calculations from the 2006-2010 ACS Public Use Microdata Sample.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

### a. Specification 1 - the Basic Model<sup>251</sup>

Specification 1 in Table 5.9 shows large, adverse, and statistically significant business formation disparities for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting multiple races, and nonminority women consistent with the presence of discrimination in these markets. Specification 1 in Tables 5.10 and 5.11 shows large, negative, and statistically significant business formation disparities for each of these groups in the construction sectors as well as in the goods and services sector.

<sup>251</sup> See above, section C.2.a., for a detailed description of Specification 1.

**b. Specifications 2 and 3 - the Full Model Including JMAAMA-Specific Interaction Terms<sup>252</sup>**

Several of the JMAAMA interaction terms included in Specification 2 were significant. The final results are shown in Specification 3 for Tables 5.9 through 5.11.

To summarize for the economy-wide results (Table 5.9):

- For African Americans, business formation rates are 5.6 percentage points lower than what would be expected in a race- and gender-neutral market area.<sup>253</sup>
- For Hispanics, business formation rates are 3.1 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Asians/Pacific Islanders, business formation rates are 2.8 percentage points higher than what would be expected in a race- and gender-neutral market area.
- For Native Americans, business formation rates are 2.7 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For persons reporting multiple races, business formation rates are 1.8 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For nonminority women, business formation rates are 3.8 percentage points lower than what would be expected in a race- and gender-neutral market area.

To summarize for the construction sector results (Table 5.10):

- For African Americans, business formation rates are 8.9 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Hispanics, business formation rates are 15.1 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Asians/Pacific Islanders, business formation rates are 5.9 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Native Americans, business formation rates are 7.8 percentage points lower than what would be expected in a race- and gender-neutral market area.

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<sup>252</sup> See above, section C.2.b., for a detailed description of Specifications 2 and 3.

<sup>253</sup> Recall that the net business formation rate is equal to the value direct coefficient (on the African American indicator variable in this case) plus the value of the statistically significant coefficient on the JMAAMA\*African American interaction term.

## Market-Based Disparities in Business Formation and Business Owner Earnings

- For persons reporting multiple races, business formation rates are 3.5 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For nonminority women, business formation rates are 15.4 percentage points lower than what would be expected in a race- and gender-neutral market area.

To summarize for the Goods and Services sector results (Table 5.11):

- For African Americans, business formation rates are 6.5 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Hispanics, business formation rates are 3.0 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For Asians/Pacific Islanders, business formation rates are 5.2 percentage points higher than what would be expected in a race- and gender-neutral market area.
- For Native Americans, business formation rates are 2.9 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For persons reporting multiple races, business formation rates are 1.8 percentage points lower than what would be expected in a race- and gender-neutral market area.
- For nonminority women, business formation rates are 3.4 percentage points lower than what would be expected in a race- and gender-neutral market area.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.9. Business Formation Regressions, All Industries, 2006–2010**

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.040 (93.85)	-0.040 (92.12)	-0.040 (92.13)
Hispanic	-0.031 (82.61)	-0.031 (82.40)	-0.031 (82.51)
Asian/Pacific Islander	-0.018 (34.44)	-0.018 (34.46)	-0.018 (34.47)
Native American	-0.027 (19.46)	-0.027 (19.38)	-0.027 (19.46)
Two or more races	-0.018 (19.70)	-0.018 (19.67)	-0.018 (19.68)
Nonminority Female	-0.027 (100.47)	-0.027 (99.88)	-0.027 (99.90)
Age	0.010 (143.19)	0.010 (143.19)	0.010 (143.19)
Age <sup>2</sup>	-0.000 (98.95)	-0.000 (98.95)	-0.000 (98.96)
JMAAMA	0.004 (2.66)	0.011 (5.09)	0.011 (4.97)
JMAAMA*African American		-0.016 (4.78)	-0.016 (4.68)
JMAAMA*Hispanic		-0.015 (1.61)	n/a
JMAAMA*Asian/Pacific Islander		0.045 (3.18)	0.046 (3.22)
JMAAMA*Native American		-0.007 (0.31)	n/a
JMAAMA*Two or more races		0.010 (0.57)	n/a
JMAAMA*Nonminority Female		-0.011 (3.90)	-0.011 (3.79)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	4481708	4481708	4481708
Pseudo R <sup>2</sup>	.2170	.2170	.2170

Source: NERA calculations from the 2006-2010 ACS Public Use Microdata Sample.

Notes: (1) See above, section C.2.(a)-(b) for a description of specifications 1 through 3; (2) Universe is all private sector labor force participants between the ages of 16 and 64; observations with imputed values to the dependent variable and all independent variables are excluded; (3) Reported number represents the percentage point probability difference in business ownership rates between a given group and nonminority men, evaluated at the mean business ownership rate for the estimation sample; (4) Number in parentheses is the absolute value of the associated z-statistic. Using a two-tailed test, z-statistics greater than 1.67 (1.99) (2.64) are statistically significant at a 90 (95) (99) percent confidence level; (5) Geography is defined based on place of residence; (6) “JMAAMA” is shorthand for “Jackson Municipal Airport Authority Market Area,” which includes the State of Mississippi; (7) “n/a” in Specification 3 indicates that the category was not included in the regression because it was not statistically significant in Specification 2, as described above in section C.2.b.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.10. Business Formation Regressions, Construction and Related Industries, 2006–2010**

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.088 (26.41)	-0.089 (26.07)	-0.089 (26.46)
Hispanic	-0.071 (32.42)	-0.070 (32.26)	-0.070 (32.26)
Asian/Pacific Islander	-0.059 (12.41)	-0.058 (12.36)	-0.059 (12.39)
Native American	-0.078 (10.40)	-0.077 (10.35)	-0.078 (10.40)
Two or more races	-0.035 (5.91)	-0.035 (5.89)	-0.035 (5.90)
Nonminority Female	-0.097 (47.52)	-0.097 (47.12)	-0.097 (47.12)
Age	0.023 (55.29)	0.023 (55.28)	0.023 (55.29)
Age <sup>2</sup>	-0.000 (37.80)	-0.000 (37.80)	-0.000 (37.80)
JMAAMA	0.032 (3.53)	0.041 (3.95)	0.041 (4.30)
JMAAMA*African American		0.008 (0.37)	n/a
JMAAMA*Hispanic		-0.081 (2.20)	-0.081 (2.23)
JMAAMA*Asian/Pacific Islander		-0.115 (0.84)	n/a
JMAAMA*Native American		-0.047 (0.37)	n/a
JMAAMA*Two or more races		0.008 (0.10)	n/a
JMAAMA*Nonminority female		-0.057 (2.37)	-0.057 (2.42)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	418213	418213	418213
Pseudo R <sup>2</sup>	.0770	.0770	.0770

Source and Notes: See Table 5.9.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.11. Business Formation Regressions, Goods and Services Industries, 2006–2010**

Independent Variables	Specification		
	(1)	(2)	(3)
African American	-0.051 (99.86)	-0.051 (98.30)	-0.051 (98.31)
Hispanic	-0.030 (61.64)	-0.030 (61.53)	-0.030 (61.58)
Asian/Pacific Islander	-0.025 (42.32)	-0.025 (42.40)	-0.025 (42.41)
Native American	-0.029 (15.82)	-0.029 (15.75)	-0.029 (15.82)
Two or more races	-0.020 (17.93)	-0.020 (17.91)	-0.020 (17.91)
Nonminority Female	-0.026 (86.73)	-0.026 (86.24)	-0.026 (86.25)
Age	0.010 (116.02)	0.010 (116.03)	0.010 (116.03)
Age <sup>2</sup>	-0.000 (77.71)	-0.000 (77.72)	-0.000 (77.72)
JMAAMA	0.007 (3.19)	0.012 (4.17)	0.011 (4.19)
JMAAMA*African American		-0.014 (3.22)	-0.014 (3.21)
JMAAMA*Hispanic		-0.008 (0.58)	n/a
JMAAMA*Asian/Pacific Islander		0.077 (4.40)	0.077 (4.42)
JMAAMA*Native American		-0.008 (0.30)	n/a
JMAAMA*Two or more races		0.012 (0.56)	n/a
JMAAMA*Nonminority female		-0.008 (2.27)	-0.008 (2.25)
Education (16 categories)	Yes	Yes	Yes
Geography (51 categories)	Yes	Yes	Yes
Industry (25 categories)	Yes	Yes	Yes
N	4178050	4178050	4178050
Pseudo R <sup>2</sup>	.0642	.0642	.0642

Source and Notes: See Table 5.9.

### c. Conclusions

This section has demonstrated that, for African Americans, Hispanics, Asians/Pacific Islanders, Native Americans, persons reporting multiple races, minorities as a group, nonminority women, and minorities and women as a group, observed business formation rates in the construction sector of the Jackson Municipal Airport Authority Market Area are substantially and statistically significantly lower than those that would be expected to be observed if commercial markets operated in a race- and gender-neutral manner. With only limited exceptions, the same is true in the goods and services sector and in the economy as a whole. Minorities and women generally are substantially and significantly less likely to own their own businesses than would be expected based upon their observable characteristics including age, education, geographic location, industry, and trends over time. Moreover, as demonstrated in previous sections, these groups also suffer substantial and significant earnings disadvantages relative to comparable nonminority males whether they work as employees or as entrepreneurs. These findings are consistent with results expected to be observed in a discriminatory market area.

### D. Expected Business Formation Rates—Implications for Current DBE Availability<sup>254</sup>

In Table 5.12, the Probit regression results from Tables 5.9, 5.10 and 5.11 for the overall economy in the Mississippi market area, the construction sector, and the goods and services sector, respectively, are combined with weighted average self-employment rates by race and gender from the 2006–2010 ACS PUMS (Tables 5.7 and 5.8) to determine the disparity between baseline availability and expected availability in a race- and gender-neutral market area. These figures appear in column (3) of each panel in Table 5.12.

The business formation rate in the JMAAMA for African Americans in the construction sector is 21.51 percent (see middle panel of Table 5.12, top row). According to the regression specification underlying Table 5.10, however, that rate would be 30.31 percent, or 40.9 percent higher, in a race- and gender-neutral market area. Put differently, the disparity ratio of the actual business formation rate to the expected business formation rate for African Americans is 70.97. Disparity indices are adverse and statistically significant in construction for African Americans, Hispanics, nonminority women, and minorities and women combined.

In construction, the largest disparities observed are for Hispanics (62.98), followed in descending order by nonminority women (67.96), African Americans (70.97), minorities and women combined (75.12), persons reporting multiple races (87.65), and minorities as a group (88.42).

Given the large disparities observed in the construction sector for most presumptive groups, goal-setters might consider adjusting baseline estimates of DBE availability upward to account for the continuing effects of discrimination. The business formation rate disparities documented for the construction sector in Table 5.12 can be combined with the estimates of current DBE availability documented in Table 4.21 and elsewhere to provide estimates of expected

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<sup>254</sup> This exercise also addresses the requirements of 49 C.F.R. 26.45 (“Step 2”) for the USDOT DBE Program.

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availability. These estimates appear below in Table 7.28. Expected DBE availability exceeds actual current DBE availability in five of the seven cases observed.

**Table 5.12. Actual and Potential Business Formation Rates in the Jackson Municipal Airport Authority Market Area**

Race/Gender	Business Formation Rate (%)	Expected Business Formation Rate (%)	Disparity Ratio
<i>All Industries</i>			
	(1)	(2)	(3)
African American	4.64	10.24	45.31
Hispanic	8.84	11.94	74.04
Asian/Pacific Islander	14.06	11.26	
Native American	7.54	10.24	73.63
Two or more races	9.48	11.28	84.04
Minority	5.33	10.80	49.35
Nonminority female	7.85	11.65	67.38
DBE	6.49	11.44	56.73
<i>Construction Sector</i>			
	(1)	(2)	(3)
African American	20.70	29.60	69.93
Hispanic	11.88	26.28	45.21
Asian/Pacific Islander	4.62	10.52	43.92
Native American	24.31	32.11	75.71
Two or more races	27.78	31.28	88.81
Minority	18.25	28.30	64.49
Nonminority female	13.20	28.60	46.15
DBE	16.91	29.08	58.15
<i>Goods and Services Sectors</i>			
	(1)	(2)	(3)
African American	3.70	10.20	36.27
Hispanic	7.65	10.65	71.83
Asian/Pacific Islander	14.58	9.38	
Native American	5.26	8.16	64.46
Two or more races	6.91	8.71	79.33
Minority	4.30	9.16	46.94
Nonminority female	7.68	11.08	69.31
DBE	5.89	10.02	58.78

Source: 2006–2010 ACS Public Use Microdata Sample. See Tables 5.7 through 5.11. MBE and DBE results are from similar regression analyses, not reported here.

Notes: (A) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (B) Figures in column (1) are average self-employment rates weighted using ACS population-based person weights, as also shown in Tables 5.7 and 5.8. (C) Figures in column (2), top, middle, and bottom panels, are derived by combining the figure in column (1) with the corresponding result from the regression reported in Table 5.9, 5.10 or 5.11, respectively. MBE and DBE figures were derived from similar regression analyses, not reported separately. (D) Column (3) is the figure in column (1) divided by the figure in column (2), with the result multiplied by 100. (E) An empty cell in the Disparity Ratio column indicates that no adverse disparity was observed for that category.

## E. Evidence from the Survey of Business Owners

As a final check on the statistical findings in this Chapter, we present evidence from a Census Bureau data collection effort dedicated to DBEs. The Census Bureau's *Survey of Business Owners and Self-Employed Persons* (SBO), formerly known as the *Survey of Minority- and Women-Owned Business Enterprises* (SMWOBE), collects and disseminates data on the number, sales, employment, and payrolls of businesses owned by women and members of racial and ethnic minority groups. This survey has been conducted every five years since 1972 as part of the *Economic Census* program. Data from the 2007 SBO, the most recent, were released in 2011.

The SBO estimates are created by matching data collected from income tax returns by the Internal Revenue Service with Social Security Administration data on race and ethnicity, and supplementing this information using statistical sampling methods. The unique field for conducting this matching is the Social Security Number (SSN) or the Employer Identification Number (EIN), as reported on the tax return.<sup>255</sup>

The SBO covers women and five groups of minorities: (1) African Americans, (2) Hispanics, (3) Asians, (4) Native Hawaiians and Pacific Islanders, and (5) American Indians and Alaskan Natives. The 2007 SBO also includes comparative information for nonminority male-owned firms.<sup>256</sup>

The SBO provides aggregate estimates of the number of minority-owned and women-owned firms and their annual sales and receipts. The SBO distinguishes employer firms (i.e., firms with one or more paid employees) from nonemployer firms, and for the former also includes estimates of aggregate annual employment and payroll.

Compared to the ACS PUMS, the SBO is more limited in the scope of industrial and geographic detail it provides. Nonetheless, it contains a wealth of information on the character of minority and female business enterprise in the U.S as a whole as well as in the State of Mississippi.<sup>257</sup> In the remainder of this section, we present SBO statistics for the United States as a whole and in Mississippi and calculate disparity indices from them. We find that results in the SBO regarding disparities are consistent with our findings above using the ACS PUMS.

Tables 5.13 and 5.14 contain data for all industries combined. Table 5.13 is for the U.S. as a whole, Table 5.14 is for the State of Mississippi. Panel A in these two tables summarizes the SBO results for each race and/or gender grouping. For example, Panel A of Table 5.13 shows a total of 26.29 million firms in the U.S. in 2007 (column 1) with overall sales and receipts of

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<sup>255</sup> Prior to 2002, "C" corporations were not included in the SMWOBE universe due to technical difficulties. This has been rectified in the 2002 SBO. For more information, consult the discussion of SBO survey methodology at <http://www.census.gov/econ/sbo/>.

<sup>256</sup> In the ACS PUMS data, discussed above, the unit of analysis is the business owner, or self-employed person. In the SBO data the unit of analysis is the business rather than the business owner. Furthermore, unlike most other business statistics, including the other components of the *Economic Census*, the unit of analysis in the SBO is the firm, rather than the establishment.

<sup>257</sup> It is, in general, not possible with the SBO dataset to examine geographic divisions below the state level.

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\$10.949 trillion (column 2). Of these 26.29 million firms, 5.19 million had one or more employees (column 3) and these 5.19 million firms had overall sales and receipts of \$10.015 trillion (column 4). Column (5) shows a total of 56.63 million employees on the payroll of these 5.19 million firms and a total annual payroll expense of \$1.941 trillion (column 6).

The remaining rows in Panel A provide comparable statistics for nonminority male-owned, women-owned, and minority-owned firms. For example, Table 5.13 shows that there were 1.9 million African American-owned firms counted in the SBO, and that these 1.9 million firms registered \$135.7 billion in sales and receipts. It also shows that 106,566 of these African American-owned firms had one or more employees, and that they employed a total of 909,552 workers with an annual payroll total of \$23.33 billion.

Panel A of Table 5.14 provides comparable information for Mississippi. The SBO counted 219,209 firms in Mississippi, of which 100,663 were nonminority male-owned, 60,840 were female-owned; 40,615 were African American-owned; 1,828 were Hispanic-owned; 4,002 were Asian-owned; 727 were Native American-owned; and 72 were Native Hawaiian- or Pacific Islander-owned.

Panel B in each Table converts the figures in Panel A to percentage distributions within each column. For example, Column (1) in Panel B of Table 5.14 shows that nonminority male-owned firms were 45.92 percent of all firms in Mississippi, female-owned firms were 27.75 percent, and African American-owned firms were 18.53 percent. Additionally, 0.83 percent of firms were Hispanic-owned, 1.83 percent were Asian-owned, 0.33 percent were Native American-owned, and 0.03 percent were Native Hawaiian- or Pacific Islander-owned.

Column (2) in Panel B provides the same percentage distribution for overall sales and receipts. Table 5.14, for example, shows that although nonminority male-owned firms were 45.92 percent of all firms, they accounted for 77.53 percent of all sales and receipts. African American-owned firms, in contrast, were 18.53 percent of all firms in Mississippi, but they accounted for only 1.97 percent of all sales and receipts. Similarly, women accounted for 27.75 percent of all firms in Mississippi but earned only 9.88 percent of sales and receipts.

Similar results are obtained when the survey results are restricted to firms with one or more paid employees. Column (3) in Table 5.14, for example, shows that nonminority male-owned firms accounted for 59.88 percent of all employer firms but earned 79.45 percent of all sales and receipts. African American-owned employer firms accounted for 4.16 percent of all employer firms but only 1.10 percent of all sales and receipts. Women-owned employer firms accounted for 16.49 percent of all employer firms but only 9.24 percent of all sales and receipts.

Large disparities between the fraction of firms that are minority- or women-owned and their fraction of sales and receipts in Mississippi are observed not only for African Americans and women, but also for Hispanic-owned firms, Asian-owned firms, Native American-owned firms, and Native Hawaiian- or Pacific Islander-owned firms.

The disparity indices are presented in Panel C of each table. Disparity indices of approximately 80 percent or less indicate disparate impact consistent with business discrimination (0 percent

## Market-Based Disparities in Business Formation and Business Owner Earnings

being complete disparity and 100 percent being full parity). In Mississippi (Table 5.14), the sales and receipts disparity indices (in columns 2 and 4) fall at or beneath the 80 percent threshold in 10 out of 11 cases. All of these disparity indices are statistically significant within a 95 percent confidence interval.

**Table 5.13. Disparity Ratios from the 2007 Survey of Business Owners, United States, All Industries**

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A. Levels</b>						
All Firms	26,294,860	10,949,461,874	5,189,968	10,015,142,962	56,626,554	1,940,572,944
Nonminority Male	10,943,636	7,725,275,376	2,753,871	7,255,760,511	37,138,139	1,386,782,737
Female	7,792,115	1,196,608,004	909,661	1,014,366,348	7,520,121	214,673,400
African American	1,921,864	135,739,834	106,566	97,144,898	909,552	23,334,792
Hispanic	2,260,269	350,661,243	248,852	279,920,707	1,908,161	54,295,508
Asian	1,549,559	506,047,751	397,426	453,574,194	2,807,771	79,230,459
Native Hawaiian/Pac. Islander	37,687	6,319,357	4,151	5,250,301	37,801	1,217,138
Am. Indian & Alaska Native	236,691	34,353,842	23,662	27,494,075	185,037	5,930,247
<b>Panel B. Column Percentages</b>						
All Firms	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Nonminority Male	41.62%	70.55%	53.06%	72.45%	65.58%	71.46%
Female	29.63%	10.93%	17.53%	10.13%	13.28%	11.06%
African American	7.31%	1.24%	2.05%	0.97%	1.61%	1.20%
Hispanic	8.60%	3.20%	4.79%	2.79%	3.37%	2.80%
Asian	5.89%	4.62%	7.66%	4.53%	4.96%	4.08%
Native Hawaiian/Pac. Islander	0.14%	0.06%	0.08%	0.05%	0.07%	0.06%
Am. Indian & Alaska Native	0.90%	0.31%	0.46%	0.27%	0.33%	0.31%
<b>Panel C. Disparity Ratios</b>						
		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Nonminority Male		169.52		136.54	123.60	134.68
Female		36.88		57.79	75.77	63.12
African American		16.96		47.24	78.23	58.56
Hispanic		37.26		58.29	70.28	58.35
Asian		78.43		59.14	64.75	53.32
Native Hawaiian/Pac. Islander		40.27		65.54	83.46	78.42
Am. Indian & Alaska Native		34.86		60.21	71.67	67.03

Source: NERA calculations using 2007 SBO.

Notes: (A) Figures are rounded. Rounding was performed subsequent to any mathematical calculations. (B) Excludes publicly-owned, foreign-owned, and not-for-profit firms. (C) "n/a" indicates that data were not disclosed due to confidentiality or other publication restrictions.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.14. Disparity Ratios from the 2007 Survey of Business Owners, State of Mississippi, All Industries**

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A. Levels</b>						
All Firms	219,209	86,747,632	39,031	79,266,532	472,209	12,914,308
Nonminority Male	100,663	67,256,779	23,373	62,978,097	343,667	10,229,320
Female	60,840	8,569,695	6,438	7,325,389	56,676	1,216,765
African American	40,615	1,707,276	1,625	873,752	11,466	211,395
Hispanic	1,828	323,691	278	252,067	2,759	57,585
Asian	4,002	1,405,965	1,405	1,241,827	11,878	196,322
Native Hawaiian/Pac. Islander	72	2,275	n/a	n/a	n/a	n/a
Am. Indian & Alaska Native	727	154,425	122	137,393	756	24,842
<b>Panel B. Column Percentages</b>						
All Firms	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Nonminority Male	45.92%	77.53%	59.88%	79.45%	72.78%	79.21%
Female	27.75%	9.88%	16.49%	9.24%	12.00%	9.42%
African American	18.53%	1.97%	4.16%	1.10%	2.43%	1.64%
Hispanic	0.83%	0.37%	0.71%	0.32%	0.58%	0.45%
Asian	1.83%	1.62%	3.60%	1.57%	2.52%	1.52%
Native Hawaiian/Pac. Islander	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	0.33%	0.18%	0.31%	0.17%	0.16%	0.19%
<b>Panel C. Disparity Ratios</b>						
Nonminority Male		168.84%		132.68%	121.53%	132.27%
Female		35.59%		56.03%	72.77%	57.12%
African American		10.62%		26.48%	58.32%	39.32%
Hispanic		44.75%		44.65%	82.03%	62.60%
Asian		88.78%		43.52%	69.88%	42.23%
Native Hawaiian/Pac. Islander		7.98%		n/a	n/a	n/a
Am. Indian & Alaska Native		53.68%		55.45%	51.22%	61.54%

Source and Notes: See Table 5.13.

## Market-Based Disparities in Business Formation and Business Owner Earnings

Table 5.15 shows comparable SBO data for the construction sector in the U.S. as a whole. Here, large disparities are evident for African Americans, Hispanics, Asians, Native Americans, Native Hawaiians and Pacific Islanders, and women. For example, although African Americans account for 3.75 percent of all firms in construction, they earn only 0.88 percent of all sales and receipts in that sector. Hispanics account for 10.16 percent of firms but only 3.79 percent of receipts. For Asians, the figures are 2.11 percent and 1.24 percent, respectively. For Native Americans, the figures are 1.12 percent and 0.56 percent, respectively. For women, disparities are not as acute as for minorities but are still fairly large. Women account for 8.01 percent of all construction firms but earned only 6.46 percent of construction sales and receipts.

Among firms with paid employees, large disparities are observed for African Americans, Hispanics, and Native Americans. Overall, disparities in this category appear somewhat less acute than among firms as a whole. However, they remain far larger than comparable figures for nonminority male-owned firms. This is evident in that the fraction of employer firms compared to the fraction of all firms is far higher among nonminority males than among other race and gender groups. In Table 5.15, for example, nonminority males represent 62.52 percent of all firms but 66.27 percent of employer firms. For all other groups, the direction of this ratio is reversed. That is, each group's fraction among employer firms is smaller than its fraction among firms as a whole, whereas for nonminority males it is larger.

Table 5.16 shows comparable results for the construction sector in Mississippi. Among all firms in construction, large disparities are observed for African Americans, Hispanics, Asians, and women.<sup>258</sup> Among firms with paid employees, large disparities are observed for African Americans, Hispanics, and women. As in Table 5.15, nonminority males have a much higher ratio of employer firms to firms as a whole than do minorities or women.

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<sup>258</sup> Results are not available for Native Americans or Native Hawaiians and Pacific Islanders because data were not disclosed due to Census confidentiality or other publication restrictions.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.15. Disparity Ratios from the 2007 Survey of Business Owners, United States, Construction**

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A. Levels</b>						
All Firms	3,353,169	1,499,596,401	752,350	1,345,891,690	6,250,139	272,620,302
Nonminority Male	2,096,431	1,140,441,771	498,581	1,041,607,378	4,523,906	205,558,987
Female	268,668	96,889,179	54,067	87,883,713	492,327	21,126,808
African American	125,818	13,188,433	9,605	9,808,001	56,088	1,976,639
Hispanic	340,770	56,769,929	38,319	41,512,416	260,420	8,918,859
Asian	70,722	18,664,077	10,542	16,005,420	77,302	3,353,304
Native Hawaiian/Pac. Islander	4,991	1,555,430	847	1,354,435	5,993	284,022
Am. Indian & Alaska Native	37,693	8,449,654	5,178	7,026,449	37,722	1,529,180
<b>Panel B. Column Percentages</b>						
All Firms	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Nonminority Male	62.52%	76.05%	66.27%	77.39%	72.38%	75.40%
Female	8.01%	6.46%	7.19%	6.53%	7.88%	7.75%
African American	3.75%	0.88%	1.28%	0.73%	0.90%	0.73%
Hispanic	10.16%	3.79%	5.09%	3.08%	4.17%	3.27%
Asian	2.11%	1.24%	1.40%	1.19%	1.24%	1.23%
Native Hawaiian/Pac. Islander	0.15%	0.10%	0.11%	0.10%	0.10%	0.10%
Am. Indian & Alaska Native	1.12%	0.56%	0.69%	0.52%	0.60%	0.56%
<b>Panel C. Disparity Ratios</b>						
		(2) vs. (1)		(4) vs. (3)	(5) vs. (3)	(6) vs. (3)
Nonminority Male		121.64		116.78	109.22	113.78
Female		80.64		90.86	109.61	107.84
African American		23.44		57.08	70.29	56.79
Hispanic		37.25		60.56	81.81	64.23
Asian		59.01		84.87	88.27	87.78
Native Hawaiian/Pac. Islander		69.69		89.39	85.17	92.54
Am. Indian & Alaska Native		50.13		75.85	87.69	81.50

Source and Notes: See Table 5.13.

## Market-Based Disparities in Business Formation and Business Owner Earnings

**Table 5.16. Disparity Ratios from the 2007 Survey of Business Owners, State of Mississippi, Construction**

	Number of Firms	Sales and Receipts (\$000s)	Employer Firms	Sales and Receipts (\$000s)	Employees	Payroll (\$000s)
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A. Levels</b>						
All Firms	39,385	12,596,588	4,903	10,775,624	52,094	1,900,658
Nonminority Male	26,870	10,685,161	3,565	9,382,241	43,179	1,623,617
Female	3,623	699,817	407	593,479	3,795	122,425
African American	4,987	219,767	189	84,231	744	14,053
Hispanic	389	67,789	24	36,769	184	3,735
Asian	179	32,786	10	26,192	90	2,933
Native Hawaiian/Pac. Islander	n/a	n/a	n/a	n/a	n/a	n/a
Am. Indian & Alaska Native	n/a	n/a	n/a	n/a	n/a	n/a
<b>Panel B. Column Percentages</b>						
All Firms	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Nonminority Male	68.22%	84.83%	72.71%	87.07%	82.89%	85.42%
Female	9.20%	5.56%	8.30%	5.51%	7.28%	6.44%
African American	12.66%	1.74%	3.85%	0.78%	1.43%	0.74%
Hispanic	0.99%	0.54%	0.49%	0.34%	0.35%	0.20%
Asian	0.45%	0.26%	0.20%	0.24%	0.17%	0.15%
Native Hawaiian/Pac. Islander	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Am. Indian & Alaska Native	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Panel C. Disparity Ratios</b>						
Nonminority Male		124.33%		119.75%	114.00%	117.48%
Female		60.39%		66.35%	87.76%	77.59%
African American		13.78%		20.28%	37.05%	19.18%
Hispanic		54.49%		69.71%	72.16%	40.15%
Asian		57.27%		119.18%	84.71%	75.66%
Native Hawaiian/Pac. Islander		n/a		n/a	n/a	n/a
Am. Indian & Alaska Native		n/a		n/a	n/a	n/a

Source and Notes: See Table 5.13.

## VI. Statistical Disparities in Capital Markets

### A. Introduction

Discrimination occurs whenever the terms of a transaction are affected by personal characteristics of the participants that are not relevant to the transaction. Among such characteristics, the most commonly considered are race, ethnicity and gender. In labor markets, this might translate into equally productive workers in similar jobs being paid different salaries because of their race, ethnicity or gender. In credit markets, it might translate into loan approvals differing across racial or gender groups with otherwise similar financial backgrounds.

In this Chapter, we examine whether there is evidence consistent with the presence of discrimination in the small business credit market against minority-owned or women-owned small businesses. Discrimination in the credit market against such businesses can have an important effect on the likelihood that they will succeed. Moreover, discrimination in the credit market might even prevent businesses from opening in the first place, might negatively impact the size a firm could obtain, and/or shorten its longevity in the market.<sup>259</sup>

In our analysis, we use data from the Federal Reserve Board to examine the existence or otherwise of discrimination in the small business credit market for 1993, 1998 and 2003. These surveys are based on a large representative sample of firms with fewer than 500 employees and are administered by the Federal Reserve Board and the U.S. Small Business Administration. The 1993 and 1998 surveys deliberately oversampled minority-owned firms but the 2003 survey did not.<sup>260</sup>

These data provide qualitative and quantitative evidence consistent with the presence of discrimination against minorities in the credit market for small businesses. For example, we find that African American-owned firms are much more likely to report being seriously concerned with credit market problems and report being less likely to apply for credit because they fear the loan would be denied. Moreover, after controlling for a large number of characteristics of the firms, we find that African American-owned firms, Hispanic-owned firms, and to a lesser extent other minority-owned firms, are substantially and statistically significantly more likely to be denied credit than are nonminority-owned firms. We find some evidence that women are discriminated against in this market as well. The principal results are as follows:

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<sup>259</sup> Again, as noted in Chapter V, these factors also illustrate why, in a disparity study intended to answer the question of whether discrimination is present in business enterprise, adjusting availability for “capacity” factors such as firm age, firm size or firm revenues, is not a legitimate practice when there is evidence that suggests that these factors themselves are tainted by discrimination. To do so would be to inappropriately introduce one or more endogenous variables into the analysis.

<sup>260</sup> The 2003 survey took other steps, however, to increase the likelihood that minority-owned and women-owned firms were captured in the sampling frame. For more details, see National Opinion Research Center (2005), p. 11.

- Minority-owned firms were more likely to report that they did not apply for a loan over the preceding three years because they feared the loan would be denied (see Tables 6.15, 6.22, 6.29).
- When minority-owned firms applied for a loan, their loan requests were substantially more likely to be denied than non-minorities, even after accounting for differences like firm size and credit history (see Tables 6.8, 6.9, 6.18, 6.19, 6.25, 6.26).
- When minority-owned firms *did* receive a loan, they were obligated to pay higher interest rates on the loans than comparable nonminority-owned firms (see Tables 6.13, 6.14, 6.21, 6.27).
- A larger proportion of minority-owned firms than nonminority-owned firms report that credit market conditions are a serious concern (see Tables 6.3, 6.4, 6.5, 6.6, 6.7, 6.17, 6.24).
- A larger share of minority-owned firms than nonminority-owned firms believes that the availability of credit is the most important issue likely to confront them in the upcoming year (see Tables 6.5, 6.6).
- There is no evidence that discrimination in the market for credit is significantly different in the East and West South Central census divisions or in the construction and construction-related professional services industries than it is in the nation or the economy as a whole (various tables).
- There is no evidence that the level of discrimination in the market for credit has diminished between 1993 and 2003 (various tables).

The structure of this Chapter is as follows. First, we outline the main theories of discrimination and discuss how they might be tested. Second, we examine the evidence on the existence of capital/liquidity constraints facing individuals in the mortgage market, households in the non-mortgage loan market, and for small businesses in the commercial credit market. Third, we describe the data files used in the remainder of the Chapter and then examine in more detail problems faced by minority-owned firms in obtaining credit. Fourth, we provide a series of answers to criticisms. Finally, we present our conclusions.

We begin with the 1993 dataset and continue chronologically through the 2003 dataset and then to evidence from NERA's own comparable surveys conducted in various geographies between 1999 and 2007. This chronological progression allows the reader to see the consistency of the main findings over time. This approach serves as well to demonstrate the value of over-sampling minority and female small business owners, as was the case in the 1993 and 1998 surveys, but not the 2003 survey. Unfortunately, the much anticipated 2008 survey results never materialized because the Federal Reserve cancelled this important survey effort.<sup>261</sup>

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<sup>261</sup> For more on this, see fn. 301 below.

## B. Theoretical Framework and Review of the Literature

Most recent economic studies of discrimination draw on the analyses contained in Gary Becker's (1957) *The Economics of Discrimination*. Becker's main contribution was to translate the notion of discrimination into financial terms. Discrimination, in this view, results from the desire of owners, workers, or customers to avoid contact with certain groups. This being the case, transactions with the undesired groups would require more favorable terms than those that occur with a desired group. Assume that the primary objective of a financial institution is to maximize their expected profits. The expected return on a loan will depend on the interest rate charged and the likelihood that a borrower defaults. The financial institution would approve any loan for which the expected return on the loan exceeded the cost of the funds to the institution. Discrimination would then result in either (a) higher interest rates being charged to undesired groups having otherwise similar characteristics to the desired group, or (b) requiring better characteristics (i.e., a lower expected default rate) from the undesired group at any given interest rate. In other words, applicants from the disadvantaged group might either be appraised more rigorously or be given less favorable terms on the loan.

A similar connection between the likelihood of loan approval and the race, ethnicity or gender of the applicant might also be found if lenders employ statistical discrimination—meaning that lenders use personal characteristics such as race, ethnicity or gender to infer the likelihood of default on the loan. If experience has suggested that certain groups of individuals are on average more or less likely to default, then the lender may use this information to economize on the costs of gathering more directly relevant information. Hence, discrimination would not reflect the preferences of the owner but would rather reflect an attempt to minimize costs. Empirically, the racial, ethnic or gender characteristics of the applicant could proxy for unobserved characteristics of their creditworthiness.

There has been an active debate about whether banks discriminate against minority applicants for mortgages. In particular, banks were often accused of “redlining”—that is, not granting loans for properties located in certain areas. To analyze that issue, the Home Mortgage Disclosure Act was passed to require lenders to disclose information on the geographic location of their home mortgage loans. These data, however, were not sufficient to assess whether or not there was discrimination in the market for mortgage loans.

In 1992, researchers at the Federal Reserve Bank of Boston collected additional information from mortgage lenders (Munnell, et al., 1996). In particular, they tried to collect any information that might be deemed economically relevant to whether a loan would be approved. In the raw data, non-minorities had 10 percent of their loans rejected whereas rejection rates were 28 percent for both African Americans and Hispanics. Even after the creditworthiness of the borrowers (including the amount of the debt, debt-to-income ratio, credit history, loan characteristics, etc.) were controlled for, African Americans were still found to be 7 percentage points less likely to be granted the loan. A variety of criticisms have been launched at this study (see, for example, Horne, 1994; Day and Liebowitz, 1998; Harrison, 1998). Responses to these criticisms are found in Browne and Tootell (1995).

In addition to the type of statistical analysis done in the Munnell, et al. (1996) study, two other approaches have been used to measure discrimination in mortgage markets. First, Federal Reserve regulators can examine a lending institution's files to try to identify any cases where a loan rejection looks suspicious. Second, audit studies have been used with paired "identical" applicants. Such studies have also found evidence of discrimination (*c.f.* Cloud and Galster, 1993) although the audit approach is not without its critics (Heckman, 1998).

Another relevant literature is concerned with the severity of liquidity constraints affecting consumers in non-mortgage credit markets. A consumer is said to be liquidity-constrained when lenders refuse to make the household a loan or offer the household less than they wished to borrow (Ferri and Simon, 1997). Many studies have suggested that roughly twenty percent of U.S. families are liquidity-constrained (*c.f.* Hall and Mishkin, 1982; and Jappelli, 1990). As might be expected, liquidity-constrained households are typically younger, with less wealth and accumulated savings (Hayashi, 1985; and Jappelli, 1990). The research shows minority households to be substantially more likely to be liquidity-constrained even when a variety of financial characteristics of households are controlled for (Jappelli, 1990; and Ferri and Simon, 1997).

We now turn to the more directly relevant evidence on liquidity constraints facing small businesses. Just like individuals and households, businesses can also face liquidity constraints.<sup>262</sup> Liquidity constraints can be a problem in starting a business as well as in running it. Discrimination in the credit market against minority-owned small businesses can have a devastating effect on the success of such businesses, and even prevent them from opening in the first place. Evidence of the latter effect is provided in the economics literature on self-employment.<sup>263</sup>

In his 2003 report for *Builders Association of Greater Chicago v. the City of Chicago*,<sup>264</sup> Bates argued that "from its origins, the black-business community has been constrained by limited access to credit, limited opportunities for education and training, and nonminority stereotypes about suitable roles for minorities in society" (Bates, 1989; Bates, 1993; Bates, 1973). Indeed, as Bates points out, Gunnar Myrdal observed,

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<sup>262</sup> Evans and Leighton (1989) and Evans and Jovanovic (1989) have argued formally that entrepreneurs face difficulties borrowing money. As in the discussion above, such individuals are labeled liquidity constrained by economists. Using data from the National Longitudinal Survey of Youth from 1966-1981 and the Current Population Surveys from 1968-1987, these authors found that, all else equal, people with greater family assets are more likely to switch to self-employment from employment. Blanchflower and Oswald (1998) studied the probability that an individual reports him or herself as self-employed. Consistent with the existence of capital constraints on potential entrepreneurs, their econometric estimates imply that the probability of being self-employed depends positively upon whether the individual ever received an inheritance or gift. Additionally, when directly questioned in interview surveys, potential entrepreneurs say that raising capital is their principal problem. Holtz-Eakin, et al. (1994a, 1994b) examine flows in and out of self-employment and find that inheritances both raise entry and slow exit. Black, de Meza and Jeffreys (1996) find that housing equity plays an important role in shaping the supply of entrepreneurs. Lindh and Ohlsson (1996) suggest that the probability of being self-employed increases when people receive windfall gains in the form of lottery winnings and inheritances.

<sup>263</sup> See Chapter V.

<sup>264</sup> 298 F.Supp.2d 725 (N.D. Ill. 2003).

The Negro businessman ... encounters greater difficulties than whites in securing credit. This is partly due to the marginal position of Negro business. It is also partly due to prejudicial opinions among whites concerning business ability and personal reliability of Negroes. In either case a vicious circle is in operation keeping Negro business down.”<sup>265</sup>

Bates goes on to argue that commercial banks lend most easily to nonminority males who possess significant amounts of equity capital to invest in their businesses (Bates, 1991a). Apart from banks, an important source of debt capital for small business is likely to be family and friends, but the low wealth of African American households reduces the availability of debt capital that family and friends could invest in small business operations (Bates, 1993; Bates, 1991b).

Additional evidence indicates that capital constraints for African American-owned businesses are particularly large. For instance, Bates (1989) finds that racial differences in levels of financial capital do have a significant effect upon racial patterns in business failure rates. Fairlie and Meyer (1996) find that racial groups with higher levels of unearned income have higher levels of self-employment. In an important paper, Fairlie (1999) uses data from the 1968-1989 Panel Study of Income Dynamics to examine why African American men are one-third as likely to be self-employed as nonminority men. The author finds that the large discrepancy is due to an African American transition rate into self-employment that is approximately one half the nonminority rate and an African American transition rate out of self-employment that is twice the nonminority rate. He finds that capital constraints—measured by interest income and lump-sum cash payments—significantly reduce the flow into self-employment from wage/salary work, with this effect being nearly seven times larger for self-employed African Americans than for nonminority self-employed persons. Fairlie then attempts to decompose the racial gap in the transition rate into self-employment into a part due to differences in the distributions of individual characteristics and a part due to differences in the processes generating the transitions. He finds that differences in the distributions of characteristics between African Americans and non-minorities explain only a part of the racial gap in the transition rate into self-employment. In addition, racial differences in specific variables, such as levels of assets and the likelihood of having a self-employed father provide important contributions to the gap. He concludes, however, that “the remaining part of the gap is large and is due to racial differences in the coefficients. Unfortunately, we know much less about the causes of these differences. They may be partly caused by lending or consumer discrimination against blacks” (1999, p. 14).

There is also research into racial differences in access to credit among small businesses. Cavalluzzo and Cavalluzzo (1998) use data from the 1988-1989 National Survey of Small Business Finances (NSSBF), conducted by the Board of Governors of the Federal Reserve System, to analyze differences in application rates, denial rates, and other outcomes by race, ethnicity and gender in a manner similar to the econometric models reported in this Study. This paper documents that a large discrepancy exists in credit access between non-minorities and minority-owned firms that cannot be explained by a handful of firm characteristics. Unfortunately, the earlier NSSBF data did not over-sample minority-owned firms and included limited information on a firm’s credit history and that of its owner, reducing the ability to

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<sup>265</sup> G. Myrdal (1944, p. 308).

provide a powerful test of the causal impact of race, ethnicity or gender on loan decisions. In an unpublished paper, Cole (1998) uses the 1993 NSSBF and estimates models of loan denials similar in nature to those discussed in this Study.

The present analysis takes advantage of the 1993 NSSBF data, the 1998 Survey of Small Business Finances (SSBF) data, and the 2003 SSBF data. All three datasets have better information on creditworthiness than did the earlier NSSBF data, and the 1993 and 1998 surveys have a larger sample of minority-owned firms than did the earlier NSSBF data. These datasets are also used to conduct an extensive set of specification checks designed to weigh the possibility that our results are subject to alternative interpretations.

## C. Empirical Framework and Description of the Data

### 1. Introduction

Disputes about discrimination typically originate in differences in the average outcomes for two groups. To determine whether a difference in the loan denial rate for African American-owned firms compared to nonminority-owned firms is consistent with discrimination, it is necessary to compare African American- and nonminority-owned firms that have similar risks of default; that is, the fraction of the African American firms' loans that would be approved if they had the same creditworthiness as the nonminority-owned firms. A standard approach to this problem is to statistically control for firms' characteristics relevant to the loan decision. If African American-owned firms with the same likelihood of default as nonminority-owned firms are less likely to be approved, then it is appropriate to attribute such a difference to discrimination.

Following Munnell, et al. (1996) we estimated the following loan denial equation:

$$(1) \quad \text{Prob}(D_i = 1) = \Phi(\beta_0 + \beta_1 CW_i + \beta_2 X_i + \beta_3 R_i),$$

where  $D_i$  represents an indicator variable for loan denial for firm  $i$  (that is, 1 if the loan is denied and 0 if accepted),  $CW$  represents measures of creditworthiness,  $X$  represents other firm characteristics,  $R$  represents the race, ethnicity or gender of the firm's ownership, and  $\Phi$  is the cumulative normal probability distribution.<sup>266</sup> This econometric model can be thought of as a reduced form version of a structural model that incorporates firms' demand for and financial institutions' supply of loan funds as a function of the interest rate and other factors.<sup>267</sup> Within the

<sup>266</sup> Additional discussion of Probit regression appears in Chapter V, Section C.1.

<sup>267</sup> Maddala and Trost (1994) describe two variants of such a model, one in which the interest rate is exogenous and another in which the interest rate is endogenously determined, but is capped so that some firms' loan applications are approved and others are rejected. If the interest rate is exogenous, they show that a reduced form model which controls for the loan amount, such as we report below, uniquely identifies supply-side differences in the treatment of African American-owned firms. If the interest rate is endogenous, a reduced form approach requires an assumption that the determinants of demand for nonminority and African American-owned firms are identical, other things being equal. The main alternative empirical strategy is to estimate a structural supply and demand model, in which proper identification generally is not feasible. Any characteristic of the borrower that affects his/her expected rate of return on the investment will affect his/her ability to repay and should be taken into consideration by the lender as well. For instance, in their structural model of mortgage decisions, Maddala

framework of this model, a positive estimate of  $\beta_3$  is consistent with the presence of discrimination.<sup>268</sup>

## 2. 1993 NSSBF Data

The 1993 NSSBF data contain substantial information regarding credit availability on a nationally representative target sample of for-profit, non-farm, non-financial business enterprises with fewer than 500 employees. The survey was conducted during 1994 and 1995 for the Board of Governors of the Federal Reserve System and the U.S. Small Business Administration; the data relate to the years 1992 and 1993. The data file used here contains 4,637 firms.<sup>269</sup> In this NSSBF file, minority-owned firms were over-sampled, but sampling weights are provided to generate nationally representative estimates. Of the firms surveyed, 9.5 percent were owned by African Americans, 6.4 percent were owned by Hispanics, and 7.4 percent were owned by individuals of other races (i.e., Asians/Pacific Islanders, Native Americans).<sup>270</sup>

Table 6.1 presents population-weighted sample means from these data for all firms in the sample that applied for credit. The estimates indicate that African American-owned firms are almost 2.5 times more likely to have a loan application rejected as are non-Hispanic White-owned firms (hereafter “nonminority”) (65.9 percent versus 26.9 percent).<sup>271</sup> Other minority groups are denied at rates higher than nonminorities as well, but the magnitude of the African American/nonminority differential is especially striking.

Minority-owned firms, however, do have characteristics that are different from those of nonminority-owned firms, and such differences may contribute to the gap in loan denial rates. For instance, minority-owned firms were younger, smaller (whether measured in terms of sales or employment), more likely to be located in urban areas, and more likely to have an owner with fewer years of experience than their nonminority counterparts. Minority firms were also less creditworthy, on average, than their nonminority counterparts, as measured by whether (a) the owner had legal judgments against him or her over the previous three years, (b) the firm had been delinquent for more than 60 days on business obligations over the preceding three years, or (c) the owner had been delinquent for more than 60 days on personal obligations over the prior three years. Additionally, compared to nonminority-owned firms, African American-owned

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and Trost (1994) impose questionable exclusion restrictions, like omitting marital status from the loan supply equation.

<sup>268</sup> The Equal Credit Opportunity Act prohibits discrimination in access to credit by race and would apply to both Becker-type and statistical discrimination.

<sup>269</sup> The median size of firms in the sample was 5.5 and mean size was 31.6 full-time equivalent employees; 440 firms out of 4,637 had 100 or more full-time equivalent employees.

<sup>270</sup> There were also two firms in the “Other race” category in 1993 that reported multiple or mixed race.

<sup>271</sup> Cavalluzzo and Cavalluzzo (1998) examined these outcomes using the 1987 NSSBF and similarly found that denial rates (weighted) are considerably higher for minorities. Nonminority-owned firms had a denial rate for loans of 22 percent compared with 56 percent for African Americans, 36 percent for Hispanics, and 24 percent for other races, which are broadly similar to the differences reported here. These estimates for minority groups are estimated with less precision, however, because of the smaller number of minority-owned firms in the 1987 sample.

firms were also more likely, on average, to have owners who had declared bankruptcy over the preceding seven years.

Minority-owned firms also sought smaller amounts of credit than nonminority-owned firms. This was particularly true for African American-owned firms, who requested loans that were, on average, about 60 percent smaller than those requested by nonminority-owned firms, and Hispanic-owned firms, who requested loans about 42 percent smaller than those requested by nonminority-owned firms.

The NSSBF database does not identify the specific city or state where the firm is located; instead, data are reported for four census regions, nine census divisions, and urban or rural location. Table 6.2 presents evidence for the East and West South Central (EWSC) divisions, which include the State of Mississippi and seven surrounding states.<sup>272</sup> The EWSC sample includes the owners of 783 firms, of which 512 owners (65.4%) said that they had applied for a loan over the preceding three-year period.

The overall denial rate of 24.6 percent in the EWSC is slightly lower than the national rate of 28.8 percent reported in Table 6.1. The difference in the denial rates between African American-owned firms and nonminority-owned firms, on the other hand, is slightly higher in the EWSC (45.4 percent) than in the nation as a whole (39.0). On balance, however, the weighted sample means are not significantly different in the EWSC than in the nation as a whole—either overall or by race, ethnicity or gender.

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<sup>272</sup> The EWSC includes Mississippi, Alabama, Kentucky, Tennessee, Arkansas, Louisiana, Texas, and Oklahoma.

**Table 6.1. Selected Population-Weighted Sample Means of Loan Applicants from 1993 NSSBF Data**

	All	Non-minority	African American	Hispanic	Other Races
% of Firms Denied in the Last Three Years	28.8	26.9	65.9	35.9	39.9
<i>Credit History of Firm/Owners</i>					
% Owners with Judgments Against Them	4.8	4.1	16.9	5.2	15.2
% Firms Delinquent in Business Obligations	24.2	23.1	49.0	25.1	31.6
% Owners Delinquent on Personal Obligations	14.0	12.6	43.4	14.8	24.5
% Owners Declared Bankruptcy in Past 7yrs	2.4	2.4	5.3	2.0	0.8
<i>Other Firm Characteristics</i>					
% Female-Owned	17.9	18.1	18.2	9.7	23.1
Sales (in 1,000s of 1992 \$)	1795.0	1870.6	588.6	1361.3	1309.1
Profits (in 1,000s of 1992 \$)	86.7	84.5	59.9	189.5	54.0
Assets (in 1,000s of 1992 \$)	889.4	922.5	230.3	745.6	747.3
Liabilities (in 1,000s of 1992 \$)	547.4	572.8	146.2	308.6	486.0
Owner's Years of Experience	18.3	18.7	15.3	15.9	14.9
Owner's Share of Business	77.1	76.5	86.4	83.9	77.1
% ≤ 8 <sup>th</sup> Grade Education	0.8	0.7	0.0	3.4	1.0
% 9 <sup>th</sup> -11 <sup>th</sup> Grade Education	2.2	2.2	3.7	1.8	1.2
% High School Graduate	19.6	19.7	12.8	27.7	14.9
% Some College	28.0	28.3	36.0	20.6	19.8
% College Graduate	29.2	29.2	28.0	24.1	36.5
% Postgraduate Education	20.2	19.9	19.5	22.3	26.6
% Line of credit	48.7	49.1	35.8	52.8	43.7
Total Full-time Employment in 1990	11.4	11.8	6.8	9.3	8.8
Total Full-time Employment in 1992	13.6	13.9	8.3	10.8	12.3
Firm age, in years	13.4	13.6	11.5	13.3	9.3
% New Firm Since 1990	9.4	9.4	13.0	6.4	9.5
% Firms Located in MSA	76.5	75.1	91.2	90.7	85.7
% Sole Proprietorship	32.8	32.3	48.6	38.2	24.2
% Partnership	7.8	7.8	7.7	6.7	7.9
% S Corporation	26.1	27.1	11.7	13.7	27.1
% C Corporation	33.4	32.8	32.1	41.4	40.8
% Existing Relationship with Lender	24.6	24.7	12.8	29.6	25.7
% Firms with Local Sales Market	54.1	54.7	42.9	55.0	47.4
<i>Characteristics of Loan Application</i>					
Amount Requested (in 1,000s of 1992 \$)	300.4	310.8	126.5	179.1	310.5
% Loans to be Used for Working Capital	8.4	8.8	4.9	4.6	5.5
% Loans to be Used for Equipment/Machinery	2.3	2.4	1.7	0.2	0.6
% Loans to be Used for Land/Buildings	0.4	0.4	0.9	0.0	0.0
% Loan to be Backed by Real Estate	28.3	28.6	24.7	26.2	24.7
Sample Size (unweighted)	2,007	1,648	170	96	93

Source: NERA calculations from 1993 NSSBF.

Notes: (1) Sample weights are used to provide statistics that are nationally representative of all small businesses.  
 (2) Sample restricted to firms that applied for a loan over the preceding three years.

Table 6.2. Selected Sample Means of Loan Applicants—EWSC

	All	Non-minority	African American	Hispanic	Other Races
% of Firms Denied in the Last Three Years	24.6	21.0	66.4	18.2	53.9
<i>Credit History of Firm/Owners</i>					
% Owners with Judgments Against Them	4.5	3.0	20.1	4.8	16.1
% Firms Delinquent in Business Obligations	21.6	18.8	56.2	11.0	49.1
% Owners Delinquent on Personal Obligations	11.3	8.6	44.7	6.8	31.5
% Owners Declared Bankruptcy in Past 7yrs	3.5	3.6	3.1	4.6	0.0
<i>Other Firm Characteristics</i>					
% Female-Owned	18.8	18.8	12.2	14.4	29.9
Sales (in 1,000s of 1992 \$)	1487.1	1595.9	365.7	1093.4	1179.0
Profits (in 1,000s of 1992 \$)	101.9	112.6	61.0	63.6	9.1
Assets (in 1,000s of 1992 \$)	723.7	774.1	144.5	326.8	893.4
Liabilities (in 1,000s of 1992 \$)	405.1	430.0	62.1	118.7	649.0
Owner's Years of Experience	18.9	19.9	13.5	15.6	12.5
Owner's Share of Business	79.5	78.6	88.4	90.2	72.5
% ≤ 8 <sup>th</sup> Grade Education	1.2	0.5	0.0	12.3	0.0
% 9 <sup>th</sup> -11 <sup>th</sup> Grade Education	2.5	2.8	0.0	0.0	2.5
% High School Graduate	17.2	16.8	4.7	23.2	27.0
% Some College	24.8	24.8	47.2	22.6	6.6
% College Graduate	32.2	32.8	37.5	25.0	27.7
% Postgraduate Education	22.2	22.3	10.6	17.0	36.3
% Line of credit	48.1	47.9	26.2	65.2	49.0
Total Full-time Employment in 1990	10.6	11.4	4.7	5.7	10.2
Total Full-time Employment in 1992	13.7	14.7	6.0	7.8	12.4
Firm age, in years	12.8	13.1	12.7	13.8	7.4
% New Firm Since 1990	9.8	10.3	15.7	2.0	5.5
% Firms Located in MSA	66.1	62.6	80.6	87.3	85.7
% Sole Proprietorship	36.9	35.3	63.3	52.7	21.2
% Partnership	5.5	5.1	13.3	6.8	2.8
% S Corporation	28.5	29.9	9.3	11.8	43.2
% C Corporation	29.1	29.7	14.0	28.7	32.7
% Existing Relationship with Lender	31.8	32.8	9.3	44.1	20.4
% Firms with Local Sales Market	54.9	56.7	52.7	49.3	34.1
<i>Characteristics of Loan Application</i>					
Amount Requested (in 1,000s of 1992 \$)	224.3	233.1	79.2	71.2	394.6
% Loans to be Used for Working Capital	9.5	10.0	5.2	2.5	12.9
% Loans to be Used for Equipment/Machinery	2.4	2.7	0.0	0.0	2.5
% Loans to be Used for Land/Buildings	0.2	0.0	3.5	0.0	0.0
% Loan to be Backed by Real Estate	25.4	25.9	18.7	21.1	27.3
Total Sample Size (unweighted)	783	550	87	86	60

Source: See Table 6.1.

Notes: (1) Sample weights are used to provide statistics that are nationally representative of all small businesses. (2) Some variable means are computed from slightly smaller samples because of missing values. (3) "Other Races" are not reported separately due to small sample size.

## D. Qualitative Evidence

Before moving on to the results of our multivariate analysis, we first report on what business owners themselves say are their main problems. While this evidence is not conclusive in determining whether discrimination exists, it highlights firms' perceptions regarding discrimination in obtaining credit. That African American-owned firms and other minorities report greater difficulty in obtaining credit than do nonminority-owned firms, but report other types of problems no more frequently, suggests either that discrimination takes place or that perceptions of discrimination exist that are unwarranted. It therefore complements the econometric analysis provided subsequently, which can distinguish between these two hypotheses.

Table 6.3 summarizes, for the U.S. as a whole, responses to specific questions about problems that firms confronted over the 12-month period before the date of response. In the top panel, respondents were asked to what extent credit market conditions had been a problem. African Americans and Hispanics were much more likely to say that it had been a “serious” problem (31.3 percent and 22.9 percent, respectively) than nonminorities (12.7 percent). The bottom panel of the table reports the results for eight other designated problem areas: (1) training costs; (2) worker’s compensation costs; (3) health insurance costs; (4) IRS regulation or penalties; (5) environmental regulations; (6) The American with Disabilities Act; (7) the Occupational Safety and Health Act; and (8) The Family and Medical Leave Act. Differences between African American-owned firms and Hispanic-owned firms, on the one hand, and nonminority-owned firms, on the other, are much less pronounced in these eight areas than they are in relation to credit market conditions.<sup>273</sup> The finding that minority-owned firms are largely indistinguishable from nonminority-owned firms in reporting a variety of problems, except for the case of credit, indicates that these firms perceive credit availability to be a particular problem for them.

Results are similar in Table 6.4 for the EWSC division—with African American-owned firms and Hispanic-owned firms being far more likely than nonminority-owned firms to say that credit market conditions had been a serious problem in the preceding 12 months.

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<sup>273</sup> We also estimated a series of ordered Logit equations (not reported) to control for differences across firms in their creditworthiness, location, industry, size, and the like. It is apparent from these regressions that African American-owned firms were more likely to report that credit market conditions were especially serious.

**Table 6.3. Problems Firms Experienced During Preceding 12 Months—USA**

	All	Non-minority	African American	Hispanic	Other Races
<i>Credit Market Conditions</i>					
Percent reporting not a problem	66.2	67.3	43.1	58.9	65.8
Percent reporting somewhat of a problem	20.1	19.9	25.6	18.2	21.3
Percent reporting serious problem	13.7	12.7	31.3	22.9	12.9
<i>Other Potential Problems (% reporting problem is serious)</i>					
Training costs	6.5	6.6	7.2	6.3	4.3
Worker's compensation costs	21.7	21.0	19.3	30.6	28.7
Health insurance costs	32.5	31.6	38.1	44.3	35.0
IRS regulation or penalties	12.3	11.8	17.1	17.9	13.2
Environmental regulations	8.5	8.5	5.6	7.4	11.0
Americans with Disabilities Act	2.7	2.6	3.6	2.7	3.9
Occupational Safety and Health Act	4.5	4.5	3.9	3.6	6.2
Family and Medical Leave Act	2.7	2.5	4.5	3.1	4.8
Number of observations (unweighted)	2,007	1,648	170	96	93

Source: See Table 6.1.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

**Table 6.4. Problems Firms Experienced During Preceding 12 Months—EWSC**

	All	Non-minority	African American	Hispanic	Other Races
<i>Credit Market Conditions</i>					
Percent reporting not a problem	66.4	68.2	43.8	53.9	73.7
Percent reporting somewhat of a problem	19.4	19.7	19.8	22.3	10.5
Percent reporting serious problem	14.2	12.0	36.4	23.8	15.7
<i>Other Potential Problems (% reporting problem is serious)</i>					
Training costs	8.2	8.8	6.9	2.3	9.1
Worker's compensation costs	24.0	24.1	16.6	21.5	30.6
Health insurance costs	32.3	30.3	31.5	42.5	47.8
IRS regulation or penalties	15.6	15.3	19.8	15.5	16.8
Environmental regulations	9.4	9.3	2.7	7.1	17.8
Americans with Disabilities Act	4.1	3.7	4.7	1.5	11.4
Occupational Safety and Health Act	6.5	6.3	3.7	4.3	13.9
Family and Medical Leave Act	3.7	3.5	1.9	4.0	6.4
Number of observations (unweighted)	783	550	87	86	60

Source: See Table 6.1.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

Tables 6.5 and 6.6 report the views of NSSBF respondents for the U.S. as a whole and the EWSC division, respectively, on the most important issues businesses expected to face over the next 12 months. Nationally, credit availability and cash flow again appear to be more important issues for African American-owned firms than for nonminority-owned firms. Nonminority-owned firms were especially worried about health care costs. Hispanic and other minority-owned firms were especially worried about general business conditions.

In the EWSC, credit availability is a far more important issue for African American-owned firms than for nonminority-owned firms. Almost six times as many African American-owned firms than nonminority-owned firms reported credit availability as the most important issue affecting them.

**Table 6.5. Percentage of Firms Reporting Most Important Issues Affecting Them Over the Next 12 Months—USA**

	All	Non-minority	African American	Hispanic	Other Races
Credit availability	5.9	5.5	20.5	5.3	4.3
Health care, health insurance	21.1	22.1	12.3	13.7	14.8
Taxes, tax policy	5.7	5.7	2.6	8.7	3.3
General U.S. business conditions	11.8	11.5	8.9	14.4	17.4
High interest rates	5.4	5.7	1.8	3.5	3.4
Costs of conducting business	3.3	3.3	3.8	3.8	3.6
Labor force problems	3.5	3.3	3.9	5.5	3.6
Profits, cash flow, expansion, sales	10.3	9.9	20.3	9.8	11.9
Number of observations (unweighted)	4,388	3,383	424	262	319

Source: See Table 6.1.

**Table 6.6. Percentage of Firms Reporting Most Important Issues Affecting Them Over the Next 12 Months—EWSC**

	All	Non-minority	African American	Hispanic	Other Races
Credit availability	5.0	3.8	22.5	9.3	3.1
Health care, health insurance	22.0	22.5	14.6	22.1	19.9
Taxes, tax policy	6.5	6.8	2.5	2.4	10.3
General U.S. business conditions	9.2	9.8	6.4	5.9	6.0
High interest rates	5.6	6.2	2.6	0.9	5.3
Costs of conducting business	2.0	2.0	1.2	3.9	0.0
Labor force problems	5.9	5.3	5.1	7.4	13.1
Profits, cash flow, expansion, sales	8.2	7.5	19.1	9.7	8.0
Number of observations (unweighted)	783	550	87	86	60

Source: See Table 6.1.

Acute credit availability problems for minorities have been reported in surveys other than the NSSBF. In the 1992 Characteristics of Business Owners (CBO) Survey, conducted by the Census Bureau, for example, when owners were asked to identify the impact of various issues on their firm’s profitability, 27.0 percent of African American-owned firms reporting an answer indicated that lack of financial capital had a strong negative impact—compared to only 17.3 percent among nonminority male-owned firms. Hispanic-owned firms and other minority-owned firms also reported higher percentages than nonminority male-owned firms—21.3 percent and

19.7 percent, respectively. Further, owners who had recently discontinued their business because it was unsuccessful were asked in the CBO survey to identify the reasons why. African American-owned firms, and to a lesser degree Hispanic-owned firms, other minority-owned firms, and women-owned firms, were much more likely than nonminority male-owned firms to report that the reason was due to lack of access to business or personal loans or credit. For unsuccessful firms that were discontinued, 7.3 percent of firms owned by nonminority males reported it was due to lack of access to business loans or credit compared to 15.5 percent for firms owned by African Americans, 8.8 percent for Hispanics, 6.1 percent for Other minorities, and 9.3 percent for women. Another 2.7 percent of nonminority males said it was due to lack of personal loans or credit compared to 8.4 percent for firms owned by African Americans, 5.8 percent for Hispanics, 6.4 percent for Other minorities, and 3.3 percent for women.<sup>274</sup>

A later study published by the U.S. Chamber of Commerce (2005) is also consistent with these findings from the 1993 NSSBF and the 1992 CBO.<sup>275</sup> The Chamber of Commerce survey was conducted in March and April 2005 and detailed the financing problems experienced by small business owners, 95 percent of whom had less than 100 employees. Over 1,000 business owners were interviewed. This survey showed that minority-owned businesses rely heavily on credit cards to fund their businesses; often do not apply for credit, even though they need it, for fear of being denied; and were especially likely to need working capital. In particular, as shown in Table 6.7, minority-owned firms report that availability of credit is their top problem. The biggest difference in responses between minorities and nonminority men and women was availability of credit: 19 percent of nonminority males report credit as their top problem compared with 54 percent for minority males. There was a 15 percentage point difference between minority women and nonminority women. In no other category is there more than a 10 percentage point difference for men or women.

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<sup>274</sup> Bureau of the Census (1997), Table 5a, p. 46, Table 1, p. 21.

<sup>275</sup> Although the CBO is part of the Economic Census, it was not published in 1997. In 2002, the name was changed to the Survey of Business Owners (SBO). Unfortunately, questions relating to the importance of access to financial loans and credit to business success were not included in the 2002 survey.

**Table 6.7. Types of Problems Facing Your Business, by Race and Gender**

	Non-minority Male	Non-minority Female	Minority Male	Minority Female	African American	Hispanic	Asian/Pacific Islander
Availability of credit	19	23	54	38	46	52	34
Rising health care costs	60	49	50	41	31	42	66
Excessive tax burden	49	46	48	42	46	34	51
Lack of qualified workers	37	28	33	17	22	20	34
Rising energy costs	37	35	36	35	29	34	44
Rising costs of materials	44	47	36	47	53	42	32
Legal reform	21	15	15	12	11	10	17
Number of firms	415	356	80	81	55	50	41

Source: U.S. Chamber of Commerce (2005), Appendix tables, page 55, downloadable at [http://www.uschamber.com/publications/reports/access\\_to\\_capital.htm](http://www.uschamber.com/publications/reports/access_to_capital.htm) (viewed 3 July 2012).

Notes: (1) Percentages may total to more than 100% because respondents had the option to select multiple choices. (2) “Minority” also includes 14 firms owned by Native Americans.

In summary, African American-owned and Hispanic-owned firms in particular reported that they had problems with the availability of credit in the past and expected that such difficulties would continue into the future. Whether or not these perceptions reflect actual discrimination can be tested in the econometric analyses to follow.

### **E. Differences in Loan Denial Rates by Race, Ethnicity or Gender**

Evidence presented to this point indicates that minority-owned firms are more likely to be denied loans and report that their lack of access to credit significantly impairs their business. Can these differences be explained by such things as differences in size, creditworthiness, location, or other factors as some have suggested in the literature on discrimination in mortgage lending (Horne, 1994; Bauer and Cromwell, 1994; and Yezer, Phillips, and Trost, 1994)? To address this question, we turn to an econometric examination of whether the loan requests made by minority-owned firms are more likely to be denied, holding constant important differences among firms.

In Table 6.8 and Table 6.9, we report the results from a series of loan denial Probit regressions of the form specified in Equation (1) using data from the 1993 NSSBF for the U.S. and the EWSC division.<sup>276</sup> As indicated earlier, the 1993-2003 datasets have the particular advantage that they include information that can be used to proxy an applicant’s creditworthiness. We report

<sup>276</sup> Firms owned 50-50 by minorities and non-minorities are excluded from this and all subsequent analyses, as are nonminority firms owned 50-50 by women and men.

estimates from these models that can be interpreted as changes or differences in loan denial probabilities depending on the type of variables considered. For indicator variables, such as race, ethnicity, and gender indicators, estimates show differences in loan denial probabilities between the indicated group and the base group.<sup>277</sup> In Column (1) of Table 6.8 (in which the regression model contains only race and gender indicators), the estimated coefficient of 0.443 on the African American indicator can be interpreted as indicating that the denial rate for African American-owned businesses is 44.3 percentage points higher than that for nonminority male-owned firms.<sup>278</sup>

The remainder of Table 6.8 includes additional explanatory variables to hold constant differences in the characteristics of firms that may vary by race, ethnicity or gender.<sup>279</sup> In Column (2) a number of controls are included that distinguish the creditworthiness of the firm and the owner. Many are statistically significant on a two-tailed test at conventional levels of significance with the expected signs. For instance, having been bankrupt or had legal judgments against the firm or owner raises the probability of denial; stronger sales lower this probability. Even after controlling for these differences in creditworthiness, however, African American-owned firms remain 29 percentage points more likely than nonminority-owned firms to have their loan request denied.

The models reported in Columns (3) through (5) of Table 6.8 control for an array of additional characteristics of firms. Column (3) adds 39 additional characteristics of the firm and the loan application, including such factors as level of employment, change in employment, the size of the loan request, and the use of the loan. Column (4) includes variables to control for differences across regions of the country and major industry groups. Column (5) adds variables indicating the month and year in which the loan was requested and the type of financial institution to which the firm applied.<sup>280</sup> In total, these three columns add 176 variables to the more parsimonious

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<sup>277</sup> For “continuous” variables, such as profits and sales, estimates can be thought of as changes in loan denial probability when the continuous variable changes by one unit. For example, in Column (2) of Table 6.8, the estimated coefficient of -0.003 on owner’s years of experience indicates that one additional year of owner’s experience is related to -0.3 percentage point reduction in loan denial rate.

<sup>278</sup> This estimate largely replicates the raw difference in denial rates between African American-owned and nonminority-owned businesses reported in Table 6.1. The raw differential observed there ( $0.659 - 0.269 = 0.39$ ) differs slightly from the 0.443 differential reported here because this specification also controls for whether the business is owned by a White Female and because the regressions are unweighted whereas the descriptive statistics are weighted using the sample weights. When a full set of explanatory control variables are included, the unweighted estimates are insignificantly different from the weighted estimates, hence in Table 6.8 and subsequent tables we report only unweighted estimates.

<sup>279</sup> In preliminary analyses, these models were also estimated separately, focusing specifically on the differences in coefficient estimates between nonminorities and African Americans. The F-Test conducted to determine whether parameter estimates were the same for African Americans and nonminorities rejected this null hypothesis. Next, the estimates obtained by estimating the model separately by race were used to conduct an Oaxaca (1973) decomposition. The results from this analysis were similar to those obtained by restricting the coefficients to be the same between African Americans and nonminorities and using the coefficient on the African Americans indicator variable to measure the gap between groups. In this Chapter, all the results are reported in this simpler format for ease of exposition and interpretation.

<sup>280</sup> Approximately four out of five (80.5%) of the firms who required a loan applied to a commercial bank. Overall, seventeen different types of financial institutions were tabulated, although only the following accounted for more

specification reported in Column (2).<sup>281</sup> Nevertheless, the estimated disadvantage experienced by African American-owned firms in obtaining credit remains large and statistically significant. The estimate from each of the three additional columns indicates that African American-owned firms are 24 percentage points more likely than nonminority male-owned firms to have their loan application denied even after controlling for the multitude of factors we have taken into consideration.

The results also indicate that Asians/Pacific Islanders had significantly higher denial rates than nonminority males—12 percentage points. There is little evidence in the 1993 national data, however, that denial rates for firms owned by Native Americans or Hispanics were significantly different from the denial rates of firms owned by nonminorities; or that denial rates for firms owned by nonminority women were significantly different from those for firms owned by nonminority men.<sup>282</sup>

In Table 6.9, we see results for the EWSC division similar to those reported in Table 6.8 for the nation as a whole. The table shows that the results of our loan denial model in the EWSC are not substantially different from the nationwide results reported in Table 6.8. The indicator variable for the EWSC division is negative and significant, indicating that denial rates, on average, are lower in the EWSC than in the nation as a whole, but its significance decreases as more control variables are included in the model. With the exception of Asian/Pacific Islander-owned firms, the interaction terms between race, ethnicity or gender and the EWSC division indicator are not statistically significant, though the coefficients are generally positive (indicating higher denial probabilities). The interaction term between Asians/Pacific Islanders and the EWSC division is significant and indicates increased denial probabilities for this group in the EWSC.<sup>283</sup>

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than 1% of the (weighted) total: Finance Companies (4.9%); Savings Banks (2.5%); Savings & Loans (2.3%); Leasing Companies (2.1%); and Credit Unions (2.0%).

<sup>281</sup> One piece of information to which we did not have access in the 1993 NSSBF or the 1998 SSBF because of confidentiality concerns was each firm's credit rating. A working paper by Cavalluzzo, Cavalluzzo, and Wolken (1999) was able to incorporate Dun & Bradstreet credit ratings for each firm because the authors' connection to the Federal Reserve Board enabled them to access the confidential firm identifiers. They added these credit rating variables in a model comparable to that reported here and found the results insensitive to the inclusion. The 2003 SSBF includes Dun & Bradstreet credit ratings for each firm. Below, we discuss the impact of incorporating them into a model similar to that presented in Table 6.8 (see Tables 6.27 and 6.28).

<sup>282</sup> It would be a mistake to interpret a lack of statistical significance (as opposed to substantive significance) in any of the Tables in Chapter 6 as a lack of adverse disparity. While tests for statistical significance are very useful for assessing whether chance can explain disparities that we observe, they do have important limitations. First, the fact that a disparity is not statistically significant does not mean that it *is* due to chance. It merely means that we cannot rule out chance. Second, there are circumstances under which tests for statistical significance are not helpful for distinguishing disparities due to chance from disparities due to other reasons (e.g., discrimination). In the particular statistical application presented in this chapter, the chance that a test for statistical significance will incorrectly attribute to chance disparities that are due to discrimination becomes greater when relatively small sample sizes are present for an affected group.

<sup>283</sup> The number of Native Americans and Hispanics in the EWSC sample was too small to yield statistical results.

**Table 6.8. Determinants of Loan Denial Rates—USA**

	(1)	(2)	(3)	(4)	(5)
African American	0.443 (11.21)	0.288 (6.84)	0.237 (5.57)	0.235 (5.22)	0.241 (5.13)
Asian/Pacific Islander	0.225 (4.21)	0.171 (3.18)	0.140 (2.56)	0.121 (2.15)	0.119 (2.07)
Native American	-0.016 (0.11)	-0.141 (1.06)	-0.097 (0.71)	-0.052 (0.35)	-0.083 (0.56)
Hispanic	0.129 (2.62)	0.070 (1.42)	0.067 (1.36)	0.035 (0.70)	0.031 (0.63)
Nonminority female	0.088 (2.65)	0.048 (1.45)	0.047 (1.45)	0.036 (1.06)	0.033 (0.94)
Judgments		0.143 (2.84)	0.129 (2.56)	0.124 (2.40)	0.121 (2.29)
Firm delinquent		0.176 (6.50)	0.178 (6.43)	0.195 (6.77)	0.208 (7.00)
Personally delinquent		0.161 (4.45)	0.128 (3.56)	0.124 (3.38)	0.119 (3.17)
Bankrupt past 7 years		0.208 (3.11)	0.179 (2.68)	0.162 (2.37)	0.167 (2.33)
\$1992 profits (*10 <sup>8</sup> )		-0.000 (0.89)	-0.000 (1.64)	-0.000 (1.78)	-0.000 (1.83)
\$1992 sales (*10 <sup>8</sup> )		-0.000 (3.08)	-0.000 (3.38)	-0.000 (3.28)	-0.000 (3.38)
\$1992 assets (*10 <sup>8</sup> )		0.000 (0.51)	0.000 (0.60)	0.000 (0.40)	0.000 (0.37)
\$1992 liabilities (*10 <sup>8</sup> )		0.000 (0.61)	0.000 (1.11)	0.000 (1.04)	0.000 (1.17)
Owner years of experience		-0.003 (2.59)	-0.001 (1.30)	-0.002 (1.55)	-0.002 (1.72)
Owner share of business		0.001 (1.91)	0.000 (0.71)	0.000 (0.26)	0.000 (0.30)
Owner Education (5 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (13 variables)	No	No	Yes	Yes	Yes
Geographic Division (8 indicator variables)	No	No	No	Yes	Yes
Industry (60 indicator variables)	No	No	No	Yes	Yes
Month/Year of Application (51 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (16 indicator vars.)	No	No	No	No	Yes
N	2,007	2,007	2,006	1,985	1,973
Pseudo R <sup>2</sup>	.0608	.1412	.2276	.2539	.2725
Chi <sup>2</sup>	143.6	333.4	537.3	595.4	635.8
Log likelihood	-1108.8	-1013.8	-911.6	-874.8	-848.7

Source: See Table 6.1.

Notes: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) “Other firm characteristics” include variables indicating whether the firm had a line of credit, 1990 employment, firm age, metropolitan area, a new firm since 1990, legal form of organization (sole proprietorship, partnership, S-corporation, or C-corporation), 1990-1992 employment change, existing long run relation with lender, geographic scope of market (local, regional, national or international), the value of the firm’s inventory, the level of wages and salaries paid to workers, the firm’s cash holdings, and the value of land held by the firm. (3) “Characteristics of the loan” include the size of the loan applied for, a variable indicating whether the loan was backed by real estate, and twelve variables indicating the intended use of the loan.

**Table 6.9. Determinants of Loan Denial Rates—EWSC Division**

	(1)	(2)	(3)	(4)	(5)
African American	0.424 (9.54)	0.273 (5.89)	0.222 (4.76)	0.218 (4.44)	0.219 (4.29)
Asian/Pacific Islander	0.162 (2.75)	0.111 (1.88)	0.080 (1.37)	0.057 (0.96)	0.056 (0.92)
Native American	-0.028 (0.14)	-0.103 (0.52)	-0.029 (0.13)	-0.006 (0.02)	-0.063 (0.25)
Hispanic	0.146 (2.49)	0.086 (1.48)	0.055 (0.97)	0.025 (0.44)	0.021 (0.37)
Nonminority female	0.083 (2.3)	0.047 (1.32)	0.044 (1.25)	0.032 (0.89)	0.022 (0.58)
African American*EWSC	0.112 (1.19)	0.087 (0.90)	0.080 (0.85)	0.062 (0.65)	0.081 (0.81)
Asian/Pacific Islander*EWSC	0.328 (2.32)	0.304 (2.18)	0.324 (2.17)	0.335 (2.18)	0.331 (2.10)
Native American*EWSC	0.082 (0.26)	-0.061 (0.20)	-0.090 (0.33)	-0.040 (0.14)	0.010 (0.03)
Hispanic*EWSC	-0.013 (0.13)	-0.019 (0.19)	0.066 (0.60)	0.098 (0.85)	0.106 (0.90)
Nonminority female*EWSC	0.032 (0.37)	0.013 (0.15)	0.028 (0.32)	0.039 (0.42)	0.088 (0.89)
EWSC division	-0.073 (2.22)	-0.058 (1.70)	-0.048 (1.41)	-0.071 (1.39)	-0.081 (1.55)
Creditworthiness Controls (4 variables)	No	Yes	Yes	Yes	Yes
Owner Education (5 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (13 variables)	No	No	Yes	Yes	Yes
Geographic Division (7 indicator variables)	No	No	No	Yes	Yes
Industry (60 indicator variables)	No	No	No	Yes	Yes
Month/Year of Application (51 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (16 indicator vars.)	No	No	No	No	Yes
N	2,007	2,007	2,006	1,985	1,973
Pseudo R <sup>2</sup>	0.0649	0.1443	0.2301	0.2534	0.2722
Chi <sup>2</sup>	153.13	340.71	543.19	594.25	635.22
Log likelihood	-1104.0	-1010.2	-908.6	-875.3	-849.0

Source: See Table 6.1.

Note: Creditworthiness controls are those used in Table 6.8 above.

Although the results provided so far strongly indicate that financial institutions treat African American-owned and nonminority male-owned small businesses differently in lending, other considerations may limit our ability to interpret this finding as discrimination. Of perhaps greatest concern is the possibility that we may not have adequately controlled for differences in the creditworthiness of firms. If African American-owned firms are less creditworthy and we have failed to sufficiently capture those differences, then we would be inadvertently attributing the racial difference in loan denial rates to discrimination. On the other hand, if financial institutions discriminate against African American-owned firms, then the greater likelihood of denial for African Americans in earlier years is likely to hurt the performance of these firms and appear to make them look less creditworthy. Therefore, controlling for creditworthiness will likely understate the presence of discrimination.

As a check on the foregoing results, therefore, our first approach was to identify the types of information that financial institutions collect in order to evaluate a loan application and compare that with the information available to us in the NSSBF. First, a selection of small business loan applications was collected from various banks. An Internet search of web sites that provide general business advice to small firms was also conducted. Such sites typically include descriptions of the loan application process and list the kinds of information typically requested of applicants.<sup>284</sup>

Bank loan applications typically request detailed information about both the firm and its owner(s). Regarding the firm, banks typically request information on: (a) type of business, (b) years in business, (c) number of full-time employees, (d) annual sales, (e) organization type (corporation or proprietorship), (f) owner share(s), (g) assets and liabilities, (h) whether the business is a party to any lawsuit, and (i) whether any back taxes are owed. Regarding the owner's personal finances, banks typically ask for: (a) assets and liabilities, (b) sources and levels of income, and (c) whether the owner has any contingent liabilities. Some applications ask explicitly if the firm qualifies as a minority-owned enterprise for the purposes of certain government loan guarantee programs. The race of the applicant, however, would be readily identifiable even in the absence of such a question since most of these loans would be originated through face-to-face contact with a representative of the financial institution.

These criteria seem to match quite closely the information available in the 1993 NSSBF. The particular strength of the NSSBF is the detail available on the firm, which covers much of the information typically requested on loan application forms. The only shortcoming that we have identified in the 1993 NSSBF data is that less detail is available on the finances of the owner of the firm, as opposed to the firm itself.<sup>285</sup> Although our creditworthiness measures enable us to identify those owners who have had serious financial problems (like being delinquent on personal obligations), we have no direct information regarding the owner's assets, liabilities, and income (as opposed to those of the firm). These factors would be necessary to identify whether the business owner has sufficient personal resources to draw upon should the business encounter

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<sup>284</sup> An example of a typical application form is presented as Appendix B in Blanchflower, Levine, and Zimmerman (2003).

<sup>285</sup> This is remedied in the 1998 SSBF and the 2003 SSBF, discussed below, both of which contain information on the owner's home equity, and personal net worth excluding home equity and business equity.

difficulties and to determine the personal collateral available should the firm default on its obligation. We do have measures of the owner's human capital in the form of education and experience, which likely capture at least some of the differential in available personal wealth across firm owners. Nevertheless, our potentially incomplete characterization of the business owner's personal financial condition in the 1993 NSSBF dataset may introduce a bias into our analysis if African American business owners have fewer resources than nonminority business owners. As we will see below, however, and as noted in the previous footnote, this deficiency is rectified in the 1998 and 2003 SSBF datasets, with little change in the main findings.

To assess the potential impact of this problem on our results, we separately examined groups of firms who differ in the degree to which personal finances should influence the loan decision and compare the estimated disadvantage experienced by African American-owned firms in different groups. First, we examine proprietorships and partnerships separately from corporations since owners of incorporated businesses are at least somewhat shielded from incurring the costs of a failed business. Second, we divide firms according to size.<sup>286</sup> Both larger small businesses and those that have been in existence for some time are more likely to rely on the business's funds, rather than the owner's, to repay its obligations. Third, we consider firms that have applied for loans to obtain working capital separately from those firms that seek funds for other purposes (mainly to purchase vehicles, machinery and equipment, and buildings or land). Loans made for one of these other purposes are at least partially collateralized because the financial institution could sell them, albeit at a potentially somewhat reduced rate, should the small business default.<sup>287</sup>

Results from these analyses provide no indication that omitting the owner's personal wealth substantially biases the results presented above in Tables 6.8 and 6.9. Estimates presented in row numbers 1 through 8 of Table 6.10 indicate that African American-owned small businesses are significantly more likely to have their loan applications rejected regardless of the category of firm considered. In particular, when samples are restricted to corporations, larger firms, and firms seeking credit for uses other than working capital, African American-owned firms are 18, 25, and 16 percentage points more likely, respectively, to have their loan application rejected even though personal resources should be less important in these categories. Moreover, in each group where there are two types of firms (large and small, etc.), the estimates for the two types of firms are not significantly different from each other.

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<sup>286</sup> As reported earlier, the mean and median size of firms is 5.5 and 31.6 full-time equivalent workers, respectively. Fourteen percent of firms have one or fewer employees and 27 percent have two or fewer employees. In the EWSC, the mean and median size of firms is 6.0 and 34.3 full-time equivalent workers, respectively. Twelve percent of firms have one or fewer employees and 26 percent have two or fewer employees.

<sup>287</sup> As indicated earlier, greater personal wealth may improve a small business's chances of obtaining credit because it provides collateral should the loan go bad and because wealthy owners can use their own resources to weather bad times, improving the likelihood of repayment. Our separate analysis of corporations and proprietorships and of large and small firms does not account for this second reason because corporations and large businesses may still need to draw on the owner's personal wealth to help it survive short-term shocks. Businesses that have been in existence for several years, however, are less likely to experience these shocks, making them less likely to require infusions from the owner's personal wealth. A loan used to purchase equipment that can be sold if the firm defaults similarly insulates the bank from the need to seek repayment directly from the owner.

Another issue is whether the racial differences in loan denial rates among firms with similar characteristics can be attributable to differences in the geographic location of African American- and nonminority-owned firms. If, for example, African American-owned firms are more likely to be located in the central city, and a central city location is negatively correlated with profitability and the ability to repay debt, then financial institutions may be acting optimally in rejecting the loan applications of African American-owned firms at a higher rate. As indicated earlier, this type of behavior is labeled “statistical discrimination.” In the subsequent text and tables, we present a limited analysis to address whether or not this type of behavior takes place.<sup>288</sup>

To identify whether lenders’ behavior is consistent with this hypothesis, we distinguish those firms that self-classified their sales market as being local rather than regional, national, or international. A central city location should have a greater impact on future profit expectations for those firms that operate on a local level. If minority-owned firms are more likely to locate in the central city, racial differences in loan approval rates should be greater in the firms that sell in the local market area. The results of this test, reported in row numbers 9 and 10 of Table 6.10, reject the hypothesis that differences in loan denial rates are attributable to different propensities to locate in the center of a city. Estimates indicate that African American-owned firms that sell to the local market are 11 percentage points more likely to have their loan applications denied compared to a 20 percent excess denial rate for firms selling primarily to regional, national, or international markets.

In order to determine whether the findings for the EWSC division were different from those for the nation, in the second column of Table 6.10 we also report the coefficient and t-statistics on an interaction term between the EWSC division and African American ownership. In only one of 14 cases was the estimated coefficient on this interaction significant. There is, therefore, little evidence that the figures for the EWSC are significantly different from those in the nation as a whole.

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<sup>288</sup> A strong test to distinguish between statistical discrimination and “Becker-Type” discrimination (referring to the standard economic model of discrimination first expounded by University of Chicago economist Gary Becker) would require a tremendous amount of detail about the specific location of the firm, characteristics of its surrounding area, characteristics of neighboring firms, and the like, which were unavailable to us. As indicated earlier, both forms of discrimination are illegal and this Chapter applies a definition that incorporates both.

Table 6.10. Alternative Models of Loan Denials

Specification	African American	African American* EWSC	Asian/Pacific Islander	Hispanic	Non-minority Female	Sample Size
All	0.222 (4.76)	0.080 (0.85)	0.080 (1.37)	0.055 (0.97)	0.044 (1.25)	2,006
<i>Organization Type</i>						
1) Proprietorships and Partnerships	0.278 (3.03)	0.039 (0.24)	0.177 (1.51)	-0.021 (0.21)	-0.020 (0.29)	536
2) Corporations	0.181 (3.36)	0.175 (1.17)	0.050 (0.73)	0.092 (1.25)	0.069 (1.66)	1,457
<i>Age of Firm</i>						
3) 12 Years or Under	0.243 (3.80)	0.150 (1.02)	0.117 (1.41)	-0.001 (0.01)	0.029 (0.56)	1,074
4) Over 12 Years	0.180 (2.56)	0.068 (0.54)	-0.006 (0.08)	0.114 (1.39)	0.087 (1.69)	926
<i>1993 Firm Size</i>						
5) Fewer than 10 Employees	0.193 (2.97)	0.251 (1.71)	0.078 (0.92)	-0.019 (0.24)	-0.018 (0.34)	868
6) 10 or More Employees	0.245 (3.39)	-0.082 (0.65)	0.077 (0.85)	0.145 (1.61)	0.111 (2.18)	1,132
<i>Intended Use of Loan</i>						
7) Working Capital	0.241 (4.21)	0.176 (1.22)	0.035 (0.47)	0.039 (0.51)	0.041 (0.85)	1,086
8) Other Use	0.158 (1.93)	0.037 (0.27)	0.167 (1.74)	0.081 (0.94)	0.045 (0.87)	917
<i>Scope of Sales Market</i>						
9) Local	0.108 (1.50)	0.348 (2.06)	0.097 (1.26)	0.007 (0.10)	0.041 (0.78)	875
10) Regional, National, or International	0.199 (4.94)	-0.013 (0.24)	0.031 (0.65)	0.071 (1.34)	0.031 (1.19)	1,129
<i>Creditworthiness</i>						
11) No Past Problems	0.244 (4.07)	-0.006 (0.06)	0.113 (1.91)	0.038 (0.68)	0.069 (2.02)	1,386
12) One Past Problem	0.286 (2.56)	-0.072 (0.36)	-0.095 (0.55)	0.184 (1.11)	0.041 (0.40)	376
13) More Than One Problem	0.283 (2.71)	0.203 (0.77)	0.258 (1.74)	-0.011 (0.05)	-0.125 (0.82)	231

Source: See Table 6.1.

Notes: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) Each line of this table represents a separate regression with the same control variables as Column 3 of Table 6.8. (3) The dependent variable in all specifications represents an indicator for whether or not a loan application was denied. (4) Control for EWSC also included.

We also estimate models that address a potential weakness in the specific functional form with which we control for differences in credit history across firms. As shown in Tables 6.1 and 6.2,

African American-owned firms are considerably more likely to have had troubles in the past in the form of judgments against them, late payments by the firm or its owner, or past bankruptcies. The model specifications reported in Tables 6.8 and 6.9 implicitly assume that these past problems are additive in their effect on loan denials and one might suspect the marginal impact would rise as past problems rise. Therefore, in the final three rows of Table 6.10, we separated firms by the number of past problems experienced. In Rows 11 through 13, we restricted the sample to those firms that have never had any past credit problems, those firms that reported one problem only, and those firms that reported more than one of these problems, respectively. The results indicate that even African American-owned firms with clean credit histories are at a significant disadvantage in getting their loans approved, holding constant their other characteristics. In fact, the estimated differential in loan approval rates between African American- and nonminority-owned firms is statistically indistinguishable within each of these groups. Asian/Pacific Islander-owned firms and nonminority female-owned firms with clean credit histories, are also at a significant disadvantage relative to nonminority-male owned firms.

Finally, we considered whether African American-owned firms are treated differently from nonminority-owned firms when requesting credit from other sources. The source of credit we examined is credit cards. Such an analysis provides a unique advantage because credit card applications are more likely to be filled out and mailed in, so it is more likely that the race of the applicant is unknown to the financial institution, at least in the case of African American-owned firms and Native American-owned firms, where surname is unlikely to provide any signal about minority status. On the other hand, for Asian/Pacific Islander and Hispanic applicants, it is possible that surname does provide such a signal, albeit a somewhat noisy one. The 1993 NSSBF asked respondents whether they used either a business or personal credit card for business purposes. Although our analysis of use of credit cards does not condition on application, a finding that African American- and nonminority-owned small businesses are equally likely to use credit cards may still provide evidence supporting discrimination in small-business lending. In fact, if financial institutions discriminate against African Americans in providing small business loans, we may even expect to see African Americans use credit cards more often than nonminorities since they have fewer alternatives. Even though many institutions may offer both types of credit, they may only be aware of the race of the applicant in a small business loan.<sup>289</sup>

In Tables 6.11 and 6.12, we examine the probability that a firm uses either a business credit card (Row 1) or a personal credit card (Row 2) to finance business expenses holding constant other differences across firms.<sup>290</sup> There is no evidence, either for the U.S. as a whole or for the EWSC, that African American-owned firms are less likely to access either business or personal credit

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<sup>289</sup> It appears that race may also rarely be known to those institutions that issue credit ratings. As we mentioned above, Cavalluzzo, Cavalluzzo, and Wolken (1999) show that Dun & Bradstreet Credit Ratings are not helpful in explaining racial disparities in loan denials. Although we are not privy to Dun & Bradstreet's methodology for establishing its credit ratings, we do know from long experience that the good indicators of ownership by race are lacking in Dun & Bradstreet's master business identifier file. Indeed, this is the reason why NERA's availability estimation methodology requires us to create a master directory of disadvantaged, minority, and women-owned businesses for merging with Dun & Bradstreet's data.

<sup>290</sup> On average, 29 percent of all firms use business credit cards and 41 percent use personal credit cards for business use; these levels vary only modestly by race and ethnicity. In the EWSC division, the figures are 29 percent and 36 percent, respectively.

cards for business expenses. On the other hand, there is evidence in the EWSC and in the nation as a whole that Asian- and Pacific Islander-owned firms are less likely to access business credit cards.

**Table 6.11. Models of Credit Card Use–USA**

Specification	African American	Asian/Pacific Islander	Native American	Hispanic	Non-minority Female	Sample Size
1) Business Credit Card	0.035 (1.35)	-0.096 (3.23)	0.085 (1.00)	0.024 (0.79)	0.018 (0.83)	4,633
2) Personal Credit Card	0.019 (0.74)	-0.019 (0.63)	0.019 (0.23)	-0.042 (1.40)	0.028 (1.28)	4,633

Source: See Table 6.1.

Notes: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) Each line of this table represents a separate regression with the same control variables as Column 3 of Table 6.8 but excluding the loan characteristics. (3) The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. (4) In all specifications, the sample size is all firms. (5) Other races are excluded due to sample size limitations.

**Table 6.12. Models of Credit Card Use–EWSC**

Specification	African American	Asian/Pacific Islander	Native American	Hispanic	Non-minority Female	Sample Size
1) Business Credit Card	0.030 (1.05)	-0.080 (2.50)	0.116 (1.05)	0.026 (0.72)	0.020 (0.84)	4,633
2) Personal Credit Card	0.029 (1.03)	-0.017 (0.54)	-0.098 (0.94)	-0.001 (0.03)	0.050 (2.08)	4,633

Source: See Table 6.1.

Notes: See Table 6.11. Control for EWSC included.

## F. Differences in Interest Rates Charged on Approved Loans

Although most of our analysis has addressed whether minority- and nonminority-owned firms are treated equally in terms of their probability of loan denial, another way that differential treatment may emerge is through the interest rate charged for approved loans. Discrimination may be apparent if banks approve loans to equally creditworthy minority- and nonminority-owned firms, but charge the minority-owned firms a higher interest rate. Therefore, we estimated model specifications analogous to those reported previously for loan denials, but now the dependent variable represents the interest rate charged for firms whose loans were approved and the set of explanatory variables includes characteristics of the loan. More formally, the model we estimated takes the form:

$$(2) \quad I_i = \beta_0 + \beta_1 CW_i + \beta_2 X_i + \beta_3 R_i + \beta_4 LC_i + \varepsilon_i,$$

where  $I$  represents the interest rate charged on the loan,  $LC$  represents characteristics of the loan (see the notes to Table 6.8 for a full list of the variables included in this set),  $\varepsilon_i$  is a term capturing random factors, and all other notations are the same as in equation (1).

An important consideration is whether the interest rate may be treated as exogenous, as our reduced form model assumes. In the context of small business loans, in which it is possible that the loan terms may be negotiated in the determination process, this assumption may not be valid. As such, a model that simultaneously estimates the interest rate and the loan decision might be appropriate, except that the interest rate that would be charged to firms whose loans were denied is not available in our data. Alternatively, one could estimate an interest rate model alone for those firms whose loan was approved, adjusting for the potential bias brought about by sample selection. To properly identify such a model, however, a variable is required that is linked to the loan denial decision, but unrelated to the level of interest charged on approved loans; no such variable exists in the data.

Nevertheless, one would expect these considerations to impose a downward bias on the estimated differential in interest rates charged on loans to African American-owned firms. Those firms whose loans were rejected would have been charged higher interest rates than those approved. Since African American-owned businesses were considerably more likely to be rejected holding constant differences in creditworthiness, one would expect any differential in interest rate to be even greater if those firms were included in the sample. We overlook this implication in the results reported below, but its impact should be kept in mind.

The results obtained from estimating equation (2) are reported in Row 1 of Table 6.13, which includes the complete set of control variables comparable to those in Column 5 of Table 6.8. Estimates indicated that African American-owned firms pay rates of interest that are roughly one percent (100 basis points) higher than similarly situated nonminority-owned firms. Row 2 shows that even African American-owned firms with good credit histories are charged higher interest rates relative to nonminority-owned firms.<sup>291</sup> There is evidence of this phenomenon affecting Hispanic-owned firms as well.

The remainder of the table presents similar specification checks to those reported in Table 6.10. Recall that most of these models identify firms for which the firm's own history is likely to be a more important contributor to its creditworthiness. The specifications by sales market are designed to distinguish the impact of central city location. Unfortunately, sample sizes are smaller in these specifications and reduce the power of the analysis. Nevertheless, we still find that regardless of organization type and firm age, African American-owned firms face statistically significantly higher interest rates. Overall, the evidence presented indicates that African Americans, and to a lesser extent Hispanics and Asians/Pacific Islanders, do face disadvantages in the market for small business credit that does not appear to be attributable to differences in geography or creditworthiness.

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<sup>291</sup> Estimates from firms that have had past credit problems are not presented since the higher likelihood of their being denied credit restricts the size of the sample and limits the ability to provide a powerful test of the interest rates charged if they are approved.

**Table 6.13. Models of Interest Rate Charged—USA**

<b>Specification</b>	<b>African American</b>	<b>Asian/ Pacific Islander</b>	<b>Native American</b>	<b>Hispanic</b>	<b>Non-minority Female</b>	<b>Sample Size</b>
1) All loans (controls as in Column 5, Table 6.8)	1.034 (3.72)	0.413 (1.37)	-0.427 (0.63)	0.517 (1.97)	0.025 (0.14)	1,454
<i>Creditworthiness</i>						
2) No credit problems	1.187 (3.27)	0.485 (1.33)	0.910 (1.07)	0.435 (1.48)	0.129 (0.66)	1,137
<i>Organization Type</i>						
3) Proprietorships and Partnerships	1.735 (2.57)	0.826 (1.03)	2.589 (0.90)	1.008 (1.74)	-0.239 (0.53)	364
4) Corporations	0.660 (2.04)	0.359 (1.07)	-0.585 (0.86)	0.491 (1.53)	0.127 (0.66)	1,090
<i>1993 Firm Size</i>						
5) Fewer than 10 Employees	1.200 (2.58)	-0.247 (0.41)	-0.010 (0.01)	0.783 (1.75)	-0.311 (1.02)	574
6) 10 or More Employees	0.450 (1.15)	0.446 (1.21)	-0.197 (0.25)	0.515 (1.37)	0.164 (0.77)	880
<i>Scope of Sales Market</i>						
7) Local	0.751 (1.55)	-0.073 (0.13)	1.773 (1.12)	0.805 (2.05)	0.324 (1.08)	633
8) Regional, National, or International	1.544 (4.26)	1.185 (2.93)	-1.368 (1.85)	0.392 (0.96)	-0.163 (0.73)	821

Source: See Table 6.1.

Notes: (1) Reported estimates are Ordinary Least Squares (OLS) coefficients, t-statistics in parentheses. (2) Each line of this table represents a separate regression with all of the control variables as Column 5 of Table 6.8 (except where specified) as well as: an indicator variable for whether the loan request was for a fixed interest rate loan, the length of the loan, the size of the loan, whether the loan was guaranteed, whether the loan was secured by collateral, and 7 variables identifying the type of collateral used if the loan was secured. (3) The sample consists of firms that had applied for a loan and had their application approved. (4) “No credit problems” means that neither the firm nor the owner had been delinquent on payments over 60 days, no judgments against the owner for the preceding 3 years, and the owner had not been bankrupt in the preceding 7 years.

Table 6.14 shows results for the EWSC. Findings are similar to those observed for the nation as a whole.

**Table 6.14. Models of Interest Rate Charged—EWSC**

Specification	African American	African American * EWSC	Asian/Pacific Islander	Native American	Hispanic	Non-minority Female	Sample Size
1) All loans (controls as in Column 5, Table 6.8)	0.972 (3.13)	0.235 (0.36)	0.362 (1.13)	0.690 (0.72)	0.548 (1.72)	-0.109 (0.59)	1,454
<i>Creditworthiness</i>							
2) No credit problems	0.970 (2.37)	0.997 (1.19)	0.522 (1.38)	1.145 (1.05)	0.467 (1.29)	-0.015 (0.07)	1,137
<i>Organization Type</i>							
3) Proprietorships and Partnerships	1.814 (2.06)	-0.124 (0.09)	0.602 (0.72)	2.940 (1.02)	0.740 (1.00)	-0.569 (1.17)	364
4) Corporations	0.689 (2.02)	-0.357 (0.35)	0.449 (1.24)	0.756 (0.73)	0.731 (1.94)	0.007 (0.04)	1,090
<i>1993 Firm Size</i>							
5) Fewer than 10 Employees	1.078 (2.04)	0.165 (0.16)	-0.355 (0.57)	3.228 (1.76)	0.866 (1.57)	-0.478 (1.43)	574
6) 10 or More Employees	0.362 (0.87)	0.670 (0.63)	0.591 (1.43)	-0.600 (0.54)	0.828 (1.90)	0.046 (0.20)	880
<i>Scope of Sales Market</i>							
7) Local	0.229 (0.42)	2.231 (2.04)	-0.207 (0.35)	4.155 (1.85)	0.585 (1.21)	0.271 (0.81)	633
8) Regional, National, or International	1.672 (4.20)	-0.770 (0.88)	1.158 (2.68)	-0.626 (0.60)	0.682 (1.38)	-0.311 (1.31)	821

Source: See Table 6.1.

Notes: See Table 6.13.

## G. Loan Approval Rates and Access to Credit

The results presented so far may be biased toward finding too small a disparity between nonminority- and African American-owned firms because those minority-owned firms that actually apply for credit may represent a selected sample of the most creditworthy. More marginal minority-owned firms whose loans may have been accepted had they been owned by nonminorities may not even be among the pool of loan applicants. First, these firms may have gone out of business or may not have had the opportunity to commence operations because of their inability to obtain capital. Second, some existing firms may have chosen not to apply for credit because they were afraid their application would be rejected due to prejudice.

Although we have no direct evidence regarding the first proposition, data from the 1993 NSSBF provide some evidence for the second: African American- and Hispanic-owned firms are much

more likely to report that they did not apply for a loan, even though they needed credit, because they thought they would be rejected. Table 6.15 reports estimates from Probit models in which the dependent variable is an indicator variable representing failure to apply for a loan fearing denial for all firms. The first row presents racial differences without controlling for any other characteristics of firms, and the results indicate that African American- and Hispanic-owned firms are 40 and 23 percentage points more likely than nonminority-owned firms to withhold an application fearing denial.

Of course, some of this difference may be attributable to differences in creditworthiness across firms since firms that are bad credit risks should be afraid that their loan would be denied. To adjust for this, the second row of Table 6.15 reports comparable models that control for differences in creditworthiness and other characteristics of firms. The results from this specification show that the greater fear of rejection among African American- and Hispanic-owned firms can partially be explained by these differences. Nevertheless, a gap of 26, 5, and 16 percentage points still exists for African American-owned, Asian/Pacific Islander-owned, and Hispanic-owned firms relative to nonminority-owned firms with similar characteristics. In fact, when asked directly why they were afraid to apply for loans, African American-owned firms and Hispanic-owned firms were far more likely to report prejudice as the reason (19 percent and 8 percent, respectively, compared to 3 percent for nonminority-owned firms).<sup>292</sup> Results obtained in section (b) of Table 6.15 for the EWSC division are very similar to those found for the nation as a whole. As section (c) of Table 6.15 shows, African American-owned firms in construction also appear to be fearful of applying because of the possibility of their application being turned down.<sup>293</sup>

If these minority-owned firms had applied for credit and were rejected because of discrimination, estimates of racial disparities based only upon loan applicants (as in Tables 6.8 and 6.9) would be understated. The perception of prejudice among these firms, however, does not necessarily imply that selection bias is present. Those firms that failed to apply because they feared rejection may have had similar loan denial rates as other minority-owned firms with comparable levels of creditworthiness that did apply. If those firms chose to apply for a loan, differences by race in the combined denial rate of the actual and potential applicants would be the same as what we have estimated for the observed sample of applicants.

More formally, suppose that loan denial rates for equally creditworthy nonminority- and minority-owned firms that applied for credit are  $\theta^W$  and  $\theta^m$ , respectively; the measure of discrimination employed in the previous analysis is  $\theta^m - \theta^W$ . Now suppose that firms that are equally creditworthy, but chose not to apply for a loan because they feared rejection, would have been denied at the rates  $\theta^W$  and  $\psi^m$  for nonminority- and minority-owned firms, respectively. Among the nonminority-owned firms, the denial rate is identical regardless of whether the firm chose to apply or not, conditional upon creditworthiness. Among minority-owned firms, however, those who were afraid to apply may have been denied at a higher rate (perhaps because of their greater propensity to locate in the central city or other factors that are related to their

<sup>292</sup> Other reasons given, including “too little collateral,” “poor credit history,” and “poor balance sheet,” are comparable across groups. Firms could report more than one reason.

<sup>293</sup> It was not possible to report separate construction results in earlier tables because of small sample sizes.

race, but unrelated to creditworthiness) compared with other minority-owned firms. Then the correct representation of the disadvantage faced by minority-owned firms is  $[\eta\theta^m + (1-\eta)\psi^m] - \theta^w$ , where  $\eta$  represents the share of minority-owned firms desiring credit that submitted an application. Our earlier findings are biased if  $\theta^m$  is not equal to  $\psi^m$ .

**Table 6.15. Racial Differences in Failing to Apply for Loans Fearing Denial**

Specification	African American	Asian/Pacific Islander	Native American	Hispanic	Non-minority Female
<b>a) USA</b>					
No Other Control Variables (n=4,637)	0.405 (16.65)	0.099 (3.61)	0.134 (1.72)	0.235 (8.28)	0.031 (1.54)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=4,633)	0.257 (10.02)	0.054 (1.98)	0.019 (0.27)	0.164 (5.69)	-0.008 (0.38)
<b>b) EWSC</b>					
No Other Control Variables, except for WNC dummy and race*WNC interactions (n=4,637)	0.388 (14.41)	0.087 (2.92)	0.200 (1.97)	0.247 (7.41)	0.046 (2.08)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=4,633)	0.249 (8.94)	0.045 (1.52)	0.054 (0.58)	0.169 (5.05)	0.007 (0.31)
<b>c) Construction</b>					
No Other Control Variables (n=781)	0.350 (6.74)	0.109 (1.27)	-0.087 (0.54)	0.150 (2.22)	-0.007 (0.12)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=781)	0.181 (3.67)	0.064 (0.78)	-0.132 (1.00)	0.039 (0.65)	-0.063 (1.32)

Source: See Table 6.1.

Notes: (1) Reported estimates are Probit derivatives, t-statistics in parentheses. (2) Sample consists of all firms. (3) Dependent variable equals one if the firm said they did not apply for a loan fearing denial, zero otherwise.

One approach that is frequently employed to address such a problem is to estimate a “Heckman-correction” that would formally model the application process in conjunction with the loan outcome for those who applied. The difficulty with this methodology in the present context is that it is only correctly implemented when some variable is present that is correlated with a firm’s decision to apply for a loan, but is independent of the financial institution’s decision to approve or deny the request. Unfortunately, the NSSBF data do not appear to contain any variables that would satisfy these conditions, so we are unable to implement this methodology.<sup>294</sup>

<sup>294</sup> The only variable that potentially could meet these conditions in the NSSBF data is the distance between a firm and the nearest financial institution. If greater distance reduced a firm’s information regarding the availability of funds, it might be related to the decision to apply for a loan. On the other hand, the creditworthiness of the firm should be independent of its location and should be unlikely to enter into the approval process. Unfortunately, we did not find a direct relationship between distance to the nearest financial institution and the probability of applying for a loan. This may be due to the fact that few firms are located more than a very short distance from the nearest financial institution.

As an alternative that answers a different, but related, question, we consider the ability of firms to get credit among those who desired it, regardless of whether or not they applied. This amounts to analyzing access to credit rather than loan approval and includes in the denominator those firms that needed credit but did not apply because they feared rejection. If differences by race in this rate among all firms who needed credit are greater than differences by race in the rate of denial among loan applicants, then this would indicate that African American- and other minority-owned firms have even less access to credit than an analysis of loan applicants would indicate.

To test this proposition, we estimate a regression model comparable to the one reported in Table 6.10 for the sample of firms that applied for a loan, except that this analysis considers all firms seeking credit and treats those who did not apply for fear of rejection as denials. The sample excludes firms that did not need additional credit in the preceding three years. The results, reported in Table 6.16, are consistent with the previous analysis; we find that selection is not much of an issue for African American-owned firms nationally, Asian/Pacific Islander-owned firms nationally, or in the EWSC division. Regardless of whether we consider denial rates among applicants or denial rates among firms that desired additional credit, African American-owned firms are 20-30 percentage points less likely to obtain credit once control variables are included and even higher than that when they are not. For Hispanic-owned firms, however, some selection bias is evident. Among the pool of loan applicants, Hispanic-owned firms are not statistically significantly more likely to be denied than other firms with the same characteristics (see, e.g., Table 6.8, Column 5). Among the pool of firms seeking additional credit, however, Hispanic-owned firms are 17 percentage points more likely to be denied access to credit, and 16 percentage points more likely in the EWSC, and these differences are statistically significant.

**Table 6.16. Models of Failure to Obtain Credit Among Firms that Desired Additional Credit**

Specification	African American	Asian/Pacific Islander	Native American	Hispanic	Non-minority Female
<b>a) USA</b>					
No Other Control Variables (n=2,647)	0.455 (14.85)	0.299 (6.83)	0.188 (1.57)	0.297 (7.77)	0.126 (4.01)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=2,644)	0.276 (6.93)	0.180 (3.42)	-0.009 (0.06)	0.165 (3.51)	0.049 (1.38)
<b>b) EWSC</b>					
No Other Control Variables (n=2,647)	0.446 (12.94)	0.278 (5.80)	0.275 (1.87)	0.315 (7.01)	0.138 (4.06)
Full Set of Control Variables (same as Table 6.8, Column 3 except for loan characteristics) (n=2,644)	0.282 (6.43)	0.150 (2.64)	0.140 (0.71)	0.160 (2.95)	0.053 (1.38)

Source: See Table 6.1.

Notes: (1) Reported estimates are Probit derivatives, t-statistics in parentheses. (2) The sample consists of all firms that applied for loans along with those who needed credit, but did not apply for fear of refusal. (3) Failure to obtain credit includes those firms that were denied and those that did not apply for fear of refusal. (4) Dependent variable is set to one if the firm failed to obtain credit and to zero if the firm applied for credit and had their loan application approved.

## H. Analysis of Credit Market Discrimination in the U.S. in 1998

We turn next to an examination of the extent to which discrimination in the credit market has changed since 1993 using data from the 1998 SSBF conducted by the Board of Governors of the Federal Reserve System.<sup>295</sup> This section updates the estimates obtained above using the 1993 NSSBF. Two complications are that the overall sample size is smaller and a number of the questions have been changed. However, the result is still clear—African American-owned firms face discrimination in the credit market. In addition, there is evidence of discrimination in the credit market against other minority-owned firms as well. We present four sections of evidence, all of which are consistent with our findings from the 1993 survey.

<sup>295</sup> The target population of the survey was for-profit businesses with fewer than 500 employees that were either a single establishment or the headquarters of a multiple establishment company, and were not agricultural firms, financial institutions, or government entities. These firms also had to be in business during December 1998. Data were collected for fiscal year-end 1998. Like its 1993 counterpart, the purpose of this survey was to gather information about small business financial behavior and the use of financial services and financial service providers by these firms. The objectives of the survey were to collect information that can inform researchers and policy makers on the availability of credit to small businesses; the location of the sources of financial services; the types of financial services used, including checking accounts, savings accounts, various types of credit, credit cards, trade credit, and equity injections; as well as the firm's recent credit acquisition experiences. The survey also investigated the level of debt held by these firms and their accessibility to credit. Additionally, the survey collected information on firm and owner demographics, as well as the firm's recent income statement and balance sheet.

## 1. Qualitative Evidence

Consistent with the 1993 survey, African American-owned firms in the 1998 survey report that the biggest problem their firm currently faces is “financing and interest rates.” (Table 6.17). In the 1993 survey, respondents were asked to report problems in the preceding 12 months (Tables 6.3 and 6.4) and over the next 12 months (Tables 6.5 and 6.6). Interestingly, even though credit availability was by far the most important category for African Americans (21 percent in Table 6.5), interest rates were relatively unimportant (2 percent). The 1998 SSBF, however, did not report separate categories.

**Table 6.17. What is the Most Important Problem Facing Your Business Today?**

	Non-minority Male	African American	Other	Hispanic	Non-minority Female	Total
Financing and interest rates	5.8%	18.2%	10.6%	8.1%	6.2%	6.8%
Taxes	7.7%	1.9%	5.3%	3.1%	6.6%	6.9%
Inflation	0.4%	0.6%	0.0%	1.0%	0.4%	0.4%
Poor sales	7.0%	5.9%	11.6%	7.0%	8.3%	7.5%
Cost/availability of labor	3.9%	3.3%	2.4%	3.5%	4.5%	3.9%
Government regulations/red tape	7.1%	3.0%	4.8%	8.1%	6.5%	6.8%
Competition (from larger firms)	11.1%	10.7%	10.6%	18.4%	10.2%	11.3%
Quality of labor	14.4%	11.0%	9.4%	8.7%	9.1%	12.6%
Cost and availability of insurance	2.6%	1.0%	0.8%	0.0%	2.3%	2.2%
Other	11.4%	10.0%	8.3%	16.0%	12.7%	11.7%
Cash flow	4.6%	10.9%	6.3%	3.5%	3.3%	4.6%
Capital other than working capital	1.1%	1.7%	4.1%	0.8%	1.3%	1.3%
Acquiring and retaining new customers	3.1%	3.9%	5.0%	1.8%	3.3%	3.2%
Growth of firm/industry	0.9%	1.0%	1.2%	0.1%	0.4%	0.8%
Overcapacity of firm/industry	0.1%	0.0%	0.0%	0.3%	0.0%	0.1%
Marketing/advertising	2.1%	3.9%	2.5%	2.8%	3.6%	2.5%
Technology	1.4%	1.2%	1.6%	2.6%	1.3%	1.5%
Costs, other than labor	2.7%	1.8%	2.5%	3.6%	3.8%	2.9%
Seasonal/cyclical issues	1.3%	1.2%	0.7%	0.4%	0.7%	1.1%
Bill collection	2.8%	2.2%	2.4%	2.6%	2.8%	2.8%
Too much work/not enough time	3.6%	2.2%	4.3%	1.4%	5.7%	3.9%
No problems	4.6%	4.3%	5.6%	5.8%	6.4%	5.1%
Not ascertainable	0.4%	0.0%	0.0%	0.0%	0.7%	0.4%

Source: NERA calculations from the 1998 SSBF (n=3,561).

Note: Results are weighted.

## 2. Differences in Loan Denial Rates by Race/Ethnicity

In 1998 as in 1993, in comparison with firms owned by nonminority males, minority- and female-owned firms were less creditworthy, more likely to have their loan applications turned down, more likely not to apply for a loan for fear of being denied, and consistently smaller and younger. Moreover, their owners had lower amounts of both home and non-home equity. Minority-owned firms in general, and African American-owned firms in particular, were much less likely to be classified as having a “low risk” credit rating by Dun & Bradstreet.<sup>296</sup>

In the 1993 survey, respondents were asked “During the last three years has the firm applied for credit or asked for the renewal of terms on an existing loan?” In 1998, a narrower question limited to new loans was asked—“Did the firm apply for new loans in the last three years?” In 1993, 43 percent answered the question in the affirmative compared with 27 percent in 1998. Despite the fact that in 1993 the question was broader, the pattern of denials by race and gender is similar across the years. As can be seen below, minority-owned firms were especially likely to have their loan applications denied.

	1993	1998
Nonminority males	26.2%	24.4%
African Americans	65.9%	62.3%
Asian/Pacific Islanders, Native Americans, etc.	39.9%	47.0%
Hispanics	35.9%	49.9%
Nonminority females	30.1%	23.5%
Overall	28.8%	28.6%

Similarly, the proportion of firms reporting that they did not apply for fear of being denied is similar by race, ethnicity, and gender across the two survey years. More than half of African American owners did not apply for a loan for fear of being denied compared with only one out of five nonminority males.

	1993	1998
Nonminority males	22.5%	20.2%
African Americans	60.7%	53.9%
Asian/Pacific Islanders, Native Americans, etc.	27.5%	23.1%
Hispanics	41.5%	34.3%
Nonminority females	22.7%	24.2%
Overall	24.7%	23.3%

In the 1998 SSBF survey, respondents who were denied loans were asked if they believed there were reasons other than the official ones provided by their financial institution as to why their loan applications were turned down. Among numerous options provided were the following:

- a) Prejudice on a racial/ethnic basis.

<sup>296</sup> Information on home and non-home equity or on the Dun & Bradstreet credit rating was not available in the 1993 survey.

- b) Prejudice against women.
- c) Prejudice against the business location.
- d) Prejudice against the business type.
- e) Prejudice or discrimination (not-specified or other).

Among firm owners who had applied for credit within the last three years and were denied, 34.1 percent believed there were reasons for their denial beyond the official explanation provided by the financial institution. Among nonminorities, 7.7 percent suspected some sort of prejudice. By contrast, the figure among minorities was 25.8 percent. Among owners who needed credit but did not apply for fear of denial, a similar pattern was observed. Only 1.7 percent of nonminorities stated prejudice was the reason, whereas among minorities the figure was 6.8 percent.

In Tables 6.8 and 6.9, the determinants of loan denial rates were estimated using data from the 1993 NSSBF. It was found that African American-owned firms were almost twice as likely to have their loans denied than nonminority male-owned firms, even after controlling for a host of variables included primarily to control for the possibility that minority-owned firms are smaller and less creditworthy than those owned by nonminority men.

A similar exercise is performed below in Tables 6.18 and 6.19 using data from the 1998 SSBF. Column 1 in Table 6.18 shows that African American-owned firms in 1998 had a 42.2 percentage point higher probability of denial than nonminority male-owned firms before taking account of creditworthiness of the firm or any other characteristics. For 1993, the comparable figure was 44.3 percentage points. The addition of a large number of controls reduces the percentage point differential for African Americans to 21.8 in column 5 as the full set of controls is added. For 1993, the comparable figure was 24.1 percentage points.

The main difference between 1993 and 1998 is that now we find evidence that the probability of denial is significantly higher for Hispanic-owned firms as well. In Table 6.18, Column 5, Hispanic-owned firms have a 17.1 percentage point higher probability of being denied than nonminority male-owned firms. In Table 6.8, by contrast, denial probabilities for Hispanic-owned firms were *not* significantly different from those of nonminority male-owned firms. If anything, discrimination in the small business credit market appears to have expanded during the late 1990s.

**Table 6.18. Determinants of Loan Denial Rates—USA**

	(1)	(2)	(3)	(4)	(5)
African American	0.422 (7.94)	0.254 (5.36)	0.217 (5.05)	0.192 (4.52)	0.218 (4.74)
Asian/Pacific Islander	0.148 (2.54)	0.129 (2.52)	0.049 (1.25)	0.023 (0.65)	0.028 (0.77)
Hispanic	0.353 (6.44)	0.269 (5.37)	0.211 (4.69)	0.183 (4.21)	0.171 (4.00)
Nonminority female	0.087 (2.22)	0.049 (1.55)	0.024 (0.96)	0.016 (0.66)	0.011 (0.44)
Judgments		0.272 (4.28)	0.249 (4.32)	0.272 (4.47)	0.262 (4.20)
Firm delinquent		0.081 (2.88)	0.115 (4.20)	0.103 (3.88)	0.111 (4.01)
Personally delinquent		0.092 (2.85)	0.039 (1.59)	0.042 (1.69)	0.045 (1.76)
Bankrupt past 7 years		0.504 (4.48)	0.406 (3.83)	0.392 (3.67)	0.395 (3.64)
\$1998 sales (*10 <sup>8</sup> )		-0.000 (2.47)	-0.000 (0.26)	0.000 (0.02)	0.000 (0.03)
\$1998 firm equity (*10 <sup>8</sup> )		0.000 (1.40)	0.000 (0.46)	0.000 (0.20)	0.000 (0.06)
Owner home equity (*10 <sup>8</sup> )		0.000 (0.52)	0.000 (1.47)	0.000 (0.96)	0.000 (0.90)
Owner net worth (*10 <sup>8</sup> )		-0.000 (1.25)	-0.000 (1.28)	-0.000 (1.19)	-0.000 (1.24)
Owner years of experience		-0.002 (1.42)	-0.001 (0.49)	-0.000 (0.34)	-0.000 (0.21)
Owner share of business		0.000 (0.75)	-0.000 (0.12)	0.000 (0.03)	-0.000 (0.33)
Dun & Bradstreet credit ratings (4 variables)	No	Yes	Yes	Yes	Yes
Owner Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Geographic Division (8 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	924	924	924	924	905
Pseudo R <sup>2</sup>	.1061	.2842	.3714	.3910	.4015
Chi <sup>2</sup>	90.0	241.1	315.1	331.8	337.8
Log likelihood	-379.3	-303.7	-266.7	-258.3	-251.7

Source: See Table 6.17.

Notes: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) “Other firm characteristics” include variables indicating whether the firm had a line of credit, 1998 full time equivalent employment, firm age, metropolitan area, legal form of organization (sole proprietorship, partnership, LLP, S-corporation, C-corporation, or LLC), existing long run relation with lender, geographic scope of market (regional, national, foreign or international), the value of the firm’s inventory, the firm’s cash holdings, and the value of land held by the firm. (3) “Characteristics of the loan” includes the size of the loan applied for.

**Table 6.19. Determinants of Loan Denial Rates—EWSC**

	(1)	(2)	(3)	(4)	(5)
African American	0.415 (6.80)	0.223 (4.23)	0.205 (4.21)	0.183 (3.78)	0.205 (3.97)
Asian/Pacific Islander	0.156 (2.50)	0.146 (2.61)	0.062 (1.43)	0.041 (1.00)	0.043 (1.04)
Hispanic	0.320 (5.12)	0.254 (4.56)	0.206 (4.12)	0.184 (3.76)	0.169 (3.54)
Nonminority Female	0.093 (2.18)	0.050 (1.43)	0.025 (0.90)	0.017 (0.61)	0.012 (0.43)
African American*EWSC	0.037 (0.39)	0.068 (0.79)	0.023 (0.36)	0.029 (0.44)	0.040 (0.57)
Asian/Pacific Islander*EWSC	-0.050 (0.38)	-0.059 (0.70)	-0.045 (0.69)	-0.041 (0.65)	-0.038 (0.58)
Hispanic*EWSC	0.110 (0.99)	0.033 (0.39)	0.012 (0.18)	0.037 (0.50)	0.032 (0.44)
Nonminority female*EWSC	-0.023 (0.25)	-0.007 (0.10)	-0.005 (0.08)	0.003 (0.06)	-0.002 (0.04)
EWSC division	-0.041 (0.89)	0.002 (0.06)	-0.002 (0.08)	-0.018 (0.42)	-0.013 (0.29)
Creditworthiness Controls (8 variables)	No	Yes	Yes	Yes	Yes
Owner's Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Geographic Division (7 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	924	924	924	924	905
Pseudo R <sup>2</sup>	0.1090	0.2862	0.3724	0.4000	0.4002
Chi <sup>2</sup>	92.45	242.88	315.95	329.24	336.64
Log likelihood	-378.0	-302.8	-266.3	-259.6	-252.3

Source: See Table 6.17.

Notes: (1) t-statistics in parentheses. (2) Other creditworthiness controls are the four other variables included in Column 2 of Table 6.18.

Table 6.19 focusing on the EWSC division yields similar results—showing significantly larger denial probabilities for African American- and Hispanic-owned firms (20.5 percent and 16.9 percent, respectively) than for nonminority male-owned firms. The EWSC indicator was not significant in Table 6.19. None of the interaction terms between EWSC and race, ethnicity or gender were significant either, indicating that the loan denial results for the EWSC are not significantly different than for the nation as a whole.

Although tempered by the smaller sample size available, the quality of the experiment is somewhat better using the 1998 data than it was using the 1993 data due to the availability of an improved set of controls for the creditworthiness of the firm and its owner. In 1998, three new variables are included regarding the financial viability of the firm:

- a) The value of the equity, if any, in the owner’s home.
- b) The owner’s net worth excluding home equity and equity in the firm.
- c) The firm’s Dun & Bradstreet credit rating in five categories (low, moderate, average, significant and high) indicating the likelihood of loan default.<sup>297</sup>

Despite the fact that these new variables do help to predict loan denials,<sup>298</sup> the estimated race differences including these variables are unchanged from those reported above.<sup>299</sup> This suggests that the large estimated differences in the denial probabilities that were estimated in 1993 were not biased significantly upwards by the fact that these variables were unavailable.

### 3. Effect of 1998 Survey Design Changes on Differences in Loan Denial Rates

The question we used to examine the 1998 data was somewhat narrower than the question used in the 1993 survey because it was changed by the survey designers. The 1998 question asked about new loans over the preceding three years, whereas the 1993 question covered all loans, including renewals. Responses in 1998 were as follows:

Applied for New Loans Last Three Years	Number	Percent
Did not apply	2,599	73.0%
Always approved	713	20.0%
Always denied	166	4.7%
Sometimes approved/sometimes denied	83	2.3%
Total	3,561	100.0%

The dependent variable used in Tables 6.18 and 6.19 was set to one if the loan application was always denied and was set to zero if the application was always approved or sometimes approved/sometimes denied. An alternative dependent variable—*denylast*—is set to one if the application is always denied, set to zero if always approved. Those responding “sometimes approved/sometimes denied” are excluded from the analysis. Column (1) of Table 6.20 replicates Column 1 of Table 6.18 using *denylast* as the dependent variable with the smaller sub-sample.

<sup>297</sup> The D&B Commercial Credit Score Report predicts the likelihood of a company paying in a delinquent manner (90+ days past terms) during the next 12 months based on the information in D&B’s file. The score is intended to help firms decide quickly whether to accept or reject accounts, adjust terms or credit limits, or conduct a more extensive review based on the report D&B provides. Firms can also determine the company’s relative ranking among other businesses in the D&B database.

<sup>298</sup> The coefficients and t-statistics on the credit score variables when they were included alone in a U.S. loan denial model was as follows: moderate risk = .228 (2.45); average risk = .295 (3.25); significant risk = .319 (3.28); high risk = .391 (3.53); n =924; pseudo  $r^2$  =.0253. Excluded category “low risk.” Results were essentially the same when a control for EWSC was also included.

<sup>299</sup> This confirms the findings of Cavalluzzo, Cavalluzzo and Wolken (1999) who performed a similar exercise with the 1993 data.

African Americans, Hispanics, Asians/Pacific Islanders, and nonminority females are all confirmed to face higher denial rates than nonminority males using this specification. For African Americans and Hispanics, the difference is 46 and 36 percentage points, respectively. For Asians/Pacific Islanders, the difference is 19 percentage points, and for nonminority females, 8 percentage points.

**Table 6.20. More Loan Denial Probabilities**

	(1)	(2)	(3)	(4)
	<i>Denylast</i>	<i>Denylast</i>	<i>Denylast</i>	<i>Denylast</i>
African American	0.457 (8.00)	0.250 (4.84)	0.466 (6.95)	0.251 (4.10)
Asian/Pacific Islander	0.185 (2.81)	0.033 (0.76)	0.187 (2.67)	0.038 (0.82)
Hispanic	0.360 (6.28)	0.186 (3.91)	0.330 (4.99)	0.170 (3.23)
Nonminority female	0.083 (2.00)	0.006 (0.22)	0.085 (1.88)	0.004 (0.12)
African American*EWSC			0.007 (0.07)	0.003 (0.05)
Asian/Pacific Islander*EWSC			-0.031 (0.19)	-0.028 (0.31)
Hispanic*EWSC			0.112 (0.96)	0.042 (0.50)
Nonminority female*EWSC			-0.005 (0.05)	0.012 (0.18)
EWSC			-0.055 (1.14)	-0.012 (0.23)
Creditworthiness Controls	No	Yes	No	Yes
Owner's Education	No	Yes	No	Yes
Other Firm Characteristics	No	Yes	No	Yes
Characteristics of the Loan	No	Yes	No	Yes
Geographic Division	No	Yes	No	Yes
Industry	No	Yes	No	Yes
N	846	846	846	846
Pseudo R <sup>2</sup>	0.1112	0.4227	0.1147	0.4232
Chi <sup>2</sup>	90.94	345.57	93.79	345.98
Log likelihood	-363.3	-236.0	-361.9	-235.8

Source: See Table 6.18.

Results consistent with discrimination are confirmed for African American-owned firms and Hispanic-owned firms in Column (2) of Table 6.20 when a host of demographic and financial characteristics and geographic and industry indicators are included. When interaction terms for the EWSC division are added to the model as in Columns (3) and (4), results for African Americans and Hispanics remain statistically significant. Moreover, the results for Asian/Pacific

Islander-owned firms and nonminority female-owned firms become significant in Column (3), though not in Column (4). The EWSC indicator is not significant in any of the specifications, nor are the interaction terms between EWSC and race, ethnicity, or gender.

#### **4. Differences in Interest Rates, Credit Card Use, and Failure to Apply for Fear of Denial**

Tables 6.21 through 6.23 provide confirmation from the 1998 survey of a number of other results from the 1993 survey reported above.

Table 6.21, which is similar to Tables 6.13 and 6.14, finds that conditional on obtaining a loan, African American-owned firms are charged a higher price for their credit—on average 1.06 percentage points nationally. However, African Americans in the EWSC appear to pay less for their loans than African Americans nationally.

Table 6.22, which is similar to Table 6.15, shows that African American-owned firms are much more likely not to apply for a loan for fear that they will be denied. Based on all of the foregoing evidence, this is perhaps a sensible decision—if and when they do apply they are almost twice as likely as nonminority male-owned firms to have their application rejected. This is evident in the EWSC as well and also in the construction and construction-related industries. There is some evidence of this phenomenon for Hispanics nationally as well.

Finally, Table 6.23, which is comparable to Tables 6.11 and 6.12, suggests that when the financial institution does not know the race or ethnicity of the applicant—as is often the case in an application for a credit card—there are no differences by race or ethnicity in the usage for business purposes of either business or personal credit cards. Except for personal credit card use by African American-owned firms, there was also little evidence of any race effects in the use of credit cards in the EWSC division (rows 3 and 4).

Our confidence in the strength of our findings from the 1993 NSSBF survey is elevated by these findings from the 1998 SSBF survey, which strongly confirm the earlier results. Unfortunately, African Americans continue to be discriminated against in the market for small business credit. By 1998, this discrimination appears to be on the increase for African Americans and to be expanding to impact other minority groups, such as Hispanics, as well. This is an important market failure, and one which government agencies such as JMAA cannot simply ignore if they are to avoid passive participation in a discriminatory market area.

**Table 6.21. Models of Interest Rate Charged**

Specification	African American	African American* EWSC	Asian/Pacific Islander	Hispanic	Non-minority Female
1a) All Loans (as in Column 5 of Table 6.18) n=765	1.057 (2.63)	–	0.585 (1.55)	-0.003 (0.01)	-0.518 (1.99)
1b) All Loans (as in Column 5 of Table 6.19) n=765	1.573 (3.16)	-1.975 (2.28)	0.335 (0.76)	0.167 (0.35)	-0.493 (1.66)

Source: See Table 6.18.

Notes: (1) Each line of this table represents a separate regression with all of the control variables. (2) The sample consists of firms that had applied for a loan and had their application approved.

**Table 6.22. Racial Differences in Failing to Apply for Loans Fearing Denial**

Specification	African American	Asian/Pacific Islander	Hispanic	Non-minority Female
<b>a) U.S.</b>				
No Other Control Variables (n=3,448)	0.353 (11.90)	0.046 (1.48)	0.173 (5.77)	0.051 (2.55)
Full Set of Control Variables (n=3,448)	0.209 (7.07)	-0.010 (0.36)	0.057 (2.06)	0.012 (0.65)
<b>b) EWSC division</b>				
No Other Control Variables (n=565)	0.317 (4.92)	-0.057 (0.65)	0.078 (1.28)	-0.004 (0.09)
Full Set of Control Variables (n=560)	0.204 (3.33)	-0.043 (0.64)	-0.026 (0.59)	-0.019 (0.51)
<b>c) Construction</b>				
No Other Control Variables (n=613)	0.371 (5.06)	0.117 (1.43)	0.020 (0.26)	0.122 (2.08)
Full Set of Control Variables (n=609)	0.292 (3.88)	0.105 (1.37)	-0.055 (0.96)	0.053 (1.00)

Source: See Table 6.18.

Notes: (1) Reported estimates are Probit derivatives with t-statistics in parentheses. (2) Full set of control variables as in Column 5 of Table 6.18, except for loan amount, year of application, and type of lender.

**Table 6.23. Models of Credit Card Use**

Specification	African American	Asian/ Pacific Islander	Hispanic	Nonminority Female	Sample Size
1) Business Credit Card	-0.001 (0.01)	-0.038 (1.00)	-0.014 (0.37)	-0.018 (0.72)	3,561
2) Personal Credit Card	-0.018 (0.54)	0.016 (0.44)	-0.050 (1.43)	0.012 (0.51)	3,561
3) Business Credit Card EWSC	0.015 (0.18)	-0.191 (1.71)	0.001 (0.01)	0.070 (1.10)	583
4) Personal Credit Card EWSC	-0.146 (2.05)	0.064 (0.60)	-0.051 (0.67)	0.001 (0.01)	583
3) Business Credit Card Construction & related	0.066 (0.73)	-0.070 (0.66)	0.104 (1.05)	-0.013 (0.18)	624
4) Personal Credit Card Construction & related	0.008 (0.100)	0.048 (0.48)	-0.086 (0.95)	-0.068 (0.92)	624

Source: See Table 6.18.

Notes: (1) Each line of this table represents a separate regression with the same control variables as Column 5 of Table 6.18, except for loan amount, year of application, and type of lender. (2) The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. (3) In all specifications, the sample size includes all firms. (4) Reported estimates are Probit derivatives with t-statistics in parentheses.

## I. Analysis of Credit Market Discrimination in the U.S. in 2003

The most recent wave of the Survey of Small Business Finances was made available by the Board of Governors of the Federal Reserve System in 2007.<sup>300</sup> This is the fourth and final survey of U.S. small businesses conducted by the Board of Governors since 1987.<sup>301</sup> The survey gathered data from 4,072 firms selected to be representative of small businesses operating in the U.S. at the end of 2003. The survey covered a nationally representative sample of U.S. for profit, non-financial, non-subsidary, nonagricultural, and nongovernmental businesses with fewer than 500 employees that were in operation at year-end 2003 and at the time of interview. Most interviews took place between June 2004 and January 2005. The sample was drawn from the Dun & Bradstreet Market Identifier file. The number of employees varied from zero to 486 with a weighted median of 3.0 and weighted mean of 8.6.

<sup>300</sup> See [www.federalreserve.gov/pubs/oss/oss3/ssbf03/ssbf03home.html](http://www.federalreserve.gov/pubs/oss/oss3/ssbf03/ssbf03home.html).

<sup>301</sup> The Federal Reserve Board cancelled the SSBF subsequent to the completion of the 2003 wave, ostensibly for financial reasons. See Robb (2010).

Unfortunately, the 2003 SSBF did not over-sample minority-owned firms, as in the first three survey waves. According to survey staff, this was due to concerns that doing so would delay the survey timeline and reduce the overall response rate.<sup>302</sup>

In 1998, almost 8 percent of survey respondents were African American, compared to slightly more than 3 percent in 2003. Hispanics were almost 7 percent in 1998 but less than 4 percent in 2003. Other minorities were 6.5 percent in 1998 but only 5.4 percent in 2003.<sup>303</sup> Although the population weights were adjusted to accommodate these changes, even these weighted percentages are significantly smaller for minorities in 2003 than in 1998.<sup>304</sup>

Mach and Wolken (2006) reported using these data that 13.1 percent of firms were owned by nonminority or Hispanic individuals; the share is statistically lower than in 1998 (14.6 percent). The shares for African Americans and Asians/Pacific Islanders each held roughly constant at 4 percent; the share of American Indians and Alaska natives held at roughly 1 percent. However, the share of Hispanics fell a statistically significant amount from 5.6 percent to 4.2 percent, which is somewhat surprising given the evidence that Hispanics are a growing share of the U.S. population—up from 12.5 percent in 2000 to 14.5 percent in 2005 (Table 4). The percentage of firms owned by females also declined from 72.0 percent to 64.8 percent.

Despite these drawbacks, our analysis of the 2003 SSBF yields results that are strongly consistent with those obtained from the 1993 and 1998 survey waves. The remainder of this section presents our findings from this analysis.<sup>305</sup>

## 1. Qualitative Evidence

Table 6.24 reports the results of asking business owners for the most important problem currently facing their firm. Consistent with the 1993 and 1998 surveys, firms owned by minority and women-owned firms were more likely to say that their most important problem was “financing and interest rates.” Once again, the African American-nonminority difference was most pronounced—only slightly more than 5 percent of nonminority male business owners reported this as their major problem compared to almost 21 percent of African American business owners.

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<sup>302</sup> See fn. 260, above.

<sup>303</sup> The impact on women was not as pronounced. Females were 23.3 percent in 1998 and 20.9 percent in 2003. For nonminority females, the figures are 17.8 percent in 1998 and 18.2 percent in 2003.

<sup>304</sup> Mach and Wolken (2006, Table 2) report that weighted figures for Blacks were 4.1 percent in 1998 and 3.7 percent in 2003. Hispanics were 5.6 and 4.2 percent, respectively; Asians and Pacific Islanders were 4.4 and 4.2 percent, respectively; Native Americans were 0.8 and 1.3 percent, respectively; and women were 24.3 and 22.4 percent, respectively.

<sup>305</sup> The data file provided by the Board of Governors includes five separate observations per firm. That is to say, there are 4240\*5=21,200 observations. These so-called multiple imputations are done via a randomized regression model, and are included because where there are missing observations several alternative estimates are provided. Where values are not missing the values for each of the five imputations are identical. We make use of the data from the first imputation: the results presented here are essentially identical whichever imputation is used. Overall, only 1.8 percent of observations in the data file were missing.

**Table 6.24. What is the Most Important Problem Facing Your Business Today?**

	<b>Non-minority Male</b>	<b>African American</b>	<b>Other</b>	<b>Hispanic</b>	<b>Non-minority Female</b>	<b>Total</b>
Financing and interest rates	5.4%	20.7%	9.1%	5.7%	5.8%	6.3%
Taxes	6.3%	2.4%	4.9%	7.7%	4.3%	5.7%
Inflation	2.7%	1.0%	2.3%	0.5%	1.4%	2.3%
Poor sales or profitability	17.8%	38.5%	28.9%	30.0%	22.5%	20.6%
Cost/availability of labor	1.5%	0.0%	0.6%	1.5%	1.5%	1.4%
Government regulations/red tape	4.7%	1.0%	5.4%	9.6%	2.5%	4.5%
Competition from larger firms	4.0%	2.7%	2.7%	3.6%	3.6%	3.8%
Quality of labor	7.9%	6.9%	5.0%	3.8%	6.5%	7.2%
Cost and availability of insurances	10.3%	1.8%	3.1%	5.2%	6.4%	8.6%
Other	2.6%	1.9%	4.0%	2.8%	1.6%	2.5%
None	5.3%	3.4%	9.4%	4.1%	8.6%	6.0%
Cash flow	6.2%	5.1%	4.6%	7.1%	6.8%	6.3%
Growth	0.9%	2.7%	0.4%	1.1%	0.8%	1.0%
Foreign competition	1.3%	0.0%	1.0%	0.1%	0.7%	1.0%
Competition - other	1.6%	0.8%	1.8%	0.1%	1.1%	1.4%
Availability of materials/resources	0.8%	0.8%	0.6%	1.6%	1.2%	0.9%
Labor problems other than cost or quality	1.2%	2.2%	0.2%	0.0%	1.3%	1.1%
Internal management/administrative problems	4.2%	2.5%	4.3%	1.0%	6.1%	4.4%
Environmental constraints	1.4%	0.7%	1.6%	2.3%	2.0%	1.6%
Advertising and public awareness	2.2%	1.8%	2.4%	1.8%	3.3%	2.4%
Market/economic/industry factors	4.9%	1.9%	4.0%	2.3%	6.2%	4.8%
Health care cost and availability	1.5%	0.0%	0.7%	0.8%	1.4%	1.4%
Energy costs	1.5%	0.0%	0.7%	3.7%	1.2%	1.4%
Costs other than health care and energy	2.2%	1.0%	0.1%	3.6%	1.0%	1.9%
Owner's personal problems	0.3%	0.0%	0.0%	0.0%	0.8%	0.4%
Technology	0.4%	0.0%	0.7%	0.0%	0.5%	0.4%
Dealing with insurance companies	0.3%	0.4%	0.0%	0.0%	0.4%	0.3%
War and September 11th	0.2%	0.0%	1.3%	0.0%	0.5%	0.3%

Source: NERA calculations from the 2003 SSBF (n=4,072).

Note: Results are weighted.

## 2. Differences in Loan Denial Rates by Race/Ethnicity

Tables 6.25 and 6.26 present estimates of loan denial probabilities for the nation as a whole and for the EWSC using a regression model comparable to that used with the 1993 and 1998 survey waves.<sup>306</sup>

Column (1) in Table 6.25 (comparable to Table 6.8 for 1993 and 6.18 for 1998) shows that African American-owned firms in 2003 had a 45.9 percentage point higher probability of denial than nonminority male-owned firms before taking into account the creditworthiness of the firm or any other characteristics. The addition of a large number of controls reduces the percentage point differential for African Americans to 9.4 in Column (5) as the full set of controls is added. The coefficients in Column (5) for nonminority females and other minority groups are not significant, however.

Table 6.26 (comparable to Table 6.9 for 1993 and 6.19 for 1998) focuses on the EWSC division and yields similar results—showing significantly larger denial probabilities for African American-owned firms than for nonminority male-owned firms, persisting even after the addition of all of the control variables. The EWSC Asian/Pacific Islander interaction term is also significant, indicating that this group was more than 39 percent more likely to be denied in the EWSC in 2003. Additionally, the EWSC gender interaction term is significant, indicating that nonminority women were over 5 percent more likely to be denied in the EWSC in 2003.

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<sup>306</sup> In 2003, the credit application question was changed from 1998 to once again include requests for renewals as well as new loans, making it comparable to the 1993 version.

**Table 6.25. Determinants of Loan Denial Rates—USA**

	(1)	(2)	(3)	(4)	(5)
African American	0.459 (8.38)	0.136 (5.47)	0.105 (4.80)	0.091 (5.04)	0.094 (4.95)
Asian/Pacific Islander	0.055 (1.51)	0.020 (1.59)	0.009 (1.01)	0.002 (0.49)	0.001 (0.18)
Hispanic	0.067 (1.74)	0.008 (0.83)	0.004 (0.58)	0.001 (0.30)	0.001 (0.25)
Native American and Other	0.184 (2.22)	0.061 (1.95)	0.032 (1.47)	0.021 (1.43)	0.021 (1.49)
Nonminority female	0.043 (2.17)	0.003 (0.70)	0.002 (0.49)	0.001 (0.57)	0.002 (0.76)
Judgments against owner		0.007 (0.66)	0.003 (0.35)	0.003 (0.54)	0.006 (0.90)
Judgments against firm		0.005 (1.16)	0.005 (1.42)	0.001 (0.54)	0.001 (0.64)
Firm delinquent		0.032 (3.78)	0.021 (3.23)	0.019 (3.89)	0.021 (4.08)
Personally delinquent		-0.007 (0.69)	-0.006 (1.02)	-0.003 (0.82)	-0.002 (0.58)
Owner Bankrupt past 7 years		0.046 (1.36)	0.041 (1.35)	0.052 (1.81)	0.044 (1.66)
Firm Bankrupt past 7 years		0.000 (0.03)	0.003 (0.37)	0.001 (0.17)	-0.001 (0.38)
\$1998 sales (*10 <sup>8</sup> )		-0.000 (1.68)	0.000 (0.04)	0.000 (0.29)	0.000 (0.51)
\$1998 firm equity (*10 <sup>8</sup> )		-0.000 (2.23)	-0.000 (1.03)	-0.000 (1.62)	-0.000 (1.63)
Owner home equity (*10 <sup>8</sup> )		0.000 (0.28)	0.000 (0.02)	-0.000 (0.45)	-0.000 (0.26)
Owner net worth (*10 <sup>8</sup> )		-0.000 (2.97)	-0.000 (2.92)	-0.000 (3.06)	-0.000 (3.26)
Owner years of experience		0.000 (0.31)	0.000 (1.00)	0.000 (0.82)	0.000 (0.62)
Owner share of business		0.000 (0.08)	0.000 (0.61)	0.000 (0.38)	0.000 (0.47)
Dun & Bradstreet credit ratings (4 variables)	No	Yes	Yes	Yes	Yes
Owner Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Geographic Division (8 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	1,664	1,655	1,655	1,655	1,605
Pseudo R <sup>2</sup>	.0850	.2267	.2901	.3336	.3681
Chi <sup>2</sup>	74.1	192.9	246.8	283.8	310.3
Log likelihood	-399.1	-328.9	-301.9	-283.4	-266.4

Source: See Table 6.26. Notes: (1) “Other firm characteristics” include variables indicating whether the firm had a line of credit, 2003 total employment, firm age, metropolitan area, legal form of organization (sole proprietorship, partnership, LLP, S-corporation, C-corporation, or LLC), existing long run relation with lender, geographic scope of market (local, regional, national, foreign or international), the value of the firm’s inventory, the firm’s cash holdings, the value of land held by the firm, and total salaries and wages paid. (2) “Characteristics of the loan” includes the size of the loan applied for.

**Table 6.26. Determinants of Loan Denial Rates—EWSC**

	(1)	(2)	(3)	(4)	(5)
African American	0.388 (6.78)	0.098 (4.60)	0.072 (3.96)	0.064 (4.12)	0.064 (4.03)
Asian/Pacific Islander	0.018 (0.51)	0.004 (0.45)	-0.000 (0.08)	-0.002 (0.81)	-0.002 (1.14)
Hispanic	0.067 (1.76)	0.006 (0.81)	0.003 (0.56)	0.001 (0.34)	0.001 (0.18)
Native and Other	0.162 (1.70)	0.074 (1.92)	0.032 (1.3)	0.010 (0.80)	0.012 (0.99)
Nonminority female	0.028 (1.43)	0.001 (0.19)	-0.000 (0.16)	-0.000 (0.07)	0.000 (0.16)
African American*EWSC	0.275 (2.17)	0.065 (1.47)	0.056 (1.46)	0.038 (1.42)	0.036 (1.41)
Asian/Pacific Islander*EWSC	0.392 (2.43)	0.333 (2.79)	0.332 (2.78)	0.362 (3.10)	0.395 (3.17)
Hispanic-Other*EWSC	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)	0.000 (0.0)
Native-Other*EWSC	0.137 (0.85)	0.011 (0.35)	0.027 (0.69)	0.045 (1.01)	0.026 (0.84)
Nonminority female*EWSC	0.178 (1.98)	0.056 (1.70)	0.071 (1.99)	0.057 (2.03)	0.052 (1.94)
EWSC division	-0.062 (2.91)	-0.013 (3.23)	-0.009 (3.19)	-0.006 (2.73)	-0.005 (2.87)
Creditworthiness (4 variables)	No	Yes	Yes	Yes	Yes
Dun & Bradstreet credit ratings (4 variables)	No	Yes	Yes	Yes	Yes
Balance Sheet (4 indicator variables)	No	Yes	Yes	Yes	Yes
Owner Experience (1 indicator variable)	No	Yes	Yes	Yes	Yes
Owner's Share of Business (1 indicator variable)	No	Yes	Yes	Yes	Yes
Owner's Education (6 indicator variables)	No	Yes	Yes	Yes	Yes
Other Firm Characteristics (17 variables)	No	No	Yes	Yes	Yes
Characteristics of the Loan (1 variable)	No	No	Yes	Yes	Yes
Geographic Division (7 indicator variables)	No	No	No	Yes	Yes
Industry (8 indicator variables)	No	No	No	Yes	Yes
Year of Application (5 indicator variables)	No	No	No	No	Yes
Type of Financial Institution (11 indicator vars.)	No	No	No	No	Yes
N	1,656	1,647	1,647	1,647	1,597
Pseudo R <sup>2</sup>	0.1029	0.2521	0.3155	0.3484	0.3826
Chi <sup>2</sup>	89.65	214.16	267.98	295.99	322.10
Log likelihood	-390.8	-317.6	-290.7	-276.7	-259.9

Source: See Table 6.24.

Notes: (1) t-statistics in parentheses. (2) Creditworthiness controls include presence of legal judgments against the firm during the previous 3 years, more than 60 days delinquent on any personal obligations of the firm's owner during the previous 3 years, more than 60 days delinquent on any business obligations of the firm during the previous 3 years, and declaration of owner of firm bankruptcy during the previous 7 years. (3) Balance sheet variables include firm sales in 1998, firm equity in 1998, owner's home equity in 1998, and owner's personal net worth (exclusive of firm equity and home equity) in 1998. (4) For other variables, see notes for Table 6.25.

### 3. Differences in Interest Rates, Credit Card Use, and Failure to Apply for Fear of Denial

Table 6.27 models the interest rate charged for those minority-owned and nonminority female-owned firms that were able to successfully obtain a loan (comparable to Tables 6.13 and 6.14 for 1993 and Table 6.21 for 1998). As was found in earlier surveys, African American business owners are hurt here as well since they have to pay, on average, 1.05 percentage points more for their loans than nonminority male business owners with identical characteristics. Hispanic business owners, as well, pay 0.99 percentage points more than their nonminority male counterparts.

Table 6.27 shows that the loan price differential is present for African American and Hispanic business owners in the EWSC as well. For African American-owned firms, the differential is 3.6 percentage points. For Hispanics, the differential is 3.5 percentage points.

Table 6.28 reports the results of estimating a model where the dependent variable is whether a business or personal credit card is used to pay business expenses (comparable to Tables 6.11 and 6.12 for 1993 and Table 6.23 for 1998). As noted above, the application procedure for business and personal credit cards is usually automated and not conducted face-to-face. If there were missing variables such as creditworthiness or some such characteristic unobserved to the econometrician, then the race and ethnicity indicator variables should enter significantly in these equations. Unlike earlier years, there is some evidence that African Americans are less likely to use personal credit cards for business expenses. However, this result is not observed for business credit cards, nor is it observed in the EWSC.

**Table 6.27. Models of Interest Rate Charged**

Specification	African American	African American * EWSC	Asian/Pacific Islander	Hispanic	Hispanic * EWSC	Native and Other	Non-minority Female
1a) All Loans (as in Column 5 of Table 6.25) n=1,537	1.046 (2.02)	n/a	0.430 (1.20)	0.991 (2.72)	n/a	0.260 (0.35)	-0.148 (0.75)
1b) All Loans (as in Column 5 of Table 6.26) n=1,537	0.810 (1.39)	2.797 (1.84)	0.541 (1.32)	0.837 (1.83)	2.619 (2.67)	1.251 (0.87)	-0.277 (1.23)

Source: See Table 6.24.

Notes: (1) Each line of this table represents a separate regression with all of the control variables as indicated. (2) Additionally, controls were included for whether the loan required a co-signer or guarantor, whether collateral was required and, if so, the type of collateral required. (3) The sample consists of firms that had applied for a loan and had their application approved.

**Table 6.28. Models of Credit Card Use**

Specification	African American	Asian/Pacific Islander	Hispanic	Native American and Other	Non-minority Female	Sample Size
1) Business Credit Card	-0.060 (1.13)	0.040 (0.91)	0.004 (0.08)	-0.001 (0.01)	0.002 (0.07)	3,676
2) Personal Credit Card	-0.132 (2.68)	0.036 (0.84)	-0.080 (1.77)	-0.040 (0.48)	0.036 (1.56)	3,676
3) Business Credit Card, EWSC	-0.017 (0.13)	-0.133 (0.92)	0.019 (0.18)		-0.196 (1.18)	563
4) Personal Credit Card, EWSC	-0.023 (0.18)	0.065 (0.50)	-0.189 (1.82)	0.074 (0.48)	0.006 (0.09)	563

Source: See Table 6.24.

Notes: (1) Each line of this table represents a separate regression with the same control variables as Column 5 of Table 6.27, except for loan amount, year of application, and type of lender. (2) The dependent variable indicates whether the firm used business or personal credit cards to finance business expenses. (3) In all specifications, the sample size is all firms. (4) Reported estimates are Probit derivatives with t-statistics in parentheses.

Finally, consistent with earlier results, Table 6.29 (comparable to Tables 6.15 for 1993 and 6.22 for 1998) shows that African American owners are much more likely not to apply for a loan fearing they will be denied. Even after controlling for a host of demographic, financial, geographic, and industry factors, African American business owners are still almost 17 percentage points more likely to fail to apply for loans for fear of denial—even though they need the credit. In the EWSC the phenomenon is evident as well—African American business owners are almost 19 percentage points more likely to fail to apply for fear of denial. In construction and related industries, the trend is even more pronounced at 30 percentage points. Nationally, and in the EWSC, there is evidence of this phenomenon for nonminority female business owners as well.

**Table 6.29. Racial Differences in Failing to Apply for Loans Fearing Denial**

Specification	African American	Asian/Pacific Islander	Hispanic	Native American and Other	Non-minority Female
<b>a) USA</b>					
No Other Control Variables (n=3,704)	0.385 (9.48)	0.059 (1.95)	0.138 (4.01)	0.138 (2.14)	0.072 (4.47)
Full Set of Control Variables (n=3,676)	0.166 (4.73)	0.038 (1.40)	0.050 (1.82)	0.052 (1.01)	0.035 (2.46)
<b>b) EWSC division</b>					
No Other Control Variables (n=3,694)	0.378 (8.26)	0.060 (1.85)	0.144 (3.74)	0.187 (2.30)	0.064 (3.66)
Full Set of Control Variables (n=3,666)	0.189 (4.69)	0.048 (1.62)	0.052 (1.70)	0.135 (1.88)	0.031 (1.99)
<b>c) Construction</b>					
No Other Control Variables (n=705)	0.492 (4.34)	-0.022 (0.29)	0.090 (1.22)	0.258 (2.17)	0.026 (0.64)
Full Set of Control Variables (n=695)	0.303 (3.16)	0.002 (0.04)	-0.009 (0.34)	0.137 (1.65)	-0.002 (0.11)

Source: See Table 6.24.

Notes: (1) Reported estimates are Probit derivatives with t-statistics in parentheses. (2) Full set of control variables as in Column 5 of Table 6.27, except for loan amount, year of application, and type of lender. (3) In Panel (b), interaction terms between race, gender, and EWSC were all insignificant.

## J. Further Analysis of Credit Market Discrimination: NERA Surveys 1999-2007

NERA has conducted local credit market surveys at nine other times and places since 1999. These include the Chicago metropolitan area in 1999, the State of Maryland in 2000, the Jacksonville, Florida metropolitan area in 2002, the Baltimore-Washington, DC metropolitan area in 2003, the St. Louis metropolitan area in 2004, the Denver metropolitan area in 2005, the State of Maryland (again) in 2005, the State of Massachusetts in 2005, and the Memphis, TN-MS-AR metropolitan area in 2007. The Chicago, Jacksonville, Baltimore, St. Louis, and Denver surveys focused on construction and construction-related industries, while the two Maryland surveys, the Massachusetts surveys, and the Memphis surveys, included other goods and services as well.

Our Chicago, Maryland I, and Jacksonville survey questionnaires followed the format of the 1993 NSSBF, while our Baltimore, St. Louis, Denver, Maryland II, Massachusetts, and Memphis surveys followed the format of the 1998 SSBF questionnaire.

As a final check on our findings in this chapter, we combined the results of these nine NERA surveys together in a consistent format and re-estimated the basic loan denial model on this larger file. These results appear below in Table 6.30, and are remarkably similar to results seen in Tables 6.8-6.9, 6.18-6.19, and 6.25-6.26. Denial probabilities for African American-owned firms compared to nonminority male-owned firms are 29 percentage points higher—even when creditworthiness controls, other firm and owner characteristics, and interaction terms are included.

Moreover, the NERA surveys found statistically significant loan denial disparities for Hispanic-owned firms and nonminority female-owned firms as well. Denial rates were 18-24 percentage points higher for Hispanic-owned firms and 5-9 percentage points higher for nonminority female-owned firms than for their nonminority male-owned counterparts. Significant loan denial disparities were also observed for Native American-owned firms in some cases (9-19 percentage points higher).

Finally, as shown in Table 6.31, we modeled the rate of interest charged, conditional upon receiving loan approval, using our nine-jurisdiction dataset. Results are very similar to that observed in Tables 6.13-6.14, 6.21 and 6.27. African Americans pay almost 170 basis points more, on average, for their business credit than do nonminority males, declining to 150 basis points when creditworthiness and other firm and owner controls are accounted for.

On the basis of the foregoing, we conclude that the evidence of credit discrimination from NERA's nine local credit market surveys conducted throughout the nation between 1999-2007 is entirely consistent with the results obtained using data from the 1993 NSSBF, the 1998 SSBF, and the 2003 SSBF.

**Table 6.30. Determinants of Loan Denial Rates—Nine Jurisdictions**

	(1)	(2)
	<i>Most Recent Application</i>	<i>Last Three Years</i>
African American	0.289 (8.2)	0.293 (7.60)
Hispanic	0.178 (3.86)	0.244 (4.59)
Native American	0.087 (1.69)	0.188 (3.29)
Asian/Pacific Islander	0.042 (0.72)	0.003 (0.05)
Other race	0.313 (3.07)	0.364 (3.15)
Nonminority female	0.046 (1.83)	0.086 (2.96)
Judgments	0.051 (1.23)	0.119 (2.24)
Firm delinquent	0.022 (2.7)	0.057 (5.90)
Personally delinquent	0.076 (7.38)	0.077 (6.03)
Bankrupt past 3 years	0.228 (3.99)	0.328 (4.74)
N	1,855	1,855
Pseudo R <sup>2</sup>	.1905	.1721
Chi <sup>2</sup>	336.0	363.3
Log likelihood	-714.1	-873.7

Source: NERA Credit Market Surveys, 1999-2007.

Notes: (1) Reported estimates are derivatives from Probit models, t-statistics are in parentheses. (2) Indicator variables are also included for the various jurisdictions.

**Table 6.31. Determinants of Interest Rates—Nine Jurisdictions**

	(1)	(2)
African American	1.683 (3.44)	1.491 (2.98)
Asian/Pacific Islander	1.221 (2.16)	0.789 (1.34)
Hispanic	0.820 (1.48)	0.895 (1.56)
Native American	1.241 (1.52)	1.008 (1.24)
Other race	-1.115 (0.63)	-1.072 (0.61)
Nonminority female	0.046 (0.16)	0.018 (0.06)
Judgments		0.537 (0.85)
Firm delinquent		-0.041 (0.36)
Personally delinquent		0.644 (3.65)
Bankrupt past 3 years		1.184 (1.13)
Creditworthiness, Firm, and Owner Characteristics	No	Yes
Loan Characteristics	Yes	Yes
N	1,490	1,463
Adjusted R <sup>2</sup>	.0831	.1046
F	11.4	11.05

Source: See Table 6.30.

Notes: (1) Reported estimates are OLS regression models, t-statistics are in parentheses. (2) Five indicators for primary owner’s education level, four indicators for legal form of organization, loan amount applied for, loan amount granted, and month and year of loan application were included. (3) Seven additional indicators for jurisdiction were also included.

## K. Conclusions

The results presented in this chapter indicate that African American-owned firms face serious obstacles in obtaining credit that are unrelated to their creditworthiness, industry, or geographic location. In a number of cases this is true as well for Hispanic-owned firms, Asian/Pacific Islander-owned firms, Native American-owned firms, and nonminority female-owned firms.

As in any regression-based study, our analysis hinges upon the proposition that all of the factors that are related to loan denial rates have been included in our statistical model. If, for example, African American business owners possess some unobservable characteristic that makes them less creditworthy, then our statistical finding would overstate the difference in loan denial rates. To check on this possibility, the models we have estimated include an extensive array of factors that could conceivably affect loan decisions. Additionally, we have also estimated several alternative specifications that could potentially identify the impact of such a bias. Moreover, we have conducted our own surveys on numerous occasions and in numerous places across the U.S. Throughout, we have consistently found that African Americans are disadvantaged in the small business credit market and that our specification tests support the interpretation of discrimination.

Another potential criticism is that this study has examined loan denial rates rather than loan default rates; some have claimed that the latter provides a more appropriate strategy for identifying discrimination. For example, if banks only approve loans for relatively good African American firms then African American firms should exhibit relatively low default rates. Such an approach has several significant shortcomings that are detailed in Browne and Tootell (1995) and Ladd (1998). For instance, one problem is that it relies on the distribution of default probabilities being similar for African American and nonminority applicants meeting the acceptance standard used for nonminority firms. A further problem is that it assumes that the loan originators know with a high degree of precision what determines defaults; however, little hard information exists on what causes default. Additionally, it would be hard to disentangle the factors associated with differences in default rates between nonminority- and African American-owned firms given the fact that the African American-owned firms that obtain credit are typically charged higher interest rates, as we have demonstrated. Finally, such an analysis would require longitudinal data, tracking firms for several years following loan origination. Such data do not exist. While we have highlighted the potential limitations of such an analysis, we believe that it would be fruitful for this sort of longitudinal data collection to take place and for future research to investigate this question more fully.

In addition, many of the criticisms levied against the home mortgage loan discrimination study of Munnell, et al. (1996) could perhaps be used here as well. Yet these criticisms appear to have been effectively countered by, for example, Browne and Tootell (1995) and Tootell (1996). What is important to keep in mind in reference to this work compared with Munnell, et al. (1996), is the magnitude of the estimated racial disparity. The absolute size of the raw racial differences found in the mortgage study are considerably smaller than those observed in this study regarding business credit.<sup>307</sup>

The magnitude of the racial difference in small business loan approval rates is substantial, even after controlling for observed differences in creditworthiness, and considerably larger than that found in the analysis of discrimination in mortgage markets. Why do the results for small

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<sup>307</sup> In the Boston Fed study, 10 percent of White mortgage applications were rejected compared with 28 percent for African Americans. Loan denial rates (weighted) for business credit in this study ranged from 8.3 to 26.2 percent for White males and between 50.0 and 65.9 percent for African American-owned firms (depending on which NSSBF or SSBF survey is used).

business loans differ so markedly from those obtained from mortgage loans? First, many mortgages are sold in the secondary market and a substantial fraction of mortgage lenders have little intention of keeping the loans they make. This added “distance” in the transaction might reduce the likelihood of discrimination. As Day and Liebowitz (1998, p. 6) point out, “economic self-interest, therefore, should reduce racial discrimination in this market more completely than in many others.” A highly sophisticated secondary market for loans to small firms does not exist. Second, the presence of special programs and regulatory incentives to encourage banks and others to increase their mortgage lending to minorities gives these groups some advantages in obtaining a mortgage.

Clearly, a portion of the difference in denial rates between nonminority males and other groups in both types of studies appears to be due to differences in the characteristics of the applicants. Even after controlling for these differences, however, the gap in denial rates in the small business credit market is considerably larger than that found in the mortgage market.<sup>308</sup>

Our analysis finds significant evidence that African American-owned businesses face impediments to obtaining credit that go beyond observable differences in their creditworthiness. These firms are more likely to report that credit availability was a problem in the past and expect it to be a problem in the future. In fact, these concerns prevented more African American-owned firms from applying for loans because they feared being turned down due to prejudice or discrimination. We also found that loan denial rates are significantly higher for African American-owned firms than for nonminority male-owned firms even after taking into account differences in an extensive array of measures of creditworthiness and other characteristics. This result appears to be largely insensitive to geographic location or to changes in econometric specification. Comparable findings are observed for other minority business owners and for nonminority women as well, although not with as much consistency as the findings for African Americans.

Overall, the evidence is consistent that African American-owned firms and other DBE firms face large and statistically significant disadvantages in the market for small business credit. The larger size and significance of the effects found in our analyses (compared to mortgage market analyses) significantly reduces the possibility that the observed differences can be explained away by some quirk of the econometric estimation procedure and, instead, strongly suggests that the observed differences are due to discrimination.

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<sup>308</sup> The gap in denial rates between African Americans and nonminorities with similar characteristics is between 34-46 percentage points in the small business credit market compared with 7 percentage points in the mortgage market.

## VII. DBE Utilization and Disparity in JMAA Contracting Activity

### A. Introduction

The *Croson* decision and its progeny have held that statistical evidence of race-based or gender-based disparities in business enterprise activity is a requirement for any state or local entity that desires to establish or maintain race-conscious or gender-conscious requirements for DBE participation in contracting and procurement. Chapters V and VI documented the extent of disparity facing minority- and women-owned firms in the private sector of JMAA's market area, where contracting and procurement activity is typically *not* subject to such requirements. In this Chapter, we combined the evidence from Chapter IV, which estimates DBE availability in JMAA's Market Area, with the Master Contract/Subcontract Database described in Chapter III in order to examine whether there is statistical evidence of disparities in public sector construction and consulting contracting activities supported by JMAA.

The statistical evidence reported in Chapter III has already established from which specific industries JMAA procures construction and consulting services as well as from which geographic areas it draws the majority of its prime contractors and subcontractors. In addition, the statistical evidence reported in Chapter IV has established what percentage of all firms in JMAA's geographic and product markets are DBEs.

This Chapter will document:

- To what extent have DBEs been utilized in the contracting and subcontracting activities of JMAA during the study period.
- Whether DBEs have been utilized to the extent that they are available in the relevant market area.

Below, we report the DBE utilization results using two measures—dollars awarded and dollars paid. We report this information for construction, consulting, and for both categories combined. We also report results separately for federally-assisted contracts and for locally-funded contracts.. All results are reported by race and gender as well as for all DBEs combined, and cover the entire JMAA market area.

### B. DBE Utilization

For this Study, we examined 4,192 prime contracts and purchases and 215 associated subcontracts awarded during the FFY 2005-2010 time period. These contracts have total award value of \$70.29 million and a total payment value of \$61.5 million.<sup>309</sup> Of these, 151 prime contracts and 72 associated subcontracts were issued on federally-assisted projects, with a total award value of \$30.5 million and a total paid value of \$21.7 million. Another 4,041 prime contracts and purchases and 143 associated subcontracts were issued on locally-funded projects,

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<sup>309</sup> Payments on contracts that were not substantially complete at the time of the Study data collection were excluded from the paid dollar totals.

## DBE Utilization and Disparity in JMAA Contracting Activity

with a total award value of \$39.8 million and a total paid value of \$39.8 million (See also Tables 3.1A-3.1C).

NAICS codes, DBE status, and detailed race and gender status for the prime contractors and subcontractors included in the Master Contract/Subcontract Database were established through extensive computer-assisted cross-referencing of firms in our database with firms in (a) JMAA's directory of certified DBEs,<sup>310</sup> (b) the master directory of DBEs assembled for this study, (c) Dun & Bradstreet, (d) company profiles drawn from American Business Information, Hoover's, Standard & Poors, and other sources, and (e) the results of our race/gender misclassification/non-classification surveys.

During the study period, as a group, we found that DBEs were awarded 24.49 percent and paid 30.13 percent of all contract and subcontract dollars in construction; awarded 21.31 percent and paid 21.53 percent of all contract and subcontract dollars in AE-CRS; awarded 37.22 percent and paid 41.43 percent of all contract and subcontract dollars in Services; and awarded 2.81 percent and paid 2.82 percent of all contract and subcontract dollars in Commodities. Altogether, DBEs were awarded 23.10 percent and paid 26.69 percent of all contract and subcontract dollars during the study period. Among DBEs, firms owned by African Americans earned the largest fraction of contracting and subcontracting dollars, followed in descending order by firms owned by nonminority females, Hispanics, Native Americans, and Asians/Pacific Islanders (see Tables 7.1 and 7.2).

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<sup>310</sup> JMAA's DBE directory is drawn from the Mississippi Unified Certification Program List of Certified DBE/ACDBE firms.

## DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.1. DBE Utilization at JMAA (All Contracts) (Dollars Awarded)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	20.88	18.13	24.40	0.34	18.31
Hispanic	0.04	1.71	1.42	0.00	0.45
Asian/Pacific Islander	0.00	0.00	0.00	0.57	0.08
Native American	0.39	0.22	0.39	0.05	0.32
Minority Total	21.31	20.06	26.21	0.96	19.16
Nonminority female	3.18	1.25	11.00	1.84	3.95
DBE Total	24.49	21.31	37.22	2.81	23.10
Non-DBE Total	75.51	78.69	62.78	97.19	76.90
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (\$)	41,572,938	8,639,828	10,616,202	9,458,557	70,287,524

Source: NERA Master Contract/Subcontract Database, FFY 2005-2010.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

**Table 7.2. DBE Utilization at JMAA (All Contracts) (Dollars Paid)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	25.59	18.13	23.53	0.34	20.39
Hispanic	0.05	1.85	2.10	0.00	0.62
Asian/Pacific Islander	0.00	0.00	0.00	0.57	0.09
Native American	0.48	0.19	0.40	0.05	0.36
Minority Total	26.11	20.18	26.03	0.97	21.46
Nonminority female	4.02	1.35	15.39	1.85	5.23
DBE Total	30.13	21.53	41.43	2.82	26.69
Non-DBE Total	69.87	78.47	58.57	97.18	73.31
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (\$)	33,692,218	7,985,799	10,193,117	9,415,200	61,286,334

Source and Notes: See Table 7.1.

Restricting the data to federally-assisted contracts and associated subcontracts, we found that DBEs were awarded 15.35 percent and paid 25.99 percent of all contract and subcontract dollars in construction; awarded 23.58 percent and paid 23.37 percent of all contract and subcontract dollars in AE-CRS; awarded 32.03 percent and paid 33.77 percent of all contract and subcontract dollars in Services; and awarded 1.91 percent and paid 1.95 percent of all contract and subcontract dollars in Commodities. Altogether, DBEs were awarded 16.58 percent and paid

## DBE Utilization and Disparity in JMAA Contracting Activity

22.28 percent of all federally-assisted contract and subcontract dollars during the study period. Among DBEs, firms owned by African Americans earned the largest fraction of contracting and subcontracting dollars, followed in descending order by firms owned by nonminority females, Hispanics, Asians/Pacific Islanders, and Native Americans (see Tables 7.3 and 7.4).

**Table 7.3. DBE Utilization at JMAA (Federally-Assisted Contracts) (Dollars Awarded)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	10.80	19.89	23.54	0.00	12.33
Hispanic	0.00	2.18	0.00	0.00	0.49
Asian/Pacific Islander	0.00	0.00	0.00	1.91	0.18
Native American	0.00	0.00	0.00	0.00	0.00
Minority Total	10.80	22.08	23.54	1.91	13.00
Nonminority female	4.54	1.50	8.49	0.00	3.58
DBE Total	15.35	23.58	32.03	1.91	16.58
Non-DBE Total	84.65	76.42	67.97	98.09	83.42
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (\$)	19,304,890	6,774,984	1,164,186	2,824,603	30,068,663

Source and Notes: See Table 7.1.

**Table 7.4. DBE Utilization at JMAA (Federally-Assisted Contracts) (Dollars Paid)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	18.10	19.42	17.50	0.00	16.09
Hispanic	0.00	2.34	0.00	0.00	0.70
Asian/Pacific Islander	0.00	0.00	0.00	1.95	0.26
Native American	0.00	0.00	0.00	0.00	0.00
Minority Total	18.10	21.76	17.50	1.95	17.05
Nonminority female	7.89	1.61	16.27	0.00	5.22
DBE Total	25.99	23.37	33.77	1.95	22.28
Non-DBE Total	74.01	76.63	66.23	98.05	77.72
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (\$)	11,333,459	6,330,549	652,068	2,776,315	21,092,391

Source and Notes: See Table 7.1.

Restricting the data to locally-funded contracts and associated subcontracts, we found that DBEs were awarded 32.41 percent and paid 32.23 percent of all contract and subcontract dollars in

## DBE Utilization and Disparity in JMAA Contracting Activity

construction; awarded 13.07 percent and paid 14.51 percent of all contract and subcontract dollars in AE-CRS; awarded 37.86 percent and paid 41.95 percent of all contract and subcontract dollars in Services; and awarded 3.19 percent and paid 3.18 percent of all contract and subcontract dollars in Commodities.

Altogether, DBEs were awarded 27.98 percent and paid 29.01 percent of all locally-funded contract and subcontract dollars during the study period. Among DBEs, firms owned by African Americans earned the largest fraction of contracting and subcontracting dollars, followed in descending order by firms owned by nonminority females, Hispanics, Native Americans, and Asians/Pacific Islanders (see Tables 7.5 and 7.6).

**Table 7.5. DBE Utilization at JMAA (Locally-Funded Contracts) (Dollars Awarded)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	29.62	11.71	24.51	0.49	22.78
Hispanic	0.07	0.00	1.60	0.00	0.42
Asian/Pacific Islander	0.00	0.00	0.00	0.00	0.00
Native American	0.72	1.02	0.43	0.07	0.56
Minority Total	30.41	12.73	26.54	0.56	23.76
Nonminority female	2.00	0.35	11.31	2.63	4.22
DBE Total	32.41	13.07	37.86	3.19	27.98
Non-DBE Total	67.59	86.93	62.14	96.81	72.02
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (\$)	22,268,048	1,864,844	9,452,016	6,633,954	40,218,862

Source and Notes: See Table 7.1.

## DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.6. DBE Utilization at JMAA (Locally-Funded Contracts) (Dollars Paid)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	29.38	13.19	23.94	0.49	22.65
Hispanic	0.07	0.00	2.25	0.00	0.57
Asian/Pacific Islander	0.00	0.00	0.00	0.00	0.00
Native American	0.72	0.93	0.43	0.07	0.55
Minority Total	30.17	14.12	26.62	0.56	23.78
Nonminority female	2.05	0.39	15.33	2.62	5.23
DBE Total	32.23	14.51	41.95	3.18	29.01
Non-DBE Total	67.77	85.49	58.05	96.82	70.99
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (\$)	22,358,759	1,655,250	9,541,049	6,638,885	40,193,943

Source and Notes: See Table 7.1.

As shown below in Tables 7.7 through 7.10, DBE participation rates in prime contracting activity are in general far lower than when subcontract opportunities are also included. This is true for all four major procurement categories. It also holds true when looking only at federally-assisted contracts or only at locally-funded contracts.

**Table 7.7. DBE Utilization at JMAA (Prime Contracts) (Federally-Assisted Contract) (Dollars Awarded)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	0.00	13.16	9.81	0.00	3.34
Hispanic	0.00	0.00	0.00	0.00	0.00
Asian/Pacific Islander	0.00	0.00	0.00	1.91	0.18
Native American	0.00	0.00	0.00	0.00	0.00
Minority Total	0.00	13.16	9.81	1.91	3.52
Nonminority female	4.64	0.00	8.48	0.00	3.31
DBE Total	4.64	13.16	18.29	1.91	6.83
Non-DBE Total	95.36	86.84	81.71	98.09	93.17
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (Contracts)	11	16	96	20	143
Total (\$)	19,304,890	6,774,984	1,164,186	2,824,603	30,068,663

Source and Notes: See Table 7.1.

## DBE Utilization and Disparity in JMAA Contracting Activity

For example, African American participation in federally-assisted prime construction contracts during the study period was 0.0 percent. For locally-funded prime construction contracts, their participation was approximately 5.3 percent. Overall, DBE participation at the prime contracting level in federally-assisted contracts fell between 6.83 percent (awards) and 9.84 percent (payments) during the study period. For locally-funded contracts, overall DBE participation at the prime contracting level fell between 10.02 percent (awards) and 11.12 percent (payments).

**Table 7.8. DBE Utilization at JMAA (Prime Contracts) (Federally-Assisted Contract) (Dollars Paid)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	0.00	14.08	17.52	0.00	4.77
Hispanic	0.00	0.00	0.00	0.00	0.00
Asian/Pacific Islander	0.00	0.00	0.00	1.95	0.26
Native American	0.00	0.00	0.00	0.00	0.00
Minority Total	0.00	14.08	17.52	1.95	5.02
Nonminority female	8.02	0.00	16.25	0.00	4.81
DBE Total	8.02	14.08	33.77	1.95	9.84
Non-DBE Total	91.98	85.92	66.23	98.05	90.16
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (Contracts)	11	16	95	20	142
Total (\$)	11,333,459	6,330,549	652,068	2,776,315	21,092,391

Source and Notes: See Table 7.1.

**Table 7.9. DBE Utilization at JMAA (Prime Contracts) (Locally-Funded Contracts) (Dollars Awarded)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	5.31	9.11	7.79	0.49	5.28
Hispanic	0.00	0.00	1.57	0.00	0.37
Asian/Pacific Islander	0.00	0.00	0.00	0.00	0.00
Native American	0.81	0.00	0.43	0.07	0.56
Minority Total	6.13	9.11	9.79	0.56	6.22
Nonminority female	0.70	0.00	12.53	2.63	3.80
DBE Total	6.83	9.11	22.32	3.19	10.02
Non-DBE Total	93.17	90.89	77.68	96.81	89.98
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (Contracts)	350	49	1,120	2,530	4,049
Total (\$)	22,268,048	1,849,844	9,601,958	6,633,954	40,353,804

Source and Notes: See Table 7.1.

## DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.10. DBE Utilization at JMAA (Prime Contracts) (Locally-Funded Contracts) (Dollars Paid)**

D/M/WBE Type	Procurement Category				
	Construction (%)	AE-CRS (%)	Services (%)	Commodities (%)	Overall (%)
African American	5.29	10.27	7.37	0.49	5.20
Hispanic	0.00	0.00	2.21	0.00	0.53
Asian/Pacific Islander	0.00	0.00	0.00	0.00	0.00
Native American	0.81	0.00	0.42	0.07	0.56
Minority Total	6.10	10.27	10.01	0.56	6.30
Nonminority female	0.75	0.00	16.55	2.62	4.83
DBE Total	6.85	10.27	26.55	3.18	11.12
Non-DBE Total	93.15	89.73	73.45	96.82	88.88
Total (%)	100.00	100.00	100.00	100.00	100.00
Total (Contracts)	350	49	1,119	2,530	4,048
Total (\$)	22,358,759	1,640,600	9,695,720	6,638,885	40,333,964

Source and Notes: See Table 7.1.

Tables 7.11 to 7.18 demonstrate the importance of subcontract opportunities to DBE participation in JMAA contracting. For each prime with an award amount of \$10,000 or greater, we noted whether or not JMAA placed a subcontract participation goal on the contract.

For example, as shown in Tables 7.11 and 7.12, on federally-assisted contracts with subcontracting goals, African American participation as a percentage of total subcontracting dollars in construction was between 35.87 percent (awards) and 39.67 percent (payments). In AE-CRS it was between 32.21 percent (awards) and 33.47 percent (payments), and in Services it was between 53.87 percent (awards) and 100.00 percent (payments). On federally-assisted contracts without goals (of which there were only 18), overall DBE participation as a percentage of total subcontracting dollars was 0.0 percent (see Tables 7.13 and 7.14).

On locally-funded contracts with subcontracting goals, as shown in Tables 7.15 and 7.16, African American participation as a percentage of total subcontracting dollars in construction, for example, was between 58.64 percent (awards) and 58.61 percent (payments). In AE-CRS it was between 50.29 percent (awards) and 50.78 percent (payments), and in Services it was 89.45 percent (awards and payments). On locally-funded contracts without goals, as shown in Tables 7.17 and 7.18, African American participation as a percentage of total subcontracting dollars in construction was 16.32 percent (awards and payments). In AE-CRS it was between 22.94 percent (awards) and 22.16 percent (payments), and in Services it was between 96.57 percent (awards) and 96.35 percent (payments).

DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.11. DBE Utilization at JMAA (Subcontracts) (With Goal) (Federally-Assisted Contracts) (Dollars Awarded)**

D/M/WBE Type	Procurement Category			
	Construction (%)	AE-CRS (%)	Services (%)	Overall (%)
African American	31.73	22.80	53.83	29.93
Hispanic	0.00	5.57	0.00	1.55
Asian/Pacific Islander	0.00	0.00	0.00	0.00
Native American	0.00	0.00	0.00	0.00
Minority Total	31.73	28.38	53.83	31.48
Nonminority female	4.15	3.83	0.04	3.93
DBE Total	35.87	32.21	53.87	35.41
Non-DBE Total	64.13	67.79	46.13	64.59
Total (Subcontract %)	100.00	100.00	100.00	100.00
Total (Contracts)	7	8	3	18
Total (\$)	19,257,298	6,455,684	834,037	26,547,020
Total (Subcontracts)	28	28	6	62
Total (Subcontract \$)	6,572,546	2,654,886	297,141	9,524,574

Source and Notes: See Table 7.1.

**Table 7.12. DBE Utilization at JMAA (Subcontracts) (With Goal) (Federally-Assisted Contracts) (Dollars Paid)**

D/M/WBE Type	Procurement Category			
	Construction (%)	AE-CRS (%)	Services (%)	Overall (%)
African American	35.04	22.13	0.00	31.51
Hispanic	0.00	6.72	0.00	1.84
Asian/Pacific Islander	0.00	0.00	0.00	0.00
Native American	0.00	0.00	0.00	0.00
Minority Total	35.04	28.85	0.00	33.35
Nonminority female	4.63	4.62	100.00	4.63
DBE Total	39.67	33.47	100.00	37.98
Non-DBE Total	60.33	66.53	0.00	62.02
Total (Subcontract %)	100.00	100.00	100.00	100.00
Total (Contracts)	7	8	2	17
Total (\$)	11,283,145	6,010,720	209,586	17,503,451
Total (Subcontracts)	28	28	1	57
Total (Subcontract \$)	5,853,505	2,201,437	127	8,055,070

Source and Notes: See Table 7.1.

DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.13. DBE Utilization at JMAA (Subcontracts) (Without Goal) (Federally-Assisted Contracts) (Dollars Awarded)**

D/M/WBE Type	Procurement Category			
	Construction (%)	AE-CRS (%)	Services (%)	Overall (%)
African American		0.00		0.00
Hispanic		0.00		0.00
Asian/Pacific Islander		0.00		0.00
Native American		0.00		0.00
Minority Total		0.00		0.00
Nonminority female		0.00		0.00
DBE Total		0.00		0.00
Non-DBE Total		100.00		0.00
Total (Subcontract %)		100.00		100.00
Total (Contracts)	1	3	9	13
Total (\$)	37,675	299,800	241,944	579,419
Total (Subcontracts)	0	3	0	3
Total (Subcontract \$)		\$22,339		\$22,339

Source and Notes: See Table 7.1.

**Table 7.14. DBE Utilization at JMAA (Subcontracts) (Without Goal) (Federally-Assisted Contracts) (Dollars Paid)**

D/M/WBE Type	Procurement Category			
	Construction (%)	AE-CRS (%)	Services (%)	Overall (%)
African American		0.00		0.00
Hispanic		0.00		0.00
Asian/Pacific Islander		0.00		0.00
Native American		0.00		0.00
Minority Total		0.00		0.00
Nonminority female		0.00		0.00
DBE Total		0.00		0.00
Non-DBE Total		100.00		0.00
Total (Subcontract %)		100.00		100.00
Total (Contracts)	1	3	9	13
Total (\$)	37,675	299,800	241,944	579,419
Total (Subcontracts)	0	3	0	3
Total (Subcontract \$)		\$22,339		\$22,339

Source and Notes: See Table 7.1.

## DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.15. DBE Utilization at JMAA (Subcontracts) (With Goal) (Locally-Funded Contracts) (Dollars Awarded)**

D/M/WBE Type	Procurement Category			
	Construction (%)	AE-CRS (%)	Services (%)	Overall (%)
African American	55.44	50.29	89.45	57.53
Hispanic	0.16	0.00	0.00	0.15
Asian/Pacific Islander	0.00	0.00	0.00	0.00
Native American	0.00	0.00	0.00	0.00
Minority Total	55.60	50.29	89.45	57.68
Nonminority female	3.04	0.00	0.00	2.84
DBE Total	58.64	50.29	89.45	60.53
Non-DBE Total	41.36	49.71	10.55	39.47
Total (Subcontract %)	100.00	100.00	100.00	100.00
Total (Contracts)	13	3	6	22
Total (Subcontracts)	64	4	16	84
Total (Subcontract \$)	10,219,612	36,714	678,759	10,935,085

Source and Notes: See Table 7.1.

**Table 7.16. DBE Utilization at JMAA (Subcontracts) (With Goal) (Locally-Funded Contracts) (Dollars Paid)**

D/M/WBE Type	Procurement Category			
	Construction (%)	AE-CRS (%)	Services (%)	Overall (%)
African American	55.38	50.78	89.45	57.49
Hispanic	0.16	0.00	0.00	0.15
Asian/Pacific Islander	0.00	0.00	0.00	0.00
Native American	0.00	0.00	0.00	0.00
Minority Total	55.54	50.78	89.45	57.64
Nonminority female	3.07	0.00	0.00	2.87
DBE Total	58.61	50.78	89.45	60.51
Non-DBE Total	41.39	49.22	10.55	39.49
Total (Subcontract %)	100.00	100.00	100.00	100.00
Total (Contracts)	13	3	6	22
Total (Subcontracts)	64	4	16	84
Total (Subcontract \$)	10,182,796	36,364	678,759	10,897,919

Source and Notes: See Table 7.1.

**DBE Utilization and Disparity in JMAA Contracting Activity**

**Table 7.17. DBE Utilization at JMAA (Subcontracts) (Without Goal) (Locally-Funded Contracts) (Dollars Awarded)**

D/M/WBE Type	Procurement Category			
	Construction (%)	AE-CRS (%)	Services (%)	Overall (%)
African American	16.32	12.67	91.67	68.81
Hispanic	0.00	0.00	0.00	0.00
Asian/Pacific Islander	0.00	0.00	0.00	0.00
Native American	0.00	7.67	0.00	1.10
Minority Total	16.32	20.34	91.67	69.91
Nonminority female	0.00	2.60	4.90	3.82
DBE Total	16.32	22.94	96.57	73.73
Non-DBE Total	83.68	77.06	3.43	26.27
Total (Subcontract %)	100.00	100.00	100.00	100.00
Total (Contracts)	36	24	85	145
Total (Subcontracts)	21	29	16	66
Total (Subcontract \$)	265,700	247,871	1,218,801	1,732,372

Source and Notes: See Table 7.1.

**Table 7.18. DBE Utilization at JMAA (Subcontracts) (Without Goal) (Locally-Funded Contracts) (Dollars Paid)**

D/M/WBE Type	Procurement Category			
	Construction (%)	AE-CRS (%)	Services (%)	Overall (%)
African American	16.32	13.09	91.70	69.14
Hispanic	0.00	0.00	0.00	0.00
Asian/Pacific Islander	0.00	0.00	0.00	0.00
Native American	0.00	6.39	0.00	0.89
Minority Total	16.32	19.48	91.70	70.03
Nonminority female	0.00	2.68	4.64	3.65
DBE Total	16.32	22.16	96.35	73.68
Non-DBE Total	83.68	77.84	3.65	26.32
Total (Subcontract %)	100.00	100.00	100.00	100.00
Total (Contracts)	36	24	84	144
Total (Subcontracts)	21	29	16	66
Total (Subcontract \$)	265,820	240,073	1,218,335	1,724,227

Source and Notes: See Table 7.1.

## DBE Utilization and Disparity in JMAA Contracting Activity

Turning to Concessions, we found that DBEs received 1.93 percent of concessions revenues during the study period when revenues from car rentals are included and 14.38 percent when they are excluded. All participating ACDBEs were African American-owned (see Table 7.19).<sup>311</sup>

**Table 7.19. DBE Utilization in JMAA Concessions**

D/M/WBE Type	Category	
	Including Car Rental (%)	Excluding Car Rental (%)
African American	1.93	14.38
Hispanic	0.00	0.00
Asian/Pacific Islander	0.00	0.00
Native American	0.00	0.00
Minority Total	1.93	14.38
Nonminority female	0.00	0.00
DBE Total	1.93	14.38
Non-DBE Total	98.07	85.62
Total (%)	100.00	100.00
Total (\$)	134,527,530	18,011,274

Source: NERA Master Concessions Database, FFY 2006-2010.

Note: Figures are rounded. Rounding was performed subsequent to any mathematical calculations.

### C. Disparity Analysis

#### 1. Results by Major Procurement Category

To determine whether DBEs have been underutilized at JMAA, we should ideally examine public expenditures that were *not* subject to subcontracting goals. As a result of the DBE Program, however, JMAA has a longstanding policy of setting such goals in its federally-assisted contracting activities. In addition, JMAA has set subcontracting goals on many of its locally-funded contracts as well during the study period.

Given this, JMAA's own data may not show evidence of underutilization, even if such underutilization exists in the private sector of its relevant market area. This is especially true where a DBE Program is well established. Instead, the Airport's own data, in our view, is most useful for examining the effectiveness of its DBE policies during the study time period. On the other hand, if actual JMAA DBE utilization still turns out to be significantly less than DBE availability in certain contracting categories, then JMAA's data will provide evidence of adverse disparities as well.

<sup>311</sup> For concessions utilization statistics by detailed industry, see Appendix Tables AC.25 and AC.26.

## DBE Utilization and Disparity in JMAA Contracting Activity

In this section, we compare our estimates of DBE utilization in JMAA's contracting and subcontracting activities to our estimates of DBE availability in JMAA's geographic and product market area. Tables 7.20 and 7.21 present the results of this comparison using dollars awarded and dollars paid, respectively, as the metric of utilization. These two tables include all funding sources, both federal and local. Tables 7.22 and 7.23 are restricted to federally-assisted contracts, and Tables 7.24 and 7.25 are restricted to locally-funded contracts.

In each table, the figures in the utilization column include both prime contract and subcontract dollars and were derived as described above in this chapter. The figures in the availability column were derived as described in Chapter IV. The disparity ratio, which appears in the final column of Tables 7.20 through 7.25, is derived by dividing utilization by availability and then multiplying the result by 100. A disparity ratio below 100 indicates that DBEs are not participating in JMAA's contracting and subcontracting at a level that is consistent with their estimated availability in the relevant marketplace. A disparity ratio of 80 or lower is considered to be large, or substantively, significant. A disparity ratio is said to be statistically significant if it is unlikely to be caused by chance alone. In the tables below, statistical significance is indicated by one or more asterisks to the right of the disparity ratio.

In Construction, large and statistically significant disparities were observed for firms owned by Hispanics, Asians/Pacific Islanders, Native Americans, and nonminority females.

In AE-CRS, large and statistically significant disparities were observed for firms owned by Hispanics, Asians/Pacific Islanders, Native Americans, and nonminority females, and DBEs as a group.

In Services, large and statistically significant disparities were observed for firms owned by Hispanics and Asians/Pacific Islanders. Large, but not statistically significant, disparities were observed for Native Americans and nonminority females.

Commodities is the one major procurement area where it is generally not possible to set subcontracting goals, since subcontracting opportunities rarely exist on such contracts and purchases. As a result, large and statistically significant disparities were observed for firms owned by African Americans, Hispanics, Asians/Pacific Islanders, nonminority females, minorities as a group, and DBEs as a group. Large, but not statistically significant, disparities were also observed for Native Americans.

## DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.20. Utilization, Availability, and Disparity Results for JMAA Contracting, Overall and by Contracting Category (All Funds) (Dollars Awarded)**

Contracting Category/DBE Type	Utilization	Availability	Disparity Ratio
<b>Construction</b>			
African American	20.88	9.38	
Hispanic	0.04	1.23	3.2 ***
Asian and Pacific Islander	0.00	0.93	0.0 ***
Native American	0.39	1.34	28.8
Minority Total	21.31	12.87	
Nonminority female	3.18	10.90	29.2 **
DBE total	24.49	23.77	
<b>AE-CRS</b>			
African American	18.13	10.62	
Hispanic	1.71	1.66	
Asian and Pacific Islander	0.00	0.58	0.0 ***
Native American	0.22	0.47	46.5
Minority Total	20.06	13.33	
Nonminority female	1.25	17.67	7.1 ***
DBE total	21.31	31.00	68.8
<b>Services</b>			
African American	24.40	11.26	
Hispanic	1.42	1.00	
Asian and Pacific Islander	0.00	0.22	0.0 ***
Native American	0.39	0.11	
Minority Total	26.21	12.59	
Nonminority female	11.00	18.03	61.0
DBE total	37.22	30.62	
<b>Commodities</b>			
African American	0.34	9.65	3.5 ***
Hispanic	0.00	0.84	0.0 ***
Asian and Pacific Islander	0.57	2.69	21.2 *
Native American	0.05	0.35	14.9
Minority Total	0.96	13.54	7.1 ***
Nonminority female	1.84	21.00	8.8 ***
DBE total	2.81	34.54	8.1 ***

Source: Calculations from NERA Master Contract/Subcontract Database and NERA Baseline Business Universe.

Notes: (1) “\*” indicates an adverse disparity that is statistically significant at the 10% level or better (90% confidence). “\*\*” indicates the disparity is significant at a 5% level or better (95% confidence). “\*\*\*” indicates significance at a 1% level or better (99% confidence). (2) An empty cell in the Disparity Ratio column indicates that no adverse disparity was observed for that category.

## DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.21. Utilization, Availability, and Disparity Results for JMAA Contracting, Overall and by Contracting Category (All Funds) (Dollars Paid)**

Contracting Category/DBE Type	Utilization	Availability	Disparity Ratio
<b>Construction</b>			
African American	25.59	9.99	
Hispanic	0.05	1.26	3.9 ***
Asian/Pacific Islander	0.00	0.92	0.0 ***
Native American	0.48	1.27	37.6
Minority Total	26.11	13.44	
Nonminority female	4.02	10.66	37.7 **
DBE total	30.13	24.10	
<b>AE-CRS</b>			
African American	18.13	10.62	
Hispanic	1.85	1.66	
Asian/Pacific Islander	0.00	0.59	0.0 ***
Native American	0.19	0.48	40.3
Minority Total	20.18	13.34	
Nonminority female	1.35	17.62	7.7 ***
DBE total	21.53	30.97	69.5
<b>Services</b>			
African American	23.53	11.02	
Hispanic	2.10	1.01	
Asian/Pacific Islander	0.00	0.24	0.0 ***
Native American	0.40	0.12	
Minority Total	26.03	12.39	
Nonminority female	15.39	17.30	89.0
DBE total	41.43	29.69	
<b>Commodities</b>			
African American	0.34	9.66	3.5 ***
Hispanic	0.00	0.84	0.0 ***
Asian/Pacific Islander	0.57	2.69	21.3 **
Native American	0.05	0.35	15.0
Minority Total	0.97	13.53	7.2 ***
Nonminority female	1.85	21.02	8.8 ***
DBE total	2.82	34.56	8.2 ***

Source and Notes: See Table 7.20.

## DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.22. Utilization, Availability, and Disparity Results for JMAA Contracting, Overall and by Contracting Category (Federally-Assisted Contracts) (Dollars Awarded)**

Contracting Category/DBE Type	Utilization	Availability	Disparity Ratio
<b>Construction</b>			
African American	10.80	6.96	
Hispanic	0.00	1.12	0.0 ***
Asian/Pacific Islander	0.00	0.99	0.0 ***
Native American	0.00	1.48	0.0 ***
Minority-owned	10.80	10.56	
Nonminority female	4.54	11.71	38.8
DBE total	15.35	22.27	68.9
<b>AE-CRS</b>			
African American	19.89	10.67	
Hispanic	2.18	1.66	
Asian/Pacific Islander	0.00	0.57	0.0 **
Native American	0.00	0.47	0.0 **
Minority-owned	22.08	13.38	
Nonminority female	1.50	17.63	8.5 ***
DBE total	23.58	31.01	76.0
<b>Services</b>			
African American	23.54	9.96	
Hispanic	0.00	1.57	0.0 ***
Asian/Pacific Islander	0.00	0.12	0.0
Native American	0.00	0.11	0.0
Minority-owned	23.54	11.75	
Nonminority female	8.49	17.12	49.6
DBE total	32.03	28.88	
<b>Commodities</b>			
African American	0.00	6.07	0.0 ***
Hispanic	0.00	0.04	0.0
Asian/Pacific Islander	1.91	2.04	93.6
Native American	0.00	0.20	0.0
Minority-owned	1.91	8.36	22.9
Nonminority female	0.00	16.23	0.0 ***
DBE total	1.91	24.60	7.8 ***

Source and Notes: See Table 7.20.

## DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.23. Utilization, Availability, and Disparity Results for JMAA Contracting, Overall and by Contracting Category (Federally-Assisted Contracts) (Dollars Paid)**

Contracting Category/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Construction</b>			
African American	18.10	7.79	
Hispanic	0.00	1.15	0.0 ***
Asian/Pacific Islander	0.00	1.07	0.0 ***
Native American	0.00	1.22	0.0 ***
Minority-owned	18.10	11.23	
Nonminority female	7.89	11.68	67.5
DBE total	25.99	22.92	
<b>AE-CRS</b>			
African American	19.42	10.67	
Hispanic	2.34	1.66	
Asian/Pacific Islander	0.00	0.58	0.0 ***
Native American	0.00	0.48	0.0 ***
Minority-owned	21.76	13.39	
Nonminority female	1.61	17.59	9.1 ***
DBE total	23.37	30.98	75.4
<b>Services</b>			
African American	17.50	10.35	
Hispanic	0.00	1.55	0.0 ***
Asian/Pacific Islander	0.00	0.23	0.0
Native American	0.00	0.17	0.0
Minority-owned	17.50	12.30	
Nonminority female	16.27	16.37	99.4
DBE total	33.77	28.67	
<b>Commodities</b>			
African American	0.00	6.06	0.0 ***
Hispanic	0.00	0.04	0.0
Asian/Pacific Islander	1.95	2.05	94.8
Native American	0.00	0.20	0.0
Minority-owned	1.95	8.35	23.3
Nonminority female	0.00	16.25	0.0 ***
DBE total	1.95	24.60	7.9 ***

Source and Notes: See Table 7.20.

## DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.24. Utilization, Availability, and Disparity Results for JMAA Contracting, Overall and by Contracting Category (Locally-Funded Contracts) (Dollars Awarded)**

Contracting Category/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Construction</b>			
African American	29.62	10.57	
Hispanic	0.07	1.28	5.8 ***
Asian/Pacific Islander	0.00	0.88	0.0 ***
Native American	0.72	1.28	56.2
Minority-owned	30.41	14.02	
Nonminority female	2.00	10.37	19.3 ***
DBE total	32.41	24.39	
<b>AE-CRS</b>			
African American	11.71	10.33	
Hispanic	0.00	1.65	0.0 ***
Asian/Pacific Islander	0.00	0.63	0.0 ***
Native American	1.02	0.46	
Minority-owned	12.73	13.06	97.4
Nonminority female	0.35	17.85	1.9 ***
DBE total	13.07	30.91	42.3 ***
<b>Services</b>			
African American	24.51	11.49	
Hispanic	1.60	0.90	
Asian/Pacific Islander	0.00	0.24	0.0 ***
Native American	0.43	0.11	
Minority-owned	26.54	12.74	
Nonminority female	11.31	18.19	62.2
DBE total	37.86	30.92	
<b>Commodities</b>			
African American	0.49	10.42	4.7 ***
Hispanic	0.00	0.98	0.0 ***
Asian/Pacific Islander	0.00	2.91	0.0 ***
Native American	0.07	0.39	19.1
Minority-owned	0.56	14.69	3.8 ***
Nonminority female	2.63	22.14	11.9 ***
DBE total	3.19	36.83	8.6 ***

Source and Notes: See Table 7.20.

## DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.25. Utilization, Availability, and Disparity Results for JMAA Contracting, Overall and by Contracting Category (Locally-Funded Contracts) (Dollars Paid)**

Contracting Category/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Construction</b>			
African American	29.38	10.58	
Hispanic	0.07	1.29	5.7 ***
Asian/Pacific Islander	0.00	0.88	0.0 ***
Native American	0.72	1.28	56.0
Minority-owned	30.17	14.03	
Nonminority female	2.05	10.37	19.8 ***
DBE total	32.23	24.40	
<b>AE-CRS</b>			
African American	13.19	10.37	
Hispanic	0.00	1.64	0.0 ***
Asian/Pacific Islander	0.00	0.60	0.0 ***
Native American	0.93	0.46	
Minority-owned	14.12	13.08	
Nonminority female	0.39	17.82	2.2 ***
DBE total	14.51	30.90	47.0 ***
<b>Services</b>			
African American	23.94	11.10	
Hispanic	2.25	0.94	
Asian/Pacific Islander	0.00	0.24	0.0 ***
Native American	0.43	0.12	
Minority-owned	26.62	12.40	
Nonminority female	15.33	17.41	88.1
DBE total	41.95	29.81	
<b>Commodities</b>			
African American	0.49	10.43	4.7 ***
Hispanic	0.00	0.98	0.0 ***
Asian/Pacific Islander	0.00	2.90	0.0 ***
Native American	0.07	0.39	19.1
Minority-owned	0.56	14.68	3.8 ***
Nonminority female	2.62	22.15	11.8 ***
DBE total	3.18	36.84	8.6 ***

Source and Notes: See Table 7.20.

## DBE Utilization and Disparity in JMAA Contracting Activity

In Concessions excluding car rentals, shown in Table 7.26, large and statistically significant disparities were observed for firms owned by Asians/Pacific Islanders, nonminority females, and DBEs as a group. Large, but not statistically significant, disparities were observed for firms owned by Hispanics, minorities as a group, and Native Americans.

**Table 7.26. Utilization, Availability, and Disparity Results for JMAA Concessions**

Category/DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Including Car Rental</b>			
African American	1.93	6.97	27.6
Hispanic	0.00	3.16	0.0 ***
Asian/Pacific Islander	0.00	6.22	0.0 ***
Native American	0.00	1.09	0.0 ***
Minority Total	1.93	17.43	11.0 ***
Nonminority female	0.00	12.26	0.0 ***
DBE total	1.93	29.70	6.5 ***
<b>Excluding Car Rental</b>			
African American	14.38	9.16	
Hispanic	0.00	4.15	0.0 ***
Asian/Pacific Islander	0.00	8.17	0.0 ***
Native American	0.00	1.43	0.0 ***
Minority Total	14.38	22.92	62.7
Nonminority female	0.00	16.12	0.0 ***
DBE total	14.38	39.05	36.8 ***

Source: Calculations from NERA Master Concessions Database and NERA Baseline Business Universe.

Notes: (1) “\*” indicates an adverse disparity that is statistically significant at the 10% level or better (90% confidence). “\*\*” indicates the disparity is significant at a 5% level or better (95% confidence). “\*\*\*” indicates significance at a 1% level or better (99% confidence). (2) An empty cell in the Disparity Ratio column indicates that no adverse disparity was observed for that category.

## **2. Detailed Industry Level Results**

Utilization, availability, and disparity results comparable to those presented above in Tables 7.20 through 7.26 have also been produced according to detailed Industry Groups. In the interest of space, these tables are presented below in Appendix C. Appendix C also includes tables showing Concessions utilization, availability, and disparity results by detailed Industries.

### **D. Current Availability versus Expected Availability**

Finally, Tables 7.27 and 7.28, for all contracting and federally-assisted contracting, respectively, provide a comparison between current levels of DBE availability for the JMAA and levels that we would expect to observe in a race- and gender-neutral market area. The latter, referred to as “expected availability,” is derived by dividing the current availability figures, as documented in Table 4.25, by the disparity ratios documented in column (3) of Table 5.12. If no disparity is present in the relevant market area, the disparity ratio will be equal to 100 and expected availability will be equivalent to current availability. In cases where adverse disparities are present in the relevant market area, the disparity ratio will be less than 100 and, consequently, expected availability will exceed current availability.

With the exception of firms owned by Asians/Pacific Islanders in Services and in Commodities, expected DBE availability in JMAA’s market area exceeds current DBE availability by substantial margins in all cases.

## DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.27. Current Availability and Expected Availability for JMAA Contracting (All Funds)**

Contracting Category/ DBE Type	Award Dollar Weights		Paid Dollar Weights	
	Current Availability (%)	Expected Availability (%)	Current Availability (%)	Expected Availability (%)
<b>CONSTRUCTION</b>				
African American	9.38	13.41	9.99	14.29
Hispanic	1.23	2.72	1.26	2.79
Asian/Pacific Islander	0.93	2.12	0.92	2.09
Native American	1.34	1.77	1.27	1.68
Minority	12.87	19.96	13.44	20.84
Nonminority female	10.90	23.62	10.66	23.10
DBE total	23.77	40.88	24.10	41.44
<b>AE-CRS</b>				
African American	10.62	15.19	10.62	15.19
Hispanic	1.66	3.67	1.66	3.67
Asian/Pacific Islander	0.58	1.32	0.59	1.34
Native American	0.47	0.62	0.48	0.63
Minority	13.33	20.67	13.34	20.69
Nonminority female	17.67	38.29	17.62	38.18
DBE total	31.00	53.31	30.97	53.26
<b>SERVICES</b>				
African American	11.26	31.04	11.02	30.38
Hispanic	1.00	1.39	1.01	1.41
Asian/Pacific Islander	0.22	0.14	0.24	0.15
Native American	0.11	0.17	0.12	0.19
Minority	12.59	26.82	12.39	26.40
Nonminority female	18.03	26.01	17.30	24.96
DBE total	30.62	52.09	29.69	50.51
<b>COMMODITIES</b>				
African American	9.66	26.63	9.67	26.66
Hispanic	0.84	1.17	0.84	1.17
Asian/Pacific Islander	2.69	1.74	2.69	1.74
Native American	0.35	0.54	0.35	0.54
Minority	13.54	28.85	13.54	28.85
Nonminority female	21.02	30.33	21.03	30.34
DBE total	34.56	58.80	34.57	58.81

Source: See Tables 4.25 and 5.12.

DBE Utilization and Disparity in JMAA Contracting Activity

**Table 7.28. Current Availability and Expected Availability for JMAA Contracting (Federally-Assisted Contracts)**

Contracting Category/ DBE Type	Award Dollar Weights		Paid Dollar Weights	
	Current Availability (%)	Expected Availability (%)	Current Availability (%)	Expected Availability (%)
<b>CONSTRUCTION</b>				
African American	6.96	10.00	7.79	11.20
Hispanic	1.12	2.49	1.15	2.57
Asian/Pacific Islander	0.99	2.25	1.07	2.42
Native American	1.48	1.95	1.22	1.61
Minority	10.56	16.44	11.23	17.50
Nonminority female	11.71	25.26	11.68	25.11
DBE total	22.27	38.30	22.92	39.40
<b>AE-CRS</b>				
African American	10.62	15.21	10.62	15.21
Hispanic	1.66	3.67	1.66	3.67
Asian/Pacific Islander	0.58	1.31	0.59	1.33
Native American	0.47	0.62	0.48	0.63
Minority	13.33	20.70	13.35	20.72
Nonminority female	17.63	38.25	17.62	38.14
DBE total	31.00	53.32	30.97	53.27
<b>SERVICES</b>				
African American	9.96	27.74	10.35	8.85
Hispanic	1.57	2.19	1.55	2.17
Asian/Pacific Islander	0.12	0.08	0.23	0.16
Native American	0.11	0.17	0.17	0.26
Minority	11.75	25.22	12.30	26.41
Nonminority female	17.12	24.77	16.37	23.74
DBE total	28.88	49.35	28.67	49.10
<b>COMMODITIES</b>				
African American	6.07	16.74	6.06	16.71
Hispanic	0.04	0.06	0.04	0.06
Asian/Pacific Islander	2.04	1.31	2.05	1.32
Native American	0.20	0.31	0.20	0.31
Minority	8.36	17.81	8.35	17.79
Nonminority female	16.23	23.42	16.25	23.45
DBE total	24.60	41.85	24.60	41.85

Source: See Tables 4.25 and 5.12.

## **VIII. Anecdotal Evidence of Disparities in JMAA's Market Area**

### **A. Introduction**

We have presented a variety of economic and statistical findings above that are consistent with, and indicative of, the presence of business discrimination against minorities and women in the geographic and product markets that are relevant to JMAA's Construction, AE-CRS, Services, and Commodities contracting activities. Chapters V and VI, in particular, have documented large and statistically significant adverse disparities in JMAA's relevant markets impacting minority and female entrepreneurs. In many instances, commercial loan denial rates are higher, the cost of credit is higher, business formation rates are lower, and business owner earnings are lower—even when comparisons are restricted to similarly situated businesses and business owners.

As a further check on these findings, we investigated anecdotal evidence of disparities in JMAA's market area. First, we conducted a large scale survey of business establishments in the market area—both DBE and non-DBE—and asked owners directly about their experiences, if any, with contemporary business-related acts of discrimination. We find that DBEs in JMAA's markets report suffering business-related discrimination in substantial numbers and with statistically significantly greater frequency than non-DBEs (see Tables 8.3 and 8.4). These differences tend to remain statistically significant when firm size and owner characteristics are held constant (see Tables 8.5 and 8.6). Additionally, we find that DBE firms that have been hired in the past by non-DBE prime contractors to work on public sector contracts with DBE goals often are not hired—or even solicited—by these prime contractors to work on projects without DBE goals (see Tables 8.8 and 8.9). The relative lack of DBE hiring and, even more tellingly, the relative lack of solicitation of DBEs in the absence of affirmative efforts by JMAA and other public entities in the JMAA market area, shows that business discrimination continues to fetter DBE business opportunities in JMAA's relevant markets. We conclude that the statistical evidence presented in this report is consistent with these anecdotal accounts of contemporary business discrimination.

The remainder of this Chapter is organized as follows. We first discuss the mail survey results in Section B. In Section B.1, we discuss the survey questionnaire, sample frame, and response rate. Section B.2 presents evidence on willingness of firms to do business with the public sector. Section B.3 presents the key findings from the DBE and non-DBE respondents concerning disparate treatment. Section B.4 presents the key findings concerning the impact of the regular business environment on DBEs' ability to conduct their businesses. Section B.5 presents key findings to our questions concerning whether prime contractors solicit or hire DBEs for work on public or private contracts without DBE goals. Section B.6 then examines whether DBEs and non-DBEs that responded to the mail surveys are representative of all DBEs and non-DBEs in the relevant markets. To do so, we surveyed a random sample of DBEs and non-DBEs that did not respond to our mail survey, and then compared their responses to key questions with those of our survey respondents.

Finally, Section C describes the results of the business experience group interviews. Responses are grouped under the headings of the most common cited barriers and issues facing businesses in JMAA's contracting market area.

## B. Business Experience Surveys

### 1. Survey Questionnaire, Sample, and Responses

The survey questionnaire asked whether and with what frequency firms had experienced discrimination in a wide variety of likely business dealings in the previous five years. The survey also inquired about the influence of specific aspects of the everyday business environment, such as bonding and insurance requirements, on each firm's ability to do business in JMAA's relevant markets. We also asked about the relative frequency with which firms that have been used as subcontractors, subconsultants, or suppliers by prime contractors on contracts *with* DBE goals have been hired to work, or even solicited to bid, on similar contracts *without* DBE goals. Finally, we posed questions about the characteristics of the firm, including firm age, owner's education, employment size, and revenue size, to facilitate comparisons of similarly situated firms.

The mail survey sample was stratified by industry and drawn directly from the Master DBE Directory and the Baseline Business Universe compiled for this study. Firms were sampled randomly within strata. DBE firms were oversampled to facilitate statistical comparisons with non-DBEs.<sup>312</sup> Of 9,286 businesses that received the questionnaire,<sup>313</sup> 496 (5.3 percent) provided usable responses.<sup>314</sup> The distribution of total responses according to the race and gender of the business owner, by major contracting category, appears in Table 8.1.

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<sup>312</sup> See Chapter III for a discussion of how the product and geographic markets were defined. See Chapter IV for a discussion of how the Master DBE Directory and the Baseline Business Universe were assembled.

<sup>313</sup> These figures exclude surveys that were returned undelivered or were otherwise undeliverable.

<sup>314</sup> The total number of valid responses to any particular survey question, however, was sometimes lower than this due to item non-response.

**Table 8.1. Race, Gender and Contracting Category of Mail Survey Respondents**

Group	Construction	AE-CRS	Services	Commodities	Total
African American	39	8	74	24	145
Hispanic	2	0	3	0	5
Asian/Pacific Islander	4	1	2	0	7
Native American	1	3	0	0	4
Minorities with unknown Race/Ethnicity	0	0	0	0	0
Nonminority Women	35	9	72	22	138
DBE Total	81	21	151	46	299
Nonminority Men	70	35	60	32	197
Total	151	56	211	78	496

Source: NERA JMAA mail surveys.

## 2. Willingness of Firms to Contract with the Public Sector

The probative value of anecdotal evidence of discrimination increases when it comes from active businesses in the relevant geographic and procurement markets. The value of such evidence increases further when it comes from firms that have actually worked or attempted to work for the public sector within those markets. Such is the present case.

As shown below in Table 8.2, there is an observable link between the firms responding to our mail survey and the public sector of the Mississippi area economy. All respondents operate establishments in the relevant geographic and product markets. Moreover, significant numbers of survey respondents have worked or attempted to do work for JMAA or other public entities in the market area in the last five years. This is observed for virtually all types of DBEs and non-DBEs in both construction and consulting. Overall, more than 50 percent of non-DBEs and almost 60 percent of DBEs have worked or attempted to work for JMAA or some other public entity in the market area in the previous five years.

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**Table 8.2. Survey Respondents Indicating They Had Worked or Attempted to Work for Public Sector Agencies in the Last Five Years**

Worked or Attempted to Work, Last 5 Years	African American	Hispanic	Asian/Pacific Islander	Native American	Minority Total	Non-minority Female	DBE Total	Non-minority Male
<b>ALL INDUSTRIES</b>								
With JMAA	34.7%	60.0%	14.3%	25.0%	34.4%	31.2%	32.9%	38.3%
	(144)	(5)	(7)	(4)	(160)	(138)	(298)	(196)
With Other Public Entity in Market Area	68.8%	80.0%	57.1%	75.0%	68.8%	61.8%	65.5%	76.2%
	(141)	(5)	(7)	(4)	(157)	(136)	(293)	(193)
With any Public Entity in Market Area	70.4%	100.0%	57.1%	75.0%	70.9%	67.2%	69.2%	77.3%
	(142)	(5)	(7)	(4)	(158)	(137)	(295)	(194)
<b>CONSTRUCTION</b>								
With JMAA	34.9%	50.0%	0.0%	0.0%	32.7%	24.2%	29.3%	24.2%
	(43)	(2)	(3)	(1)	(49)	(33)	(82)	(66)
With Other Public Entity in Market Area	74.4%	100.0%	66.7%	100.0%	75.5%	68.8%	72.8%	76.9%
	(43)	(2)	(3)	(1)	(49)	(32)	(81)	(65)
With any Public Entity in Market Area	74.4%	100.0%	66.7%	100.0%	75.5%	75.8%	75.6%	77.3%
	(43)	(2)	(3)	(1)	(49)	(33)	(82)	(66)
<b>AE-CRS</b>								
With JMAA	55.6%	-	0.0%	0.0%	41.7%	33.3%	38.1%	38.5%
	(9)	(0)	(1)	(2)	(12)	(9)	(21)	(39)
With Other Public Entity in Market Area	88.9%	-	100.0%	50.0%	83.3%	88.9%	85.7%	82.1%
	(9)	(0)	(1)	(2)	(12)	(9)	(21)	(39)
With any Public Entity in Market Area	88.9%	-	100.0%	50.0%	83.3%	88.9%	85.7%	82.1%
	(9)	(0)	(1)	(2)	(12)	(9)	(21)	(39)
<b>SERVICES</b>								
With JMAA	28.9%	100.0%	33.3%	100.0%	30.9%	31.3%	31.0%	45.3%
	(76)	(1)	(3)	(1)	(81)	(64)	(145)	(53)
With Other Public Entity in Market Area	64.4%	0.0%	33.3%	100.0%	62.8%	55.6%	59.6%	71.2%
	(73)	(1)	(3)	(1)	(78)	(63)	(141)	(52)
With any Public Entity in Market Area	67.6%	100.0%	33.3%	100.0%	67.1%	60.3%	64.1%	75.0%
	(74)	(1)	(3)	(1)	(79)	(63)	(142)	(52)
<b>COMMODITIES</b>								
With JMAA	50.0%	50.0%	-	-	50.0%	37.5%	42.0%	52.6%
	(16)	(2)	(0)	(0)	(18)	(32)	(50)	(38)
With Other Public Entity in Market Area	62.5%	100.0%	-	-	66.7%	59.4%	62.0%	75.7%
	(16)	(2)	(0)	(0)	(18)	(32)	(50)	(37)
With any Public Entity in Market Area	62.5%	100.0%	-	-	66.7%	65.6%	66.0%	75.7%
	(16)	(2)	(0)	(0)	(18)	(32)	(50)	(37)

Source: NERA JMAA mail surveys. Note: Total number of valid responses in parentheses.

### 3. Experiences of Disparate Treatment in Business Dealings

The survey included questions about instances of disparate treatment based on race and/or gender experienced in various business dealings during the past five years. As shown in the last row of Table 8.3, almost 46 percent of DBE firms said they had experienced at least one instance of disparate treatment in one or more areas of business dealings identified on the survey. Reports of disparate treatment were substantially and statistically significantly higher for minorities than for nonminorities, casting doubt on claims of widespread “reverse discrimination.” On average, reports were highest among African Americans, with an overall rate of 60 percent. The average disparate treatment incidence rate for Hispanics, Asians/Pacific Islanders, and Native Americans was approximately 50 percent. For nonminority women, the disparate treatment incidence rate was 30 percent. By comparison, the reported rate for nonminority males was 26 percent.<sup>315</sup>

The balance of Table 8.3 shows results for each of 14 distinct types of disparate treatment that we asked about in the survey. In all but one category the ratio of the reported amount of disparate treatment between DBEs and non-DBEs is large. In all but two categories this difference is statistically significant as well. In all but one category the incidence of disparate treatment was at least 70 percent greater for DBEs than for non-DBEs in all cases. In many categories it was two, three, four, and even six times greater than this. In applying for commercial loans, for example, DBEs reported disparate treatment six times more frequently than nonminority males. In applying for surety bonds it was almost four times more frequent. In applying for commercial insurance it was more than four times more frequent. In obtaining price quotes from suppliers or subcontractors it was more than six times more frequent. In working or attempting to work on private sector subcontracts it was more than four times more frequent. In functioning without hindrance or harassment on the work site it was more than four times more frequent.

Evidence of the impact of public sector DBE programs is seen in that, although they are still large in an absolute sense, two of the smallest relative differences between DBEs and non-DBEs appear in the categories of working or attempting to work on public sector prime contracts and public sector subcontracts.

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<sup>315</sup> Similar patterns were observed when the results were disaggregated by industry sector.

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**Table 8.3. Firms Indicating They Had Been Treated Less Favorably Due to Race and/or Gender While Participating in Business Dealings**

Business Dealings	African American	Hispanic	Asian/Pacific	Native American	Minority Total	Non-minority Female	DBE Total	Non-minority Male
Applying for commercial loans	<b>51.7%</b> <b>(89)</b>	<b>50.0%</b> <b>(4)</b>	0.0% (3)	0.0% (2)	<b>49.0%</b> <b>(98)</b>	7.4% (81)	<b>30.2%</b> <b>(179)</b>	<b>7.0%</b> <b>(128)</b>
Applying for surety bonds	<b>24.0%</b> <b>(75)</b>	0.0% (2)	0.0% (4)	0.0% (3)	<b>21.4%</b> <b>(84)</b>	5.1% (59)	<b>14.7%</b> <b>(143)</b>	<b>3.6%</b> <b>(111)</b>
Applying for commercial or professional insurance	<b>15.0%</b> <b>(100)</b>	0.0% (3)	0.0% (4)	25.0% (4)	<b>14.4%</b> <b>(111)</b>	3.0% (99)	<b>9.0%</b> <b>(210)</b>	<b>2.8%</b> <b>(145)</b>
Hiring workers from union hiring halls	1.8% (56)	0.0% (3)	0.0% (2)	- (0)	1.6% (61)	0.0% (35)	1.0% (96)	1.5% (66)
Obtaining price quotes from suppliers or subcontractors	<b>31.8%</b> <b>(85)</b>	0.0% (3)	0.0% (5)	<b>50.0%</b> <b>(4)</b>	<b>29.9%</b> <b>(97)</b>	7.0% (86)	<b>19.1%</b> <b>(183)</b>	<b>3.1%</b> <b>(130)</b>
Working or attempting to obtain work on public sector prime contracts	<b>46.9%</b> <b>(96)</b>	25.0% (4)	40.0% (5)	33.3% (3)	<b>45.4%</b> <b>(108)</b>	16.2% (74)	<b>33.5%</b> <b>(182)</b>	<b>18.0%</b> <b>(128)</b>
Working or attempting to obtain work on public sector subcontracts	<b>43.9%</b> <b>(98)</b>	25.0% (4)	25.0% (4)	<b>50.0%</b> <b>(4)</b>	<b>42.7%</b> <b>(110)</b>	12.8% (78)	<b>30.3%</b> <b>(188)</b>	<b>14.0%</b> <b>(129)</b>
Working or attempting to obtain work on private sector prime contracts	<b>41.4%</b> <b>(99)</b>	25.0% (4)	<b>40.0%</b> <b>(5)</b>	25.0% (4)	<b>40.2%</b> <b>(112)</b>	10.8% (83)	<b>27.7%</b> <b>(195)</b>	<b>8.3%</b> <b>(133)</b>
Working or attempting to obtain work on private sector subcontracts	<b>41.2%</b> <b>(102)</b>	25.0% (4)	25.0% (4)	0.0% (3)	<b>38.9%</b> <b>(113)</b>	8.6% (81)	<b>26.3%</b> <b>(194)</b>	<b>6.2%</b> <b>(130)</b>
Receiving timely payment for work performed	<b>36.8%</b> <b>(106)</b>	<b>50.0%</b> <b>(4)</b>	20.0% (5)	<b>50.0%</b> <b>(4)</b>	<b>37.0%</b> <b>(119)</b>	20.2% (99)	<b>29.4%</b> <b>(218)</b>	<b>14.3%</b> <b>(147)</b>
Functioning without hindrance or harassment on the work site	<b>12.2%</b> <b>(90)</b>	<b>33.3%</b> <b>(3)</b>	20.0% (5)	0.0% (4)	<b>12.7%</b> <b>(102)</b>	<b>11.8%</b> <b>(85)</b>	<b>12.3%</b> <b>(187)</b>	<b>3.0%</b> <b>(134)</b>
Joining or dealing with construction trade associations	4.3% (69)	0.0% (2)	0.0% (3)	<b>33.3%</b> <b>(3)</b>	5.2% (77)	4.1% (74)	4.6% (151)	2.6% (115)
Having to do inappropriate or extra work not required of comparable non-DBEs	<b>21.4%</b> <b>(84)</b>	25.0% (4)	25.0% (4)	<b>50.0%</b> <b>(4)</b>	<b>22.9%</b> <b>(96)</b>	9.4% (85)	<b>16.6%</b> <b>(181)</b>	<b>5.1%</b> <b>(136)</b>
Double standards not required of comparable non-DBEs	<b>23.1%</b> <b>(91)</b>	0.0% (3)	20.0% (5)	<b>50.0%</b> <b>(4)</b>	<b>23.3%</b> <b>(103)</b>	9.4% (85)	<b>17.0%</b> <b>(188)</b>	<b>7.3%</b> <b>(137)</b>
In any one of the business dealings listed above	<b>60.0%</b> <b>(125)</b>	50.0% (4)	50.0% (6)	50.0% (4)	<b>59.0%</b> <b>(139)</b>	30.3% (119)	<b>45.7%</b> <b>(258)</b>	<b>26.3%</b> <b>(160)</b>

Source: See Table 8.2.

Notes: Total number of valid responses in parentheses. Figures in **boldface** type are statistically significantly different from non-DBEs using a conventional two-tailed Fisher's Exact Test and within a 95% or better confidence interval. Figures in **boldface italicized** type are significant within a 90% confidence interval.

Table 8.4 represents the same disparate treatment information as in Table 8.3, but with the frequency percentages replaced by relative rankings. That is, the 14 kinds of disparate treatment are ranked by each group according to the frequency with which disparate treatment was reported, with “1” representing the most frequent and “14” representing the least frequent.<sup>316</sup> The most frequently reported problem overall for DBEs—as opposed to the one with the most relative difference from non-DBEs—was working or attempting to work on public sector prime contracts. The next five most frequently reported, in descending order of frequency, were working or attempting to work on public sector subcontracts, applying for commercial loans, and receiving timely payment for work performed, and working or attempting to work on private sector prime contracts.

Some courts and other observers have asserted that findings such as those in Table 8.3 and 8.4 tell us nothing about discrimination against DBEs since, even though they are current and come directly from the businesses reporting disparate treatment, even though they are restricted to the relevant geographic and product markets, even though they are disaggregated by contracting category and by race and gender, they still do not compare firms of similar size, qualifications, or experience. We have argued elsewhere against such flawed logic (and economics) since size, qualifications, and experience are *precisely* the factors that are adversely impacted by discrimination (Wainwright and Holt, 2010, 65-67; Wainwright, 2000, 86-87). Nevertheless, if disparities are still observed even when such “capacity” factors are held constant, the case becomes even more compelling. The results reported below in Table 8.5 show that even when levels of size, qualifications, and experience are held constant across firms, measures of disparate treatment of firms owned by African Americans, Hispanics, Asians/Pacific Islanders, nonminority women, minorities as a group, and DBEs as a group, are still large, adverse, and statistically significant.

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<sup>316</sup> In the case of ties, not all 14 ranks will be present.

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**Table 8.4. Firms Indicating They Had Been Treated Less Favorably Due to Race and/or Gender While Participating in Business Dealings (Rankings)**

<b>Business Dealings</b>	<b>African American</b>	<b>Hispanic</b>	<b>Asian/ Pacific Islander</b>	<b>Native American</b>	<b>Minority Total</b>	<b>Non-minority Female</b>	<b>DBE Total</b>
Applying for commercial loans	1	1	4	4	1	8	3
Applying for surety bonds	8	4	4	4	10	10	10
Applying for commercial or professional insurance	11	4	4	3	11	12	12
Hiring workers from union hiring halls	14	4	4	5	14	13	14
Obtaining price quotes from suppliers or subs	7	4	4	1	7	9	7
Working or attempting to obtain work on public sector prime contracts	2	3	1	2	2	2	1
Working or attempting to obtain work on public sector subcontracts	3	3	2	1	3	3	2
Working or attempting to obtain work on private sector prime contracts	4	3	1	3	4	5	5
Working or attempting to obtain work on private sector subcontracts	5	3	2	4	5	7	6
Receiving timely payment for work performed	6	1	3	1	6	1	4
Functioning without hindrance or harassment on the work site	12	2	3	4	12	4	11
Joining or dealing with trade associations	13	4	4	2	13	11	13
Having to do extra work not required of others	10	3	2	1	9	6	9
Having to meet quality or performance standards not required of others	9	4	3	1	8	6	8

Source: See Table 8.2.

In Table 8.5, we report the results from a series of Probit regressions using the mail survey data on disparate treatment.<sup>317</sup> As indicated earlier, the survey questionnaire collected data related to each firm's size, qualifications, and experience. The reported estimates from these models can be interpreted as changes or differences in the probability of disparate treatment conditional on the control variables. The estimates in the table show large differences in disparate treatment probabilities between DBEs and non-DBEs. In column (1) of Table 8.5 (in which the regression model contains only DBE status and contracting category indicators), the estimated coefficient of 0.183 on the DBE indicator indicates that the likelihood of experiencing disparate treatment for DBE firms is 18.3 percentage points higher than that for non-DBE firms.<sup>318</sup> This difference is statistically significant within a 99 percent confidence interval or better. Column (2) of Table 8.5 includes additional explanatory variables to hold constant differences in the characteristics of firms that may vary by race or gender, including the owner's education, the age of the firm, and the size of the firm measured by employment and by sales. Even after controlling for these differences, however, DBE firms remain 17.9 percentage points more likely than non-DBE firms to experience disparate treatment. This difference is also statistically significant within a 99 percent confidence interval. Firm size and other characteristics account for little of the disparate treatment reported by DBEs in the JMAA market area.

The exercise is repeated in columns (3) and (4). The only difference from the earlier regressions is that the DBE indicator is now separated into two components—one for minority-owned firms and one for nonminority-female owned firms. The results in column (3) indicate that minority-owned firms in JMAA's market area are 30.9 percentage points more likely to experience disparate treatment than non-DBE firms. When controls are added in column (4), this difference actually increases slightly to 31.7 percentage points, indicating that disparate treatment is occurring even when accounting for other "capacity"-type factors. Nonminority female-owned firms are 4.2 and 5.2 percentage points more likely to experience disparate treatment, respectively; however, these differences are not statistically significant.

The exercise is repeated again in columns (5) and (6) with separate indicators for each type of DBE. The results for nonminority females are nearly identical to those in columns (3) and (4). For African American-owned firms, the differential is 32.1 percentage points in column (5), rising to 33.3 percentage points once controls are added. For Hispanic-owned firms, the differentials are 24.5 and 6.5 percentage points, respectively. For Asian/Pacific Islander-owned firms, the differentials are 22.2 and 31.6 percentage points, respectively. For Native American-owned firms, the differentials are 24.6 and 15.0 percentage points, respectively. Due to small sample sizes, however, the differences for firms owned by Hispanics, Asians/Pacific Islanders, and Native Americans are not statistically significant.

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<sup>317</sup> See Chapter V for a description of Probit regression.

<sup>318</sup> This estimate largely replicates the raw difference in disparate treatment rates between DBE and non-DBE firms reported in the last row of Table 8.3. The raw differential observed there ( $45.7\% - 26.3\% = 19.4\%$ ) differs slightly from the 16.6% differential reported here since the regression specification also controls for industry category.

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**Table 8.5. Prevalence of Disparate Treatment Facing DBEs**

	(1)	(2)	(3)	(4)	(5)	(6)
DBE	0.183 (3.60)	0.179 (3.12)				
Minority			0.309 (5.17)	0.317 (4.60)		
Nonminority Female			0.042 (0.66)	0.052 (0.75)	0.043 (0.68)	0.054 (0.78)
African American					0.321 (5.16)	0.333 (4.65)
Hispanic					0.245 (0.96)	0.065 (0.21)
Asian/Pacific Islander					0.222 (1.08)	0.316 (1.47)
Native American					0.246 (0.97)	0.150 (0.49)
Owner's Education (3 indicator variables)	No	Yes	No	Yes	No	Yes
Firm Age (4 indicators)	No	Yes	No	Yes	No	Yes
Employment size bracket (6 indicators)	No	Yes	No	Yes	No	Yes
Sales/revenue size bracket (4 indicators)	No	Yes	No	Yes	No	Yes
Industry category (3 indicators)	Yes	Yes	Yes	Yes	Yes	Yes
N	418.00	388.00	418.00	388.00	418.00	388.00
Pseudo R <sup>2</sup>	0.04	0.06	0.08	0.09	0.08	0.10
Chi <sup>2</sup>	23.94	33.29	42.52	48.37	42.97	49.57
Log likelihood	(266.17)	(241.28)	(256.88)	(233.74)	(256.66)	(233.14)

Source: See Table 8.2.

Notes: Reported estimates are derivatives from Probit models, t-statistics are in parentheses. A t-statistic of 2.58 (1.96) (1.64) or larger indicates that the result is significant within a 99 (95) (90) percent confidence interval.

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**Table 8.6. Prevalence of Disparate Treatment Facing DBEs, by Type of Business Dealing**

Business Dealings	African American	Hispanic	Asian/ Pacific Islander	Native American	Minority Total	Non-minority Female	DBE Total
Applying for commercial loans	<b>38.7%</b> <b>(5.23)</b>	21.2% (0.91)	0.0% (0.00)	0.0% (0.00)	<b>34.6%</b> <b>(5.02)</b>	-2.6% (-0.43)	<b>16.8%</b> <b>(3.30)</b>
Applying for surety bonds	<b>30.5%</b> <b>(3.70)</b>	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	<b>25.7%</b> <b>(3.46)</b>	4.1% (0.65)	<b>13.4%</b> <b>(2.64)</b>
Applying for commercial or professional insurance	<b>4.8%</b> <b>(3.47)</b>	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	<b>3.9%</b> <b>(3.23)</b>	-0.1% (-0.23)	<b>1.5%</b> <b>(2.16)</b>
Hiring workers from union hiring halls	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)
Obtaining price quotes from suppliers or subcontractors	<b>34.4%</b> <b>(4.28)</b>	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	<b>30.0%</b> <b>(4.09)</b>	6.7% (1.06)	<b>14.5%</b> <b>(3.08)</b>
Working or attempting to obtain work on public sector prime contracts	<b>33.3%</b> <b>(4.13)</b>	12.5% (0.46)	32.2% (1.31)	0.0% (0.00)	<b>30.1%</b> <b>(3.97)</b>	0.9% (0.11)	<b>17.0%</b> <b>(2.73)</b>
Working or attempting to obtain work on public sector subcontracts	<b>37.0%</b> <b>(4.75)</b>	17.2% (0.63)	18.6% (0.74)	29.7% (1.09)	<b>33.8%</b> <b>(4.64)</b>	5.0% (0.64)	<b>19.9%</b> <b>(3.45)</b>
Working or attempting to obtain work on private sector prime contract	<b>36.5%</b> <b>(4.85)</b>	25.0% (1.01)	<b>46.6%</b> <b>(2.11)</b>	0.0% (0.00)	<b>33.0%</b> <b>(4.78)</b>	2.5% (0.36)	<b>17.9%</b> <b>(3.42)</b>
Working or attempting to obtain work on private sector subcontracts	<b>42.1%</b> <b>(5.46)</b>	32.9% (1.29)	27.5% (1.15)	0.0% (0.00)	<b>37.1%</b> <b>(5.23)</b>	6.5% (0.93)	<b>20.0%</b> <b>(3.93)</b>
Receiving timely payment for work performed	<b>21.6%</b> <b>(3.16)</b>	27.5% (1.00)	6.1% (0.28)	31.1% (1.09)	<b>20.8%</b> <b>(3.21)</b>	5.4% (0.84)	<b>12.3%</b> <b>(2.39)</b>
Functioning without hindrance or harassment on the work site	<b>13.7%</b> <b>(2.61)</b>	0.0% (0.00)	22.8% (1.29)	0.0% (0.00)	<b>12.4%</b> <b>(2.59)</b>	<b>11.8%</b> <b>(2.34)</b>	<b>6.9%</b> <b>(2.65)</b>
Joining or dealing with construction trade associations	2.2% (1.27)	0.0% (0.00)	0.0% (0.00)	0.0% (0.00)	1.6% (1.22)	3.5% (1.56)	1.3% (1.55)
Having to do inappropriate or extra work not required of comparable non-DBEs	<b>24.8%</b> <b>(3.79)</b>	<b>46.0%</b> <b>(1.94)</b>	14.1% (0.82)	40.6% (1.59)	<b>23.7%</b> <b>(3.94)</b>	<b>10.0%</b> <b>(1.80)</b>	<b>12.9%</b> <b>(3.32)</b>
Having to meet quality, inspection, or performance standards not required of comparable non-DBEs	<b>25.0%</b> <b>(3.81)</b>	0.0% (0.00)	19.6% (1.11)	41.1% (1.51)	<b>23.1%</b> <b>(3.82)</b>	8.6% (1.48)	<b>13.0%</b> <b>(3.13)</b>
In any one of the business dealings listed above	<b>33.3%</b> <b>(4.65)</b>	6.5% (0.21)	31.6% (1.47)	15.0% (0.49)	<b>31.7%</b> <b>(4.60)</b>	5.2% (0.75)	<b>17.9%</b> <b>(3.12)</b>

Source: See Table 8.2.

Notes: Reported estimates are derivatives from Probit models with specification such as in Table 8.5, column (2). The t-statistics are in parentheses. A t-statistic of 1.96 (1.64) or larger indicates that the result is significant within a 95 (90) percent confidence interval. Results with t-statistics of 1.96 or higher are **boldfaced**. Results with t-statistics of 1.64 or higher are **boldfaced italicized**.

The regression models reported in Table 8.5 used as their dependent variable an indicator of whether or not a survey respondent reported having been treated less favorably in *any* of the 14 different types of business dealings described in the first column of Table 8.3.<sup>319</sup> We re-estimated the regression model reported in Column (2) of Table 8.5 separately using as the dependent variable, in turn, each of the 14 types of business dealings and report those results in Table 8.6. As Table 8.6 shows, African American-owned firms, in particular, experience a wide variety of disparate treatment compared to non-DBEs. In 12 of 14 categories, the differences for African American-owned firms are both large and statistically significant. For DBEs as a group, it is true in 12 of 14 cases as well.

#### **4. Impact of Current Business Environment on Ability to Win Contracts**

The survey asked questions about some common features of the business environment to determine which factors were perceived by DBEs as serious impediments to obtaining contracts.

As Table 8.7 makes clear, substantial percentages of both DBEs and non-DBEs report that certain factors, such as “Late Notice of Bid/Proposal Deadlines,” “Obtaining working capital,” “Bonding requirements,” and “Large project sizes,” make it harder or impossible for their firms to obtain contracts. Among non-DBEs, for example, 40 percent reported that late notice of bid/proposal deadlines made it harder or impossible for them to win contracts, 19 percent reported that obtaining working capital had this effect, 21 percent reported that bonding requirements had this effect, and 17 percent reported that large project sizes had this effect. The figures for DBEs in these four categories, however, at 50, 43, 40, and 37 percent, respectively, are substantially higher than those for non-DBEs. Indeed, as Table 8.7 shows, DBEs reported significantly more difficulty than non-DBEs in all nine factors about which they were polled.

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<sup>319</sup> Our disparate treatment question also allowed respondents to indicate the quantity of disparate treatment experienced (never, 1-5 times, 6-20 times, more than 20 times). Although not reported here, we also ran regressions using a dependent variable measuring high frequency of disparate treatment (6 or more times) during the prior five years. Results were more limited due to smaller sample sizes but were qualitatively similar to those obtained in Tables 8.5 and 8.6.

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**Table 8.7. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts—Sample Differences**

Business Environment	African American	Hispanic	Asian/ Pacific Islander	Native American	Minority Total	Non-minority Female	DBE Total	Non-DBEs
Bonding Requirements	<b>48.1%</b> <b>(77)</b>	0.0% (2)	50.0% (2)	0.0% (2)	<b>45.8%</b> <b>(83)</b>	29.4% (51)	<b>39.6%</b> <b>(134)</b>	<b>20.6%</b> <b>(97)</b>
Insurance Requirements	21.3% (89)	0.0% (4)	0.0% (4)	33.3% (3)	20.0% (100)	18.2% (77)	19.2% (177)	14.7% (136)
Previous Experience Requirements	<b>22.8%</b> <b>(101)</b>	0.0% (4)	20.0% (5)	<b>50.0%</b> <b>(2)</b>	<b>22.3%</b> <b>(112)</b>	10.3% (78)	<b>17.4%</b> <b>(190)</b>	<b>4.8%</b> <b>(146)</b>
Cost of Bidding or Proposing	<b>32.2%</b> <b>(87)</b>	25.0% (4)	40.0% (5)	50.0% (2)	<b>32.7%</b> <b>(98)</b>	19.5% (77)	<b>26.9%</b> <b>(175)</b>	<b>16.3%</b> <b>(135)</b>
Large Project Sizes	<b>39.8%</b> <b>(83)</b>	25.0% (4)	<b>75.0%</b> <b>(4)</b>	<b>100.0%</b> <b>(2)</b>	<b>41.9%</b> <b>(93)</b>	<b>30.1%</b> <b>(73)</b>	<b>36.7%</b> <b>(166)</b>	<b>17.3%</b> <b>(133)</b>
Price of Supplies or Materials	<b>31.5%</b> <b>(89)</b>	25.0% (4)	20.0% (5)	0.0% (3)	<b>29.7%</b> <b>(101)</b>	25.3% (75)	<b>27.8%</b> <b>(176)</b>	<b>18.3%</b> <b>(131)</b>
Obtaining Working Capital	<b>51.5%</b> <b>(97)</b>	50.0% (4)	<b>80.0%</b> <b>(5)</b>	33.3% (3)	<b>52.3%</b> <b>(109)</b>	28.8% (73)	<b>42.9%</b> <b>(182)</b>	<b>19.2%</b> <b>(130)</b>
Late Notice of Bid/Proposal Deadlines	45.3% (86)	0.0% (4)	50.0% (4)	<b>100.0%</b> <b>(3)</b>	45.4% (97)	<b>56.3%</b> <b>(71)</b>	<b>50.0%</b> <b>(168)</b>	<b>39.8%</b> <b>(128)</b>
Prior Dealings with Owner	<b>14.4%</b> <b>(90)</b>	0.0% (3)	<b>20.0%</b> <b>(5)</b>	0.0% (2)	<b>14.0%</b> <b>(100)</b>	<b>6.1%</b> <b>(82)</b>	<b>10.4%</b> <b>(182)</b>	<b>0.7%</b> <b>(147)</b>

Source: See Table 8.2.

Notes: Total number of valid responses in parentheses. Figures in **boldface** type are adverse and statistically significantly different from non-DBEs using a conventional two-tailed Fisher's Exact Test and within a 95% or better confidence interval. Figures in **boldface italicized** type are adverse and significant within a 90% confidence interval.

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To control for firm and owner characteristics, we used a regression technique known as ordered Probit.<sup>320</sup> Ordered Probit regression is used when the dependent variable is discrete and ordinal (and hence can be ranked). We use ordered Probit to model the ordinal ranking—helps me (1), no effect (2), makes it harder (3), and makes it impossible (4)—of the aspect of procurement under consideration. The firm characteristics used as control variables consist of the age of the firm, the number of employees, the size of revenues, the education level of the primary owner of the firm, and the major industry group. To report results from ordered Probit analysis, we use a “+” to indicate that DBEs had more difficulty than non-DBEs with similar firm characteristics, and a “-” to indicate that M/WBEs had less difficulty than non-DBEs with similar firm characteristics.

Table 8.8 reports the sign and statistical significance from the ordered Probit analysis. We find that when observable firm characteristics are controlled for, eight of the nine of the factors we inquired about prove to be greater difficulties for DBEs than for non-DBEs (as indicated by the “+” sign), even when “capacity”-type factors such as employment size, revenue size, years in business, and owner education are held constant. In particular, the disparities for cost of bidding or proposing, large project sizes, obtaining working capital, late notice of bid/proposal deadlines, and prior dealings with owners, are all statistically significant with respect to non-DBEs.

**Table 8.8. Firms Indicating that Specific Factors in the Business Environment Make It Harder or Impossible to Obtain Contracts, Regression Results**

Business Environment	DBEs
Bonding Requirements	+
Insurance Requirements	-
Previous Experience Requirements	+
Cost of Bidding or Proposing	+*
Large Project Sizes	+*
Price of Supplies or Materials	+
Obtaining Working Capital	+†
Late Notice of Bid/Proposal Deadlines	+*
Prior Dealings with Owner	+*

Source: See Table 8.2.

Notes: A plus (+) indicates that a group is more likely than non-DBEs to report difficulty with business environment factors. A minus (-) indicates that a group is less likely than non-DBEs to experience difficulty. An asterisk (\*) indicates that the disparity is statistically significant within a 95% or better confidence interval. A dagger (†) indicates that the disparity is statistically significant within a 90% or better confidence interval.

<sup>320</sup> For a textbook discussion of ordered Probit, see, for example, Greene (1997).

## 5. Solicitation and Use of DBEs on Public and Private Projects Without Affirmative Action Goals

Our second to last survey question asked, “How often do prime contractors who use your firm as a subcontractor on public-sector projects with requirements for minority, women and/or disadvantaged businesses also *hire* your firm on projects (public or private) *without* such goals or requirements?” As Table 8.9 shows, 75 percent of African American-owned firms, 67 percent of Hispanic-owned firms, 33 percent of Native American-owned firms, and 59 percent of nonminority female-owned firms responded that this seldom or never occurs. Similar results were observed by major contracting category as well.

At least one court has held that the failure of prime contractors to even *solicit* qualified minority- and women-owned firms is a “market failure” that serves to establish a government’s compelling interest in remedying that failure.<sup>321</sup> Among the evidence relied upon for this holding was a NERA survey similar to the current one in which approximately 50 percent of the respondents reported that they were seldom or never solicited for non-goals work.<sup>322</sup>

**Table 8.9. Percent of DBEs Indicating that Prime Contractors Who Use Them as Subcontractors on Projects with Goals Seldom or Never Hire Them on Projects without Such Goals**

DBE Group	All Industries	Construction	Consulting	Services	Commodities
African American	75.0% (108)	80.5% (41)	66.7% (9)	68.0% (50)	100.0% (8)
Hispanic	66.7% (3)	100.0% (2)	- (0)	0.0% (1)	- (0)
Asian/Pacific Islander	0.0% (2)	0.0% (2)	- (0)	- (0)	- (0)
Native American	33.3% (3)	- (0)	50.0% (2)	0.0% (1)	- (0)
Minority Total	72.4% (116)	77.8% (45)	63.6% (11)	65.4% (52)	100.0% (8)
Nonminority Female	58.7% (75)	43.5% (23)	55.6% (9)	60.7% (28)	80.0% (15)
DBE Total	67.0% (191)	66.2% (68)	60.0% (20)	63.8% (80)	87.0% (23)

Source and Note: See Table 8.2.

<sup>321</sup> *Builders Association of Greater Chicago v. Authority of Chicago*, 298 F.Supp.2d 725, 737 (N.D. Ill. 2003).

<sup>322</sup> *Id.*

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Our final survey question therefore asked “How often do prime contractors who use your firm as a subcontractor on public-sector projects with requirements for minority, women and/or disadvantaged businesses *solicit* your firm on projects (public or private) *without* such goals or requirements?” Responses to this question are tabulated in Table 8.10, which shows the same pattern as in Table 8.9. In Table 8.10, 75 percent of African American-owned firms, 75 percent of Hispanic-owned firms, 33 percent of Native American-owned firms, and 63 percent of nonminority female-owned firms responded that this seldom or never occurs. Similar results were also observed in each major contracting category.

**Table 8.10. Percent of DBEs Indicating that Prime Contractors Who Use Them as Subcontractors on Projects with Goals Seldom or Never *Solicit* Them on Projects without Such Goals**

DBE Group	All Industries	Construction	Consulting	Services	Commodities
African American	74.5% (102)	78.4% (37)	66.7% (9)	69.4% (49)	100.0% (7)
Hispanic	75.0% (4)	100.0% (2)	- (0)	100.0% (1)	0.0% (1)
Asian/Pacific Islander	0.0% (2)	0.0% (2)	- (0)	- (0)	- (0)
Native American	33.3% (3)	- (0)	50.0% (2)	0.0% (1)	- (0)
Minority Total	72.1% (111)	75.6% (41)	63.6% (11)	68.6% (51)	87.5% (8)
Nonminority Female	63.2% (76)	45.8% (24)	55.6% (9)	72.0% (25)	77.8% (18)
DBE Total	68.4% (187)	64.6% (65)	60.0% (20)	69.7% (76)	80.8% (26)

Source and Note: See Table 8.2.

## 6. Impact of Survey Non-Response

Since the mail survey was voluntary it is important to account for the fact that a majority of those who received it did not respond. As a check on the usefulness of the information obtained from our mail survey respondents, we conducted telephone surveys of 1,250 randomly selected M/WBEs and non-M/WBEs that did not respond to our mail survey. The purpose of this “non-response” survey is to test whether their answers to key survey questions were different from the answers of respondents in ways that would call into question the relevance of the information obtained from our mail survey respondents.

We obtained responses from 460 firms, for a raw response rate of 36.8 percent. After removing duplicate records, records where the firm was no longer in business, and records where the telephone number was disconnected, the effective response rate increased to 50.7 percent. Of the firms with which we completed interviews, 35.4 percent were minority-owned, compared with a rate of 32.5 percent in the mail survey. The percentage of women-owned firms was 43.4 percent, compared to 41.3 percent in the mail survey. Neither of these differences is statistically significant.

In addition to determining minority-owned and women-owned status, we selected three questions from the mail survey to pose to non-respondents. The first question asked whether large project sizes helped or harmed the firm's ability to obtain public or private sector contracts. The second question asked whether and how frequently the firm had experienced discrimination in attempting to apply for commercial loans. The final question asked whether and how frequently the firm had experienced discrimination in working or attempting to work on private sector prime contracts.

Not surprisingly, one difference that we observed between respondents and non-respondents was a greater general interest in the questions being asked. Among survey respondents, only 25.3 percent indicated that the question about large project sizes was “not applicable.” Among non-respondents, the figure was 39.4 percent. Approximately 52.1 percent of survey respondents indicated that discrimination in applying for commercial loans never occurred, compared to 83.0 percent among non-respondents. Approximately 56.0 percent of survey respondents indicated that discrimination in working or attempting to work on private sector prime contracts never occurred, compared to 87.7 percent among non-respondents. This phenomenon was apparent regardless of whether the firm was minority-owned, women-owned, or nonminority male-owned.

Among those firms to which the question was applicable, 38.4 percent of minority-owned firms that did not respond to the mail survey indicated that large project sizes made it harder or impossible for them to obtain contract awards. Among those that did respond to the survey, the figure was 41.9 percent. Among nonminority female-owned firms that did not respond to the mail survey, 27.8 percent indicated that large project sizes made it harder or impossible for them to obtain contract awards. Among those that did respond to the survey, the figure was 33.0 percent. Neither of these differences is statistically significant.<sup>323</sup> This result implies that the

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<sup>323</sup> The percentages reported in this section may differ slightly from comparable figures reported elsewhere in Chapter VIII, since minorities of unknown race or ethnicity were excluded from the tallies in the mail survey.

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estimate of adverse disparity for M/WBE firms with regard to large project sizes that was reported from the mail survey (see Tables 8.7 and 8.8) is representative of that in the universe as a whole, since the ratio of M/WBE firms to non-M/WBE firms reporting difficulty in this regard is not statistically different between respondents and non-respondents.

Among those firms to which the question was applicable, 16.1 percent of minority-owned firms that did not respond to the mail survey indicated that they had experienced one or more instances of discrimination during the previous five years in applying for commercial loans. Among those that did respond to the survey, the figure was 49.0 percent. For nonminority female-owned firms, 7.7 percent of those that did not respond to the mail survey indicated that they had experienced one or more instances of discrimination during the previous five years in applying for commercial loans. Among those that did respond to the survey, the figure was 22.8 percent. Among nonminority male-owned firms that did not respond to the mail survey, 1.43 indicated that they had experienced one or more instances of discrimination during the previous five years in applying for commercial loans. Among those that did respond to the survey, the figure was 7.1 percent. All three of these differences are statistically significant. Regardless, among non-respondents as well as respondents, M/WBE firms reported a far greater degree of disparate impact than non-M/WBEs. The disparity was actually greater among non-respondents than non-respondents, indicating that the corresponding disparities reported above in this Chapter may be somewhat smaller than in the relevant population of businesses as a whole.

Among those firms to which the question was applicable, 15.1 percent of minority-owned firms that did not respond to the mail survey indicated that they had experienced one or more instances of discrimination during the previous five years in working or attempting to work on private sector prime contracts. Among those that did respond to the survey, the figure was 40.2 percent. For nonminority female-owned firms, 6.8 percent of those that did not respond to the mail survey indicated that they had experienced one or more instances of discrimination during the previous five years in working or attempting to work on private sector prime contracts. Among those that did respond to the survey, the figure was 20.2 percent. Among nonminority male-owned firms that did not respond to the mail survey, 1.4 indicated that they had experienced one or more instances of discrimination during the previous five years in working or attempting to work on private sector prime contracts. Among those that did respond to the survey, the figure was 8.3 percent. All three of these differences are statistically significant. Regardless, among non-respondents as well as respondents, M/WBE firms reported a far greater degree of disparate impact than non-M/WBEs. The disparity was actually greater among non-respondents than non-respondents, indicating that the corresponding disparities reported above in this Chapter may be somewhat smaller than in the relevant population of businesses as a whole.

The results of our non-respondent survey, in general, indicate that both M/WBEs and non-M/WBEs are more likely to have responded to the mail survey if they had experienced the difficulties identified in the mail survey. In some cases, this means the actual disparities facing M/WBEs may be somewhat larger than what we have estimated in our mail survey, in other cases they may be somewhat smaller. For all three questions examined, the basic qualitative finding of more problems and greater disparities being observed among M/WBEs than among non-M/WBEs is unchanged.

## **C. Business Owner Interviews**

To explore additional anecdotal evidence of possible discrimination against minorities and women in the Airport's market area, we conducted three group interviews. We met with 77 minority and female business owners and 34 nonminority male business owners from a broad cross section of the industries from which JMAA purchases construction, construction-related professional services such as engineering and architecture, and other goods and services. Firms ranged from decades-old family-owned firms to new start-ups. Owners' backgrounds included individuals with extensive experience in their fields and entrepreneurs beginning their careers. We sought to explore their experiences in seeking and performing prime contracts and subcontracts with the Airport, other public agencies, and in the private sector.

This effort gathered individual perspectives to augment the statistical information from the business experience surveys. In general, interviewees' individual experiences mirrored the responses to the business experience surveys. We also elicited recommendations for improvements to JMAA's current DBE program, submitted to the Airport under separate cover.

The following are summaries of the issues discussed. Quotations are indented, and are representative of the views expressed by many participants. Some have been shortened for readability. In general, non-DBEs offered no comments about discrimination.

### **1. Discriminatory Attitudes and Negative Perceptions of Competence**

Many owners still experience discriminatory attitudes and behaviors. Minorities and women repeatedly discussed their struggles with negative perceptions and attitudes of their capabilities within their industries. The stereotypes about minorities' and women's lack of competence infect all aspects of their attempts to obtain contracts and subcontracts, and to be treated equally in performing contract work. This was true across a wide swath of industries.

There's a school of thought that there's a certain kind of business that a minority can do or run or maintain.... We have a hard time breaking through, you know, the glass ceiling.

Whether you're a minority small business, a woman-owned business, that there is a stereotype.... You will find there's probably the same level of incompetence whether it's a small business or a large business.

### **2. Exclusion from Industry and Information Networks**

Minorities and women from across the spectrum of industries recounted their exclusion from the industry and information networks necessary for success. Both discrimination and the long-standing nature of industry networks operate to the disadvantage of DBEs.

[Even] going to the same school that they're going to and all that, it's difficult still. You can still go play golf with them, you can still do that. Sometime you get a little piece of the pie but that's it. But if it's not a serious relationship, it's just still difficult. You're still, you're still Black.

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The key is relationships.... I used to think that you get all of these, you have all of these credentials, you do good work, you have a strong foundation and it will come. Not necessarily. You got to get those relationships out there, they have to like you.

You have to cast a wider net in order to get a little work. Whereas, if I have been in business for fifty years and the business has passed down two or three times, I develop a network of people. There are still people who are reluctant to go to work for us.... There's a system where you retire [from an agency] and you go to work for a regional or national firm. You know, a lot of times you have that same ad in the paper [but] unless you go to church with that person or you know that person from the gym, you don't have an opportunity to recruit and retain those people who can walk you back in and get work so you end up having to do it with the same little group of people that you have working for you and they just don't have access to the processes and the way decisions are really made as opposed to what is written on the RFP. You know, most of the time with the RFP there's a lot of work that's gone on premarketing by a lot of firms before the RFP ever hits the street.

The big engineering firms around here, they're meeting with the Airport folks. They're kind of in communication with them. They're hearing what's coming up. But the little guys, you don't have any way of knowing what's coming.

If we wait until the announcement is made we're too late already.... [If you have relationships, then] they give us that phone call to let us know what needs to be done.

You just got to know people. If you don't know the right person, you won't get anything [and Black people don't know the right people].

### **3. Barriers to Obtaining Public Sector Contracts**

Overall, there was near universal agreement that the DBE Program remains necessary to reduce these types of barriers and open up opportunities on Airport contracts. Without affirmative action goals, minorities and women believe their firms would suffer or even close.

The DBE program I think has been an enormous blessing and without it I think that a lot of firms would have no chance at all. They do away with that DBE program, I'm dead in the water. ... Would they ever hire me on another level? The chances are zero.... If they did not have to have a goal I would not be part of the team.

If there are no goals or pressures from some force, then it typically does not happen that we are invited to be a part of the team.

They don't call.... Unless there is a goal or some underlying pressure is from the [Airport's] Board ... it typically does not happen.

If it wasn't for these goals, we probably wouldn't have got the job.

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One white woman urged the Airport to drop the race- and gender-conscious programs for a small business approach.

We need to just personally scrap the WBE and MBE and just go with small business. You know, because we're all small businesses is what we're dealing with here. I don't think it has to do with what color you are or what sex you are.... [Getting the contract] depends on who has the political clout. I mean, who's the one that you know? It doesn't matter what color you are if you're in good with somebody. That's why you do contacts. That's why you try to set up a network.

DBEs agreed that they are looking for opportunities, not handouts.

I don't want anybody to give me anything. Just give me an opportunity.

A few certified firms, almost all owned by white females, reported that the programs had led to opportunities outside of goals programs.

I have made numerous attempts—even face to face attempts—at other airport events and it has been consistent in that this is not something that they possibly may be interested in doing.... On the other hand, I've been at many pre-bids where a situation has come up where there's a DBE goal but we may not have been a good fit for that particular situation. And then after that pre-bid that construction company contacted us and asked, there's not a DBE goal on this particular project but I thought maybe this might be of interest to you. But also that company knew the track record of our president of our company so they knew that we would be a good fit for them. So I think because with some history behind it, it made sense. But it's not something that they're just freely going out there and just saying, hey, let me pick you up where there's no DBE goal.

I think that got our foot in the door.... After you've worked with them for awhile they do [use you on non-goals jobs].

A few DBEs in specialized or niche areas, such as environmental engineering, geotechnical services, and landscaping, reported that they did receive work from the Airport's prime firms on contracts without goals.

By the Airport suggesting [the prime use us] they got an opportunity to see the quality of work that we do.... We do get substantial work from them.

Few opportunities exist for minority-owned firms outside government affirmative action programs.

On the private sector issue, it is completely networked. It's a complete network. There are no goals. You get no business unless you are in that network.

Some owners advised newer firms to do whatever it takes to overcome these obstacles.

Stay, stay, stay focused, stay focused.... So you just have to keep on plugging in, plugging so people get to know each other's work.

Stay focused, stay out of the politics as much as you can. But just stay true to yourself and just focus on what you're doing.

#### **4. Barriers to Obtaining Work as Prime Vendors**

A particularly difficult challenge, especially for professional services and other services firms, is obtaining access to prime contracting opportunities. They would much prefer to perform as direct vendors to JMAA and other clients, yet the barriers of discriminatory attitudes, stereotypes about their capabilities, and longstanding networks often keep them pigeonholed into sub-vendor roles.

What I see is we need to change the mentality [of focusing on subcontracting by] letting DBEs become primes by forming your own team.... Many times if we're on a team with a majority firm, then we're selected.... We need for the Airport to be educated to see if this company has been doing work with me ... at what point are you not ready to form your own team?... And my first thought was that, well maybe the reason that it's not happening is because our proposal is inferior. But I've had conversations to find out that's not the case. The quality is good. You have a good team. But it's educating those decision makers that we can do it. So unconsciously, even though we say that we want our DBEs to reach that next level, do the decision makers feel as though that firm is competent? They feel as though they're competent to serve in a subservient role....

My problem is bidding as a prime. That we don't get the same prices as other primes get. My pipe supplier price is higher. All of my materials are higher. Prices from my majority subs are higher.... That's why you can't be successful as a prime in many cases.

We do [serve as the prime firm] in small, small projects. Which is okay. But ... don't just put me in this little box all the time.

Other agreed and disputed the explanation that DBEs lack the capacity to perform as the lead firm.

I don't think it's a size [problem].

Don't just look at that name and unconsciously think, well, because they're DBE they may not have capacity. Everybody teams and forms their team. Even the majority firms. They can't do everything, in spite of what the perception is....

Experience requirements were a barrier to being selected as the prime consultant.

They say list five projects that you had of a similar size, complexity and dollar value. You can do it in some cases from other places but it's hard to get it in relevant projects here because people just shop, you know, they may go to [other local DBEs]. They just

shop us off each other.... It's never a consistent flow of work where you ever develop any of the resume building, proposal building type of things that you need locally here.

There was overwhelming support for some sort of small business set-aside to assist DBEs and other small firms to compete for prime contracting opportunities.

It will help.

It would be critical to have a set aside of small business. If you can't have it based upon DBE then you have it on small business in the community. That would be critical to the success and the development of small business firms. And without that you're having to compete with the giants in the marketplace and that's really not going to be happening very often.

I think it would be great.

Having a small business set aside would yield the opportunity for us to produce some relationships, maybe we could garner the opportunity for more business.

To the extent that size is relevant to the ability to perform, there was close to universal support for unbundling contracts and reducing the length of term contracts.

They bundle too much in their projects. They make the projects larger than what they have to be.

### **5. Barriers to Obtaining Commercial Capital**

Access to business capital on an equal basis remains a significant barrier.

Access to capital is a barrier and it has always been a barrier and it's becoming a greater barrier now as the regulators kind of tighten up on the underwriting requirements.... The Airport could actually partner with their banker and put pressure on the banker to loosen up some of its underwriting requirements to make loans more accessible to minority businesses.

I had to early in the game understand it's not the suits, it's not the dress. You can articulate as well as you would like and still that's not enough. And so I had to come to the reality it's because I'm a woman and I'm African-American. I think the last time I went into a bank I sit there, I got so many, so tired of no's. I sit there and I had to compose myself not to cry. Because I couldn't take another no. And I knew I could do this. And I did. I made my first million in a year.... They're already predetermined whether or not they're going to give it to you or not before you even sit down and walk in the door. I'd spent countless hours. I went to Mississippi State University to even get my business plan put together. All of that to be told no. To pay off all of my debts and still be told no.

The bank people came sat right in my office. Oh you're so good. I got the degrees, my master's, my undergraduate. You set this up nice. You've got that drive. I have all my stuff that's here. Oh. And then when you e-mail them back they won't even answer the e-mail back. What happened to the, you're so good and now you can't even answer my e-mails? And see now that I'm in my fifth year and the people that thought I would fail [were wrong], and I'm still here.

When they look at a woman they just think that she can't handle it, she can't handle the management. And what I had to do early on was I had to get a male to go to the bank and co-sign with me.... Even though I'm a white female, I've had that very same experience. And I think that's probably as much woman as anything.

### **D. Conclusion**

The anecdotal interview information strongly suggests that DBEs across many industries continue to suffer discriminatory barriers to full and fair access to JMAA's prime contracts and associated subcontracts and private sector opportunities. This evidence includes the continued existence of discriminatory attitudes and perceptions of minority and female incompetence; exclusion from industry and information networks; barriers to obtaining public sector contracts; barriers to obtaining work as prime vendors; and barriers to obtaining commercial capital. These results are the type of anecdotal evidence that, in conjunction with statistical evidence, the courts have found to be probative of whether the Airport would be a passive participant in a discriminatory market area without affirmative interventions, and whether race- and gender-conscious remedies are necessary to address that discrimination.

## **IX. JMAA's Procurement Policies and Procedures and DBE Program: Overview and Feedback Interviews**

This Chapter describes JMAA's race- and gender-neutral procurement policies and procedures and its DBE Program for federal-aid contracts, followed by a summary of business owner experiences with the Program's policies and procedures.

### **A. JMAA's Race- and Gender-Neutral Procurement Policies and Procedures**

#### **1. Overall Procurement Statutes**

JMAA's purchasing and procurement authority is governed by Mississippi statutory law and applicable federal regulations. The Airport Authorities Law of Mississippi<sup>324</sup> sets forth the general powers of an airport authority and provides that a municipal airport authority may directly purchase and sell supplies, goods and commodities necessary to the operation of its airport properties without having to make purchases thereof through the municipal governing authorities.<sup>325</sup> However, airport authorities are deemed to be "governing authorities" under the general public purchasing statutes<sup>326</sup> and are therefore subject to the public purchasing provisions of the Code.<sup>327</sup> The general public purchasing statutes require that governing authorities purchase their commodities and contract for public construction and rentals through competitive bidding, unless a purchase is specifically excepted from competitive bidding under state statute.<sup>328</sup>

#### **2. Procurement Methods**

JMAA does not have a set of written standard operating procedures for purchases. However, as a governing authority, JMAA is required to adhere to applicable purchasing laws and regulations.

JMAA uses the following procurement methods:

- Purchases that do not exceed \$5,000 may be made without advertising or requesting competitive bids.<sup>329</sup> The Authority makes small purchases of items incident to airport operations through the issuance of purchase orders. Division Directors are authorized to requisition purchases up to \$500. For purchases from \$500 to \$5,000, requisitions require the further approval of the Chief Operating Officer ("COO"), Chief Administrative Officer ("CAO") or Chief Executive Officer ("CEO").

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<sup>324</sup> Miss. Code Ann. § 61-3-1, *et. seq.*

<sup>325</sup> § 61-3-15(e).

<sup>326</sup> § 31-7-1, *et. seq.*

<sup>327</sup> § 31-7-13; MS AG Op, Long (June 11, 2010).

<sup>328</sup> § 31-7-13.

<sup>329</sup> § 31-7-13(a).

- Purchases over \$5,000 but not over \$50,000 may be made by obtaining two written quotes.<sup>330</sup> Purchases within these limits may be made by the CEO without further Board approval if the Airport Authority staff obtains at least two written quotes. The Airport Authority staff sometimes makes these purchases from the State Department of Finance and Administration (DFA) catalog, which is developed through a competitive bid process. For construction projects under \$50,000, the Airport typically develops project specifications, obtains at least two quotes, and awards the contract to the contractor with the lowest quote and who at the same time meets state contracting qualifications. The CEO has the authority to award construction contracts up to \$50,000 without further Board approval, though must seek Board authorization for professional service contracts of any value.<sup>331</sup>
- Purchases in excess of \$50,000 are subject to competitive bidding.<sup>332</sup> These purchases may be made from the lowest and best bidder after advertising for competitive bids once a week for two consecutive weeks in a newspaper published in the county/city where the Airport Authority resides. Bids for the procurement of goods are opened not less than seven working days after the last published notice. For construction projects, bids shall not be opened in less than 15 working days after the last notice is published. The Airport Authority must submit notices for bid to the Mississippi Procurement Technical Assistance Program under the Mississippi Development Authority.<sup>333</sup> Bid specifications are generally required to be written so as not to exclude comparable equipment of domestic manufacture, but JMAA may specify particular equipment necessary to perform a specific job.<sup>334</sup> JMAA may purchase items in excess of \$50,000 utilizing the Department of Finance and Administration catalog without seeking additional competitive bids.
- Exceptions to bidding requirements include: (1) single source purchase of noncompetitive items available from only one source; (2) information technology products which are purchased under the provision of purchase schedules, or contracts executed or approved by the Mississippi Department of Information Technology Services and designated for use by governing authorities; (3) outside equipment repairs; (4) in house equipment repair; and (5) purchasing agreements, contracts, and

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<sup>330</sup> § 31-7-13 (b).

<sup>331</sup> *Ibid.*

<sup>332</sup> § 31-7-13(c).

<sup>333</sup> *Ibid.*

<sup>334</sup> § 31-7-13 (c)(iv).

maximum price regulations executed or approved by the Mississippi Department of Finance and Administration.<sup>335</sup>

For Requests for Qualifications (“RFQ”) on federally-assisted projects, a project manager (generally a director or manager) will draft a project proposal document. FAA Advisory Circular (AC) 150/5100-14D, “Architectural, Engineering, and Planning Consultant Services for Airport Grant Projects” applies to JMAA contracts. The project manager will prepare a memo for the JMAA Board of Commissioners outlining the proposed project scope and budget, and seeking approval and authorization to publish the RFQ. The RFQ is generally developed with the coordination of the project manager, DBE Director and legal counsel. The project manager is expected to provide a DBE Goal Setting Information Sheet to the DBE Director to allow for the development of an accurate DBE contract goal. The project manager proposes and the CEO approves an internal review team, which makes a recommendation for professional services based on a consensus scoring system.

JMAA has not historically issued RFQs for non-federally funded projects. Contracting for professional services such as architectural and engineering services on non-federally funded projects is initiated by JMAA making direct contact with professional services companies.

### **3. Vendor Registration**

The only form of vendor registration is through JMAA’s accounts payable software. JMAA does not solicit widely for vendor services because JMAA has the opportunity to procure expendable products from the DFA catalog. However, the Airport Authority is in the process of acquiring new DBE software that will allow for the registration of vendors to begin in the near future.

### **4. Construction Contract Award Procedures**

For larger construction projects, JMAA will typically retain the services of an architect or engineer to establish project specifications and scopes of work. JMAA has a “Project Management Activity Worksheet with Guidance” that sets forth a checklist of duties, responsible parties, timelines and general guidance for major projects. The project managers typically include the Senior Director of Capital Programming for most major construction projects, while the COO and the Maintenance Manager serve as the project managers for the acquisition of maintenance equipment and some construction projects. The DBE Director relies upon a detailed engineering estimate, preferably at 100 percent design completion, to set the construction contract goal. Mandatory pre-bid meetings are held to explain the project, including DBE requirements. The project manager and A/E professional will determine that bids are submitted in accordance with specifications and make a recommendation of the lowest and best bidder to the CEO and the JMAA Board. According to the project management activity worksheet, the DBE Director is to be involved in the drafting of the DBE goal, bid document finalization, bid publication, verification of DBE participation and the pre-award conference. The DBE Director

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<sup>335</sup> § 31-7-13 (m).

will review the low bidder's DBE subcontractors and verify their DBE certifications and capacities to perform the work.

No contract for public projects valued at \$50,000 or greater may be awarded to any contractor that does not have a current certificate of responsibility issued by the Mississippi Board of Contractors or a similar board of another state at the time of the submission of the bid.<sup>336</sup> Any person who knowingly submits a bid without a certificate of responsibility number shall be guilty of a misdemeanor. This provision is generally included in JMAA's "Instructions to Bidders" and tracks the requirements of the state statute.

JMAA requires three types of bonds. A performance bond must be furnished in an amount not less than the amount of the contract, conditioned for the full and faithful performance of the contract, prior to contract award.<sup>337</sup> Contractors are also required to furnish a payment bond conditioned for the prompt payment of all persons supplying labor or material used in the performance of the work under the contract, in an amount not less than the amount of the contract.<sup>338</sup> The required bonds may be made by any authorized surety company, or the bonds may be guaranteed by a personal surety.<sup>339</sup> JMAA generally includes performance bond and payment bond provisions and forms that track the language of state statutes in its "Standard Form Agreement." JMAA also requires contractors to submit a bid bond pursuant to federal bid bond requirements on federally-funded projects, conditioned on the contractor's execution of an Agreement with JMAA, the furnishing of a performance bond, payment bond, and certificates for all required insurance.

Whenever a contract is less than \$25,000, the contractor may elect to make a lump sum payment at the completion and acceptance of the job. In such a case, a performance bond or payment bond will not be required.<sup>340</sup>

For public works contracts exceeding \$25,000, the contractor is required to furnish proof of general liability insurance coverage in an amount not less than \$1 million for bodily injury and property damage.<sup>341</sup>

Retainage is 5 percent for public construction contracts that provide for progress payments in installments based on an estimated percentage of the completion with a percentage for retainage pending completion of the contract. The amount retained by the prime contractor from each payment due the subcontractor cannot exceed the percentage withheld by the public body. On any contract of \$250,000 or greater, or on any contract with a subcontractor regardless of amount, 5 percent shall be retained until the work is at least 50 percent complete, on schedule

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<sup>336</sup> § 31-3-15.

<sup>337</sup> § 31-5-51(1)(a).

<sup>338</sup> § 31-5-51(1)(b).

<sup>339</sup> § 31-5-51(1)(c).

<sup>340</sup> *Ibid.*

<sup>341</sup> § 31-5-51(7).

and satisfactory in the architect's and/or engineer's opinion, at which time 50 percent of the retainage shall be returned to the prime contractor for distribution to the appropriate subcontractors and suppliers. Future retainage is to be withheld at the rate of 2.5 percent.<sup>342</sup>

JMAA generally incorporates insurance and retainage provisions in its "Standard Form Agreement" that track the language of state statutes.

After a construction contract is let, the Airport Authority may approve a change order that modifies the original contract without further public bid if the change is made in a commercially reasonable manner and is not made to circumvent the public bidding statutes. The retained architect or engineer may be authorized to make modifications to the original contract without prior approval if the modification is less than 1 percent of the total contract amount.<sup>343</sup> Change order provisions are typically incorporated into the general terms and conditions of the JMAA standard agreement form.

## **5. Proof of Insurance**

In any solicitation for bids to perform public construction or other public contracts for which the contract will require insurance coverage for \$1,000,000 or more, bidders at the time of submission are permitted to either submit proof of current insurance coverage in the specified amount or demonstrate the ability to obtain the required coverage amount of insurance. Proof of insurance coverage must be submitted within 5 business days from the acceptance of the bid.<sup>344</sup>

The advertisements for bids furnished by JMAA do not contain a provision that allows bidders to demonstrate the ability to obtain required insurance coverage. The Standard Form of Agreement requires the bidder to deliver the certificate of insurance at the time of the execution of the Agreement.

## **6. Sanctions**

No contract or purchase under the public purchase statute shall be made for the purpose of circumventing the competitive bidding process nor shall a bidder submit split invoices so as to appear to be authorized as purchases for which competitive bids are not required. Submission of split invoices is a misdemeanor punishable by a minimum of \$500 and not more than \$1,000 or 30 days in jail or both.<sup>345</sup>

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<sup>342</sup> § 31-5-33.

<sup>343</sup> § 31-7-13(g).

<sup>344</sup> § 31-7-13(v).

<sup>345</sup> § 31-7-13(o).

## 7. Emergency Purchases Procedures

If JMAA deems that an emergency exists in regard to the purchase of any commodities or repair contracts such that a delay for competitive bidding would be detrimental to its interest, then competitive bidding procedures do not apply, and the CEO shall approve the bill presented for emergency purchases and repairs. The emergency repair or purchase shall be presented at the next board meeting following the emergency and shall be placed on the Board's minutes.<sup>346</sup>

## 8. Timely Payment of Invoices

All public bodies are required to pay vendors for the purchase of goods and services no later than 45 days after receipt of invoice, inspection and approval of goods or services, otherwise an interest charge of 1.5 percent applies.<sup>347</sup> For public construction projects, payments shall be made in the interval set forth in the contract. Final payments of monies owed to contractors shall be due and payable: (1) at the completion of the project or after substantial completion; (2) when the owner beneficially uses the project; or (3) when the architect or engineer certifies that the project has been completed. If final payments are not made timely, late payments shall bear interest at a rate of 1 percent per month.<sup>348</sup> Although these provisions on timely payment of invoices are not expressly included in JMAA's contract documents, they nevertheless apply. These provisions are included in the Authority's contract documents where relevant.

## B. Disadvantaged Business Enterprise Program Overview

### 1. Program Elements

As a recipient of U.S. Department of Transportation funds, JMAA is required as a condition of receipt to implement a Disadvantaged Business Enterprise (DBE) program in compliance with 49 C.F.R. Part 26.<sup>349</sup> In brief summary, JMAA:

- Keeps and reports various data to USDOT, including the utilization of DBEs on its federal-aid contracts and create a bidders list of all firms bidding to the Airport Authority as prime contractors and firms bidding to those prime contractors as subcontractors.<sup>350</sup>
- Has adopted a non-discrimination policy statement.<sup>351</sup>

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<sup>346</sup> § 31-7-13(k).

<sup>347</sup> § 31-3-305.

<sup>348</sup> § 31-5-25.

<sup>349</sup> 49 C.F.R. §§ 26.3 and 26.21.

<sup>350</sup> 49 C.F.R. § 26.11.

<sup>351</sup> 49 C.F.R. § 26.23.

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- Has appointed a DBE Liaison Officer, with substantial responsibilities and direct reporting to the chief executive officer of the agency.<sup>352</sup>
- Makes efforts to utilize DBE financial institutions.<sup>353</sup>
- Has adopted a prompt payment mechanism for its prime contractors and for the prompt payment of subcontractors by prime contractors.<sup>354</sup>
- Has access to a DBE directory as a member of the Mississippi Unified Certification Program.<sup>355</sup>
- Addresses possible overconcentration of DBEs in certain types of work.<sup>356</sup>
- Includes elements to assist small businesses, such as unbundling contracts.<sup>357</sup>
- Sets overall goals for annual utilization of DBEs in its federal-aid contracts.<sup>358</sup>
- Utilizes contract goals to the extent necessary to meet the overall goal.<sup>359</sup> Meeting the goal is treated as a matter of responsiveness by the bidder or proposer.
- Follows good faith efforts procedures as established in the regulations when a bidder cannot meet a contract goal.<sup>360</sup>
- Counts DBE participation as provided in the regulations.<sup>361</sup>
- Participates in the Unified Certification Program for the State of Mississippi.<sup>362</sup>
- Takes necessary enforcement actions against firms participating in the DBE Program.<sup>363</sup>

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<sup>352</sup> 49 C.F.R. § 26.25.

<sup>353</sup> 49 C.F.R. § 26.27.

<sup>354</sup> 49 C.F.R. § 26.29.

<sup>355</sup> 49 C.F.R. § 26.31.

<sup>356</sup> 49 C.F.R. § 26.33.

<sup>357</sup> 49 C.F.R. § 26.39.

<sup>358</sup> 49 C.F.R. § 26.45.

<sup>359</sup> 49 C.F.R. § 26.51.

<sup>360</sup> 49 C.F.R. § 26.53 and Appendix A.

<sup>361</sup> 49 C.F.R. § 26.55.

<sup>362</sup> 49 C.F.R. §§ 26.61-26.91 and Appendix E.

<sup>363</sup> 49 C.F.R. § 26.107.

- Complies with the regulation governing information, confidentiality, cooperation, intimidation and retaliation.<sup>364</sup>

## **2. Program Administration**

### **a. Staffing**

The DBE Program is administered by the DBE Liaison Officer (DBELO). His JMAA title is DBE Director. He is assisted by a Compliance Analyst. The Airport is in the process of hiring additional staff, including a Certification Manager.

The DBE Director sits on the selection teams for Professional Services to ensure compliance with the Program policies and objectives.

Over the last several years, the DBE Director has regularly attended training opportunities at Airport Minority Advisory Council and American Contract Compliance Association conferences.

### **b. Outreach and Communication**

JMAA conducts outreach to DBEs and other firms about its operations in general and the DBE Program in particular. For example, it conducts information workshops on doing business with the Airport Authority; sessions on major projects; Unified Certification Program community outreach updates; vendor fairs; and other similar events.

JMAA is a member of the Mississippi Chapter of the Associated Builders and Contractors, Inc. and the Arkansas-Mississippi Minority Supplier Development Council ("AK-MS MSDC"); supports the Mississippi Minority Business Alliance through the DBE Director's service as the Chairman of the Board of Directors; and supports the overall mission of the Mississippi Association of Minority Contractors.

JMAA has participated as a panelist or workshop leader at a number of events sponsored by the Mississippi Development Authority ("MDA"), AK-MS MSDC, the U.S. Small Business Administration, and other local organizations.

The Airport Authority staff also attends the pre-bid meetings for other public and private owners to meet and establish relationships with DBE and non-DBE contractors and vendors. Staff members have also attended several sessions of MDA's Model Contractor Development Program around the State of Mississippi.

In 2010, JMAA initiated an inaugural multi-agency Certification Workshop with MDA and MDOT. Approximately 40 people attended.

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<sup>364</sup> 49 C.F.R. § 26.109.

**c. DBE Compliance Policies and Procedures**

JMAA has developed detailed policies and procedures and forms to ensure that the Program is administered correctly. These instructions are contained in its "Guidelines for DBE Participation and Required Contract Provisions for DBE Participation in Federal Aid Construction Contracts." There is no comparable document for consulting contracts. The Guidelines include the following topics:

- *The Airport's Non-Discrimination Policy.* Bidders and their subcontractors must not discriminate.
- *The DBE contract goal for the project.* The bidder must make good faith efforts as defined in 49 C.F.R. Part 26 to ensure that DBE participation equals or exceeds JMAA's contract goal and must take all necessary and reasonable steps to ensure that DBEs have the maximum meaningful opportunity to compete for and perform portions of the work. If the award is made with DBE participation less than the contract goal, the contractor must continue to make good faith efforts throughout the performance of the contract to increase the DBE participation to meet the contract goal. Whenever contract supplements, extra work orders, or change orders are made that individually, or in the aggregate, increase the total dollar value of the contract, the contractor must make good faith efforts to maintain the level of DBE participation as established in the contract documents.
- *The effect of failure to comply with DBE requirements.* Failure shall include but is not limited to: failure to submit any required documents and certifications with the Bid Proposal; failure to make good faith efforts to meet the contract goal; failure of the contractor to meet its commitment for DBE participation; or failure to maximize opportunities for DBEs. Failure to carry out the requirements will constitute a breach of contract and may result in rejection of the bid; termination of the contract; a deduction from the contract funds due or to become due the contractor; or other remedy JMAA deems appropriate.
- *Definitions of terms used in the Guidelines, including commercially useful function and good faith efforts.*
- *Examples of actions not acceptable as reasons for failure to meet the DBE goal.* These include:
  - The DBE was unable to provide performance and/or payment bonds.
  - Rejection of a reasonable bid based on price.
  - The DBE would not agree to perform items of work at the unit bid price.
  - Union versus non-union status.

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- The contractor normally would perform all or most of the work of the contract.
- Solicitation of DBEs by mail only.
- Restricting opportunities to only those items listed in the contract documents under such headings as “Potential Subcontracting Opportunities” or the like.
- *Eligibility of DBEs.* This includes information on the MUCP and the caution that firms not certified through the MUCP are not eligible to be counted towards the DBE contract goal for USDOT-assisted contracts. Firms must be certified at the time of bid opening to be eligible for credit towards meeting the contract goal.
- *Counting DBEs for contract goal credit.* This embodies the requirements of Part 26. Credit is no longer awarded for DBEs who issue second tier contracts to non-DBEs.
- *Procedures for award documentation.* This describes the documents that must be submitted with the bid to be considered responsive. DBE participation is verified through review of the signed subcontracts prior to the issuance of the notice to proceed to the prime contractor or consultant. Documents include:
  - A complete list of subcontractors and material suppliers in the form provided by JMAA. The subcontractor list must include the names and addresses of the firms, a list of bid items of work they will perform or materials they will supply and the dollar value of the work, and information on the subcontractor's Mississippi certificate of responsibility. Verification of the firm's DBE certification must be provided. The contractor must execute subcontracts with all listed subcontractors and submit copies of subcontracts to JMAA's Project Manager prior to issuance of a Notice to Proceed.
  - A “Notice of Intent to Perform as a Subcontractor and/or Material Supplier” executed by each DBE subcontractor and material supplier proposed in connection with the work.
  - The contractor's Good Faith Efforts Report and Statement, which are required only when the bidder has not met the contract goal. The apparent low bidder's attainment of the DBE goal or demonstration of good faith efforts will be evaluated to determine if the apparent low bidder is responsive.
  - Verification of subcontractor proposal documentation. The contractor must provide to JMAA's DBE Program Manager and JMAA's Project Manager itemized pricing quotes from each of the subcontractors and material suppliers named on the subcontractor list. The level of detail must be consistent with the pricing schedule under the contract documents.
- *Post award compliance procedures.* These include:

## JMAA's Procurement Policies and Procedures and DBE Program: Overview and Feedback Interviews

- The requirement that if the contract is awarded with less than full DBE goal participation, the contractor has the continuing obligation to exercise good faith efforts to maximize participation of DBEs throughout the term of the contract. Prior to entering into any additional subcontracts for any portion of the work, the contractor must submit a request to subcontract to JMAA's Project Manager and DBE Program Office documenting the contractor's good faith efforts to utilize DBE subcontractors/suppliers prior to entering into a contract with a non-DBE.
- If DBE participation exceeds the original contract goal, the contractor will be required to achieve the DBE participation shown in its bid proposal regardless of the initial goal established by JMAA.
- The contractor shall establish a program that will effectively promote increased participation by DBEs in the performance of contracts and subcontracts. The contractor shall also designate a liaison officer who will be responsible for the administration of the contractor's DBE program.
- The contractor must enter into subcontracts or other written agreements with all subcontractors (DBEs and non-DBEs) identified in the bid proposal for the kind and amount of work specified.
- The contractor must keep each DBE informed of the project progress schedule and allow each DBE adequate time to schedule work, stockpile materials, and otherwise prepare for the subcontract work.
- At any point during the performance of the contract that it appears the scheduled amount of DBE participation may not be achieved, the contractor must provide evidence to JMAA's DBE Program Office demonstrating how the goal will be met.
- If the contractor fails to demonstrate to JMAA's satisfaction that its failure to achieve the contracted DBE participation was due to reasons such as quantitative under-runs or elimination of items contracted to DBEs and that good faith efforts have been made to meet the contract goal, JMAA may withhold an amount equal to the difference between the DBE goal and the actual DBE participation achieved as damages.
- When JMAA has reason to believe the contractor or any subcontractor (including any DBE) may not be operating in compliance with these requirements through "fronting," brokering, failing to provide a commercially useful function or for other reasons, JMAA's DBE Program Office will conduct an investigation. The contractor, each subcontractor or other involved party will be required to fully cooperate with the investigation. If JMAA determines that any person or entity is not complying, JMAA will notify the person or entity in writing as to the specific instances or matters found to be in noncompliance.

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- To ensure that the subcontractor obligations are met, JMAA will review the contractor's prompt payment efforts. The contractor must pay subcontractors and suppliers, including DBEs, within 5 calendar days after receipt of payment for the items performed by the subcontractors. The contractor must provide the DBE with a full accounting, including quantities paid and deductions made from the DBE's partial payment at the time payment is made. Failure to do so without cause may result in an equal amount being withheld from the contractor on the next progress or final payment.
- JMAA reserves the right to withhold any payment from the contractor if it determines that a DBE is not performing a commercially useful function or that achievement of the goal is in question. Payment may be withheld in the amount of the DBE goal until either the contractor submits a revised plan for achieving the goal and the plan is approved by JMAA, or the goal has been met.
- JMAA will monitor the performance of DBEs during contract performance, and the contractors' efforts to meet the goal. If, at contract completion, the contractor has failed to meet the goal and has not demonstrated good faith efforts or obtained a reduction of the goal, JMAA may withhold an amount equal to the difference between the DBE goal and the actual DBE participation achieved as damages. Additionally, JMAA may impose any other administrative sanctions or remedies available at law or provided by the Agreement in the event of breach by the contractor by failing to satisfy the contractor's DBE commitment. However, no damages will be assessed and no other administrative sanctions or remedies will be imposed when, for reasons beyond the control of the contractor, and despite the good faith efforts made by the contractor, the final DBE contract goal was not achieved.
- Prior to final payment, the contractor must file a detailed list showing each DBE used on the contract, the work it performed and the amount it was paid, less any rebates, kickbacks, deductions, withholdings, or other repayments made. The list shall be certified under penalty of perjury to be accurate and complete. JMAA will determine if the contractor has satisfied the DBE contract goal and the extent to which DBEs were fully paid for that work. The contractor will acknowledge that the information is supplied to obtain payment from JMAA, which includes federal assistance from the USDOT.
- *Substitutions of DBE after contract award.* The contractor may not terminate, substitute, add or replace any subcontractor or change the amount of any work to be performed by any subcontractor except in strict compliance with the contract documents. Substitution of DBEs will be allowed only when the DBE is unable to perform due to default, over extension on other jobs, or other similar justification. If a requested change would result in a shortfall of DBE participation, the contractor must immediately take steps to substitute another DBE or make good faith efforts to do so. Evidence of good faith efforts of the contractor must be submitted to JMAA for

approval. If the contractor is unable to replace a DBE with another DBE for the applicable item, it must make good faith efforts to subcontract other items to DBEs to meet the goal. Under no circumstances will the contractor be allowed to perform work originally designated for a DBE without JMAA's prior written approval. JMAA may allow an adjustment of the goal as appropriate, depending on individual project circumstances.

- *Record keeping requirements.* The contractor must keep records to permit JMAA to determine compliance with the DBE contract obligations. These records shall include: the names of subcontractors, including DBEs; copies of all subcontracts; the type of work being performed; documentation such as canceled checks and paid invoices verifying payment for work, services, materials, supplies and equipment; and documentation of correspondence, oral contacts, telephone calls, and other efforts to obtain services of DBEs. When requested, the contractor must submit copies of all subcontracts and any other documents to JMAA's DBE Program Office. JMAA reserves the right to investigate, monitor and/or review actions, statements, and documents submitted by any contractor, subcontractor, materialman or supplier.
- *Reporting requirements.* The contractor must submit monthly reports on DBE participation. The contractor must submit with each Application for Payment the Record of Payments to Subcontractors, Material Suppliers and other Vendors Report (available from JMAA). These reports are required until all subcontracting activity is complete and the final payment has been made. Reports are required regardless of whether subcontractor activity has occurred since the last Application for Payment. Upon completion of the contract, and as a condition to final payment, the contractor must submit the Final Record of Payments Report. When the actual amount paid to a subcontractor is less than the amount indicated in the Agreement, the contractor must provide a complete explanation of the difference. If contract goal has not been met, the contractor must submit documentation supporting its good faith efforts. All payments due subcontractors which affect DBE goal attainment, including retainage, must be paid by the contractor before JMAA will release the contract retainage. JMAA reserves the right to conduct an audit of DBE participation prior to processing the contractor's final payment and at any time during the performance of the contract.

To ensure that these policies and procedures are followed, DBE participation is verified through review of the signed subcontracts prior to the issuance of the notice to proceed to the prime contractor or consultant.

#### **d. Program Data Collection and Tracking**

The Airport Authority is in the process of installing an electronic contract compliance system. The system will provide JMAA with an enterprise-level, end-to-end system to manage contracts, concessions, and DBE certifications to maintain compliance with 49 C.F.R. Parts 23 and 26, plus set project-specific goals and track bids and utilization plans per the regulatory guidelines and

notify the DBE community of relevant opportunities and events. The B2GNow system will provide the following functionality:

- Contract compliance with multi-tier subcontractor tracking;
- Concession compliance;
- Vendor management, including aggregation of all vendor information into a single profile reference point, with contact information, key employees, applicable certifications, registration data, prime/sub contracts, bid participation, non-contract payments, etc.;
- DBE certification management;
- DBE online application information and forms;
- Project-specific goal setting using this Study's availability estimates;
- Bid and proposal tracking, including logging and tracking prime contractor subcontractor utilization plans; invoices verification that the proposed utilization percentage has been calculated correctly in compliance with 49 CFR Part 26 (e.g., suppliers, brokers, joint ventures, etc.); and collecting bidders list information.
- Outreach and events management;
- Interfaces with JMAA's existing financial systems; and
- Migration of the DBE directory.

**e. DBE Supportive Services**

The Airport Authority works in conjunction with the Mississippi Department of Transportation, which has hired Systems Consultants to provide DBE Supportive Services. JMAA periodically requests the firm to conduct an e-mail blast or include information about up-coming bid opportunities in its e-newsletter to DBEs.

The Mississippi Development Authority (MDA) has several financing programs, which JMAA encourages DBEs to utilize. They are:

- Minority Business Micro Loan Program
- Minority Business Enterprise Loan Program
- Capital Access Loan Program (MS CAP)
- Mississippi Energy Investment Program

- Minority Surety Bond Guarantee Program
- Minority Capital Fund

Additionally, the MDA provides the Model Contractor Development Program.

### **C. Mississippi Set-Aside Authorization Statute**

Mississippi law authorizes a governing authority, in its discretion, to set aside up to 20 percent of its anticipated annual expenditures for the purchase of commodities from minority businesses.<sup>365</sup> A minority business is defined as a business owned by persons who are Asian, African American, Hispanic, or Native American. All set-aside purchases are subject to bid requirements under state law, and if competitive bids are required, the purchase must be made from the lowest and best minority business bidder.

JMAA has not adopted a minority-set aside program for its non federally-assisted contracts. However, JMAA has sometimes set DBE goals on locally funded contracts.

### **D. Business Owner Interviews**

To gather anecdotal evidence of the effectiveness of JMAA's DBE policies and procedures in leveling the playing field for all firms on federal-aid and locally-funded contracts, we interviewed 111 firm owners or representatives. The following are summaries of the issues discussed. Quotations are indented and are representative of the views expressed by multiple participants. Highly repetitive or idiosyncratic comments were not included. Some quotations have been shortened for readability.

#### **1. Perceptions of the Program's Overall Effectiveness**

As discussed in detail in Chapter VIII, the great majority of minorities and women reported that the DBE Program remains critical to ensure their full and fair access to JMAA's contracts. Being certified created opportunities that otherwise would not have been open to them. DBE requirements were seen as vital to the continuing viability of their companies.

If it wasn't for these goals that we probably wouldn't have got the job.

Some Black owners argued for the adoption of separate goals for minorities and women for a local program.

It would be very helpful if we differentiate between women-owned businesses and African-American owned businesses. And so that we don't put them together in that same box. Because all you're going to do now is make us turn on each other. And so where there's a firm that's made that somebody else's daughter or whatever, that's fine as long

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<sup>365</sup> Miss. Code Ann. § 31-7-13(s).

as they are not competing for the same work that the African-American owned firm is competing for. Two separate goals. That would be very helpful.... What we're saying is that the experience is so different. The access to the decision maker is so different. A white female-owned business has greater access to the decision makers than an African-American-owned business and if I as a prime can accomplish my goals with a white female-owned business, I would choose to do that, if I were a white male prime. So, the access issue is different.

They do need to separate and the reason being is right now with the DBE program the woman-owned business and the minority-owned business, a prime contractor can meet his goal by either or.... [It's better] having the opportunity to get a percentage of something instead of having a opportunity to get a percentage of nothing.... I have nothing against a woman going into business whether she's white, Black, Hispanic. It don't matter. Only thing I'm saying is, as I look at construction and the business of construction overall, I see that minority contractors in particular and Black minority contractors, is still on a decrease instead of an increase.

Some white females disagreed that they are less disadvantaged than Blacks of either gender.

I've never experienced getting a deal on any supplies, ever, cause I was a white chick. I've never gotten a deal at a bank. I've never had one white guy try to help me, never, and I surely don't golf with them.... I've been in the big world and one of the good old boys ran right over me. And, so, yes we're a minority.

## **2. Access to Information about Upcoming Opportunities and Contract Specifications**

DBEs reported that they regularly received information from the Airport Authority about upcoming bids.

The Airport I think does a good job in terms of making information available.

Some participants, DBEs and non-DBEs, stated that more vendor fairs and networking events would be helpful.

We don't have the skills or the staff power to do [the kind of intense networking and lobbying like large firms]. These are the kinds of things that the Airport can help do.

[JMAA should] have quarterly meetings or something where we can, they can give us a presentation overview of the projects and forecast and network events and things like that.

What if you had a [vendor] fair? Suppose people [at the Airport] could talk about the rules and regulations that they have to abide by?

We ought to be able to get Hinds County, City of Jackson, some of the other surrounding communities and the Airport together. To me it would make more sense to have multiple local governments together into one fair.

Forecasting information about upcoming opportunities was suggested by a wide cross section of participants.

[What] would be helpful at times was the forecasting of future purchases.... I didn't know [the procurement] was upcoming. And so I don't know what the criteria by which they selected the products were. And it may be that I didn't supply the one, the one style or color or specification that they were looking for. But I didn't know that the opportunity was there to make an effort to come out and reconnect and say, hey, we've got this new product.

Part of the forecasting would be, we're forecasting the purchase of this category. We're looking for new innovative ways to do this, do this, do this. This is what we have now. This is what we're using it for. Then maybe offer to ask for an appointment for your sales guy to come in and talk to whoever he needs to talk to and you all can walk through and say, well you know, we might do this, this, and this.... You post it on the website.

If they would have a plan that says, we've applied for a grant to do this particular type of project and if it comes through it's going to be second quarter of next year. And if they could put that on the website ... with a disclaimer that says, these projects may or may not happen but here's our plan, here's what we're thinking of for long range [it would be helpful]. And that would enable the small firms to be able to watch what's coming and kind of communicate and be ready for it.

Some prime contractors thought the Airport Authority should do more to notify DBEs in particular of upcoming projects.

Use your database and notify people.

### **3. Contract Size and Specifications**

DBEs and non-DBEs agreed that "unbundling" contracts so that small firms can submit bids or proposals would increase opportunities. This would create opportunities for DBEs and smaller firms to obtain work as prime vendors, a barrier discussed in detail in Chapter VIII.

They bundle too much in their projects. They make the projects larger than what they have to be.

One DBE praised JMAA for awarding the firm a major contract as a prime vendor.

To this Board and to the Airport Authority's credit, they are open to the idea of minority firms or DBE firms serving as prime. We were very recently selected for the project on [a

major project].... That is a step in the right direction.... But you know, there's an education process and there has been willingness from all of us to make it happen.

#### **4. Meeting DBE Goals at Contract Award**

The goal setting process and meeting contract goals elicited many comments. Most prime contractors reported that while it was often difficult and burdensome, they were able to meet DBE contract goals.

We started working with the Airport about six months ago and it's very important that they have their minority participation. And we strive in working on our projects to make sure those goals are met.... We were [able to meet the goal].... But it is a problem. I mean, I'm not going to say it's not. It's very hard to find minority engineers, and that's what we would be looking for.... We did [use engineers]. But we also had to think out of the box and with our printing and things like that.... As far as major engineering companies there's not that many minorities in Mississippi. It is very hard for you. If you were doing a straight building project it would be very difficult if you didn't have specialized consultants that you could bring into your pool and to your team. You would be very hard pressed to meet the minority participation that you need, actually not just with the Airport, but with every government entity.

When you get into, you know, area specific knowledge it's a matter of doing some research and the airport's done a very good job of making available to us contacts and companies that we were able to go to. So ours have been small and we wanted them done one or two projects. But we had no problems. Now, I think the number on ours was fifteen percent. And some of them even though they were not solicited through that other mechanism, we were still able to do it and [the Airport has] encouraged us to use [DBEs] where it makes sense. And it even made sense. I mean it's not just a trying to meet a goal but it was actually a functional part of the team that contributes. And so those relationships are the ones that you really want to build on. Because you're not trying to meet a goal. You're trying to accomplish a job and do it well and you got team members that play a good part.... I've already teamed them with a group out of [out of state city] on another project already. So, it expands as we go through branches. But yes, everything we've done so far has been wonderful.

Some of our clients that have these DBE programs are really starting to push not just having a DBE that does document preparation. They want a DBE that's going to do engineering work. They're not going to want somebody that's just going to be a meeting coordinator and do document storage and producer and that kind of stuff. It's apparent when you do that that's all you're doing is trying to meet a goal and I think the, at least in my opinion, the DBE program, I don't think that's their goal. The DBE program I think is to get DBE companies to be able to do this work that maybe they can't do or maybe train into that.

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We've been fortunate to have all our subcontractors and DBEs to perform. It goes back to some of the DBEs out there are not qualified to do the work. But yet they're listed through MDOT and whatever. And you just got to select ones you've had good faith effort by in the past and continue with them.

You build up a working relationship with subcontractors. And it's an experienced type thing where you've experienced what these people are good at, what type projects they're good at, what their capabilities are. And you have to pick and choose.

Some found it hard to find capable and qualified DBEs.

As prime contractors, you're trying to balance a competitive environment with DBE goals and that there's just not enough qualified, certified DBEs to address all the trades.... And [an] interest problem. DBEs don't want to work out here [at the Airport].... A lot of them already have more work than they can do now.... Some of them don't have the ability to do good work that's out here. And others that do, they stay busy. You can't get them to bid work. It's all negotiated.

You call a guy up and say, you've got this job. And when he comes to your office and looks through your set of plans and sometimes he's got a good idea of what's going on and sometimes he doesn't. So you go through several to get a competitive price in certain areas. But even then you still sometimes don't even get a price. So, you're kind of hung out there like, well we're not going to meet our DBE goal.

It's kind of like raising children. You got to take them under your wing and raise them and take care of them because you are the parent company per se. You are overall responsible for that person on that project. In addition, we're so focused on doing what's right and doing the right job.... So, when we take a subcontractor that is marginally qualified then we're risking our reputation.... Finding that right DBE not just for the sake of meeting this 19 percent goal, but to do [the work]... regardless of the percentages.

I would rather parse out small pieces to several different DBEs than to put a huge piece in one hand where there's two people there. Because I've been the two man firm, and it becomes difficult. Let's say that [large firm] and I have a contract with the same DBE. And my fee to them is \$15,000. His fee to them is \$200,000. And he will pass to them ten jobs a year. I do one. He wants his job sped up on schedule, what happens to me? And so I'm bad evaluated by the Airport because I'm required to have a DBE.

That's always a battle in who you choose to team with. Because a lot of times you get in there and you get a DBE firm and you meet with the guy over lunch and you say, okay, let's join with the DBE and the first thing that happens is it goes south. So, at that point how do you come back and still meet the DBE requirements of the federal government side whenever you had no choice but to split ways?... We didn't have a DBE replacement... I don't think we were sanctioned or anything but the client wasn't happy about it. And, but to get the project complete that was the only way that you could do it

without spending a whole lot of your own money finishing a project because your DBE. And it's not just DBEs. We've had that happen with subs that weren't DBEs. It's not just strictly DBEs but it is harder to find DBE firms that are truly qualified to do the work.

You hate to step into these relationships and then find out after you get into the relationship that you can't meet your goals and your quality is going down so you're spending your dollars to try to fix somebody else's problem.... I don't like to go into business with somebody that I don't have a lot of good background [information about].

[When a DBE was not able to perform,] we ended up having to reduce their scope of work and basically eliminate them from one task. And then we filled in that portion and since that time we found an alternate.

Finding DBEs in specialized areas is even more difficult.

We do have a group of [competent] civil engineers around town who are DBEs. But when you get into mechanical engineering and electrical engineering, locally there's really not much choice.

That's a big problem we have. [The Airport has] strict safety requirements. A lot of the DBEs don't participate [in safety programs].

The problem that you find a lot of times is that we have a very specialized segment that works on aviation and has airport experience and when you go find a DBE firm and you have five or six people sitting there that do all kinds of civil engineering tasks but have no real experience on an airport.... They look solely to us for that experience. And we understand that. But there's such a steep learning curve that it's really hard to employ them and give them a significant chunk of the work and just be able to walk away and know that you're going to get it back and the quality that you look for.

A lot of DBEs are available that are general civil but they have never done anything on the air field. Which is, it's not that it's a world of difference but it is a different scenario.

Some non-DBE prime bidders felt that the DBE contract goal was often set unrealistically high.

Some [contracts] don't have that much, say, on a paving job. There's not that much to give a DBE. You make the asphalt, you lay the asphalt, and there's not that much more to do. So, if the goal is set too high, it makes it very difficult.

They need to do a little research as far as what firms are out there and the availability and what their criteria is with each individual project and set the goals that way. I think they just sometimes just pull a random number out of a hat.

The desire to self-perform work was a barrier to complying with the goal.

You self perform and then you have to turn around and take it away from your guys to give to somebody else just to meet the goals.

Some of the projects that we have out here there's not enough, quote, sub work to give to somebody else to meet the goals.

You don't bid a job if you can't do some of the work. You have to help. And we love our subs. We have good relationships with our subcontractors and many of them are DBEs. And we encourage them along and do as much as we can for them. But if we bid a job we would like to do some of the work, too.

Some prime contractor participants reported that there are uncompensated additional costs to using DBE subcontractors.

You need a whole separate budget for just managing all of those people.

One learned that the DBE on his project in turn subcontracted the work to a non-DBE, leading to shortfall in meeting the goal.

We went into an agreement, understanding that our DBE would be doing the surveying work for a project. Well it turns out they oversaw the survey work but they turned around and handed it to a non DBE company so then that work that we intended to have performed as a DBE task is now no longer a DBE task.

Forming joint ventures with DBEs has been a successful strategy for some firms.

One of the ways we've accomplished that is partnering with other firms, including the DBE as an equal partner and forming an LLC.... [The pool of DBEs is] limited and it is a challenge. I would say the Airport has been, since [year] that's how long we've been working with them, have had a DBE program but it really hasn't been as strictly enforced maybe as it has in the last couple years with [the new DBE Liaison Officer]. We really noticed, you know, his efforts in trying to get the program, something that's beneficial and helpful to the local contractors and suppliers that need DBE. He's facilitated some groups and tried to get people together just to meet, over lunch, just for an introduction. [That's helped.]<sup>366</sup>

You offer it as a joint venture [when there isn't enough work to subcontract to meet the contract goal].... It worked out fine. They were 51 percent, we were 49 percent on the joint venture.

However, another participant pointed out the issues with using a joint venture to meet a goal.

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When you have a joint venture partner that's 51 percent, what is that [DBE partner] bringing to the table? You know, generally it's the larger general contractor that's doing most of the work, has the expertise, has the financial wherewithal. So it's hard to make that marriage, where it's an equitable process.

The small pool of firms has led to a disincentive for prime consultants to train DBEs who then appear on other proposers' teams.

You train a DBE and now they're on everybody's team.... So they've got the experience. Well now with the DBE goals they can be on any team. And we've had some where we've worked with DBEs ended up on all the teams.... Which is kind of the goal for the DBEs is to get them that way. But then you lose your competitive advantage as far as the project work and being a truly qualified DBE. You lose that edge you may have with that DBE versus somebody else.

Highly qualified DBEs sometimes relocate outside Mississippi.

The other problem is if you find a really good DBE this is such a small market that they're immediately recruited to Atlanta or Houston or Dallas. You call them up and they say, well I don't live there, you know, I'm gone.... Because they're sought out all over the country, not just here.

Several general contractors found that DBEs sometimes lack basic business skills and facilities.

Some of our subs don't have a fax machine. They don't know how to quote. We put our plans on FTP sites. They don't, they can't get into them. If they have a computer they just don't have the proper hardware or something. And we have meet and greets a lot of times too as a good faith effort. They are not always well attended. You know, we get the same people who know us.... They call us and they'll say I'm trying to find a fax machine. They'll go to anyplace and say, can I use your fax machine. And we send them bid sheets. And say, you know, find the items you want to bid, put your unit price. We really help them a lot if we can.

Lack of access to bonding and financing are further barriers to utilizing DBEs as subcontractors.

Some cannot be bonded or cannot bond. They don't have the background to bond.

Depending on the firm, they're probably undercapitalized.

There's some great guys out there that can do the work. Somebody mentioned they're undercapitalized, their insurance program or safety program is not where it needs to be.... It's just hard to, you know, for us to take that risk.

Experience and insurance requirements and slow payments were recognized by non-DBEs as impediments to using DBEs.

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I've hired some small DBE engineers, one person, two people. And they can't meet the liability insurance requirements.

I've got one DBE that's been hounding me every week about a payment on a job for here.

The other problem they're going to have is the time between contract award and getting paid. These people have to be paid every two weeks.

Some professional services participants commented that the lack of sufficient DBE capacity is related to a lack of young minority students going into the professions, and when they do, a lack of necessary training to become successful entrepreneurs.

We spend about \$200,000 giving minority engineering scholarships and that type of deal. And we employ about ten or so scholarship recipients over the years. That doesn't do anything for this program... You're promoting minority engineering ownership but you're really not promoting minority engineering development.... [But] we don't employ African-Americans or other people to come work for us so we can train them to go open their own business.... We're doing everything we can to encourage these people to stay with us longer

You have to start further down the line.

You can't wait until they graduate college and say you should have been an architect or engineer.

If there is a process where you can get credit by bringing up the minorities and having the females or the Black, or Hispanic or whoever it would be, within your firm, I would think that that would be an easier [approach].

They know how to be engineers, good engineers, sharp as a tack. They know nothing about forming a business.... How do you set up an LLC? What's an operating agreement? How do you structure it?

More marketing efforts on the part of DBEs was cited by some participants as a step to increase participation.

Our estimators are going to call the guys that are in front of them.... Market your business. You know, come knock on the door. Come drink a cup of coffee with the estimators.... We don't know that they're there sometimes. That's a lot of it. And you have to go out there and search and try to find. You know, if you're having to meet these goals, it ought to be the other way around. We've come out there and said, yes, we're going to bid this project. You've got a list sitting out there just like every other subcontractor does with the same availability. There's a lot of online services that give you this information. You can call the architect, you can call the airport. Normally they keep their plan holder slip. And they can put it online, get ABC, AGC, and a lot of other

plan rooms plus online services. So I mean the information's there it's just a lot of times it feels like, you feel like they don't want to proceed, come get the work.

That's always just amazed me that, that [the DBEs] want work, want to do the work but they're not going after the work. But again, it's our part to go in there and say, come on over here and do this job. You come over here and do this job and put something together when it's out of our norm of who we'd normally use or it may be someone that we normally use but they're not a DBE.

A substantial number of general contractors reported that it was difficult to fulfill the goal and provide the required documentation with the bid, as JMAA requires in order to be considered responsive to the invitation for bid.

On bid days ... you have a limited amount of time that you have to fill out all this information. So basically you have to have all this information the day before, pick who you're going to use, whether they're low or not and just go with it. You don't get to sit down and make that correlation between the two and sit there and grind the numbers to mix and match and fit and have a good quality project at a competitive price.

On some projects even after the fact, you have to list every subcontractor you have. Sometimes we may have 10 or 15 depending on how elaborate the project is. You can't list all those people in a short period of time. We just take the numbers that's that.

One solution offered would be to allow a short window to submit DBE compliance forms after the bid is submitted.

If you give us 30 minutes to an hour [to submit DBE paperwork after bid submission] that's fine.

If you know what you've got and what you went with you can fill it all out [within a short time after bid opening].

You're not really talking about changing out the DBEs you chose. You're just talking about submitting the paperwork.

Could there also be a web-based form?

A web-based form would be quicker and it would be time stamped, too.

## **5. Contract Performance Monitoring and Enforcement**

In general, DBEs reported that JMAA adequately monitors participation during contract performance. Several participants contrasted the Airport Authority's enforcement efforts favorably with those of other agencies.

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With the Airport they follow it to the letter.... They were very good. They were active. They would call. And I had a great prime and I think that is really the key to it. But I have had similar [negative] experiences to [names] on some other projects.... I had the suspicion that they were just checking the box and after that it sort of went away. But my experience with the airport has been extremely positive. They were very good. They followed up.

The Airport is one of the better [agencies] because they do follow through ... to make sure that you're being paid in a timely manner, are you really getting what was awarded? So, from that standpoint I'm fine.

Sometimes you're invited to be on a particular team to work with one of the prime contractors. They agree on percentages upfront. And the contract gets awarded and you're not notified nor does the contractor, the prime contractor you're working with, even invite you to do the work that you signed up to do. I haven't had the experience with the Airport.

Some DBEs reported that more monitoring of DBE program compliance is needed.

A monitoring process of actual, to a certain degree, invoices and paid invoices from those subs throughout the process. Because I think that would eliminate part of the problem.

We have a project we're working on with a prime and we had agreed to a percentage and the Airport signed off on it and everything. And we started the project and everything was going well. And we get to a spot where we had to shut down for the winter and everything. When it came back to construction ... we were basically just cut out of the project. We got a letter, basically cease and desist any work that you could be possibly doing. We'll call you later.... I fault the Airport staff for that because, again, we had signed contracts and all that and we had been coming to all other meetings ... I did call the folks we were working with, why did I get this letter? Well, we just wanted to use you for after the construction is complete phase, for the warranty period. And of course, I did not agree with that and complained about it. I blame the airport staff for not following up on that. If you have a DBE, why all of a sudden the DBE stopped showing up. No written [documentation] that we didn't perform properly because they never told us.... We didn't write you but we just decided to put you out without telling you. And I understand that the Airport did ask for some information. I said well, you're never going to get it because they don't have any.... And my understanding the airport let them continue to go on with the project.... We had a significant fee in there, and of course, I'm sure they wanted to continue to keep as much fee as possible.

[Make] the subs aware of the awarding of a contract.

The Jackson Municipal Airport Authority [should] put resources to increasing full staffing for the Disadvantaged Program.

## **6. Payment**

Most prime contractors expressed satisfaction with the speed with which JMAA processes complete invoices, and we heard no complaints from subcontractors.

It's a well-run agency.

[The] Airport [is a] better customer [than other agencies].

I've seen a lot of improvement over the years, as far as the turnaround time with the Airport.

## **7. Assistance Programs for DBEs and Small Firms**

Some DBEs had specific suggestions for supportive services to assist them with Airport Authority contracts, especially in obtaining prime work.

The Airport could have a wraparound insurance policy that could cover small minority businesses or small businesses, whatever that business is. They could have a wraparound program on bonding.... Startup capital, the loans required, could be all contained inside the Airport on Airport projects.

Put on a program to explain and tell small businesses, woman owned, minority small businesses, how they can go about getting that Certificate of Responsibility.

Some general contractors agreed that more support for DBEs is needed.

There's a lot of guys that are very capable, very good tradesmen. They do good concrete work and all that, you know, or carpentry or whatever it may be. But you've got to develop the business side of your businesses. That's equally important to us as generals that they have those systems in place.

## **8. Mentor-Protégé Initiatives**

There was interest in mentor-protégé programs from DBEs and large consulting firms, or at least for some formal mentoring efforts to assist DBEs.

The Airport could take a leadership role in the State of Mississippi and start developing some of these smaller electrical mechanical guys, creating a database, creating people, not necessarily a Mentor-Protégé Program but a mentoring program saying, hey, we want you to grow. Because that's the ultimate goal of the DBE programs is to take a small business, let it grow, let it flourish, let it take the lumps with some advantage early on and say, hey. Hey, we've learned a lot of lessons over the past five years, ten years. Now it's time we can compete and go after the prime contracts.

Although mentor-protégé programs can work, there were some caveats.

[Our large engineering firm] has done some of the mentor-protégé [programs] in several places across the country.... Some of them have been successful, some of them not as successful. And I think one of the biggest things is when you ... a 20 percent goal and you bring in somebody to mentor they're basically coming into your office and working in your office. You end up having a lot more than a 20 percent involvement when you start bringing in two or three people from a DBE firm into a project and your project fees may be only a couple hundred thousand dollars. But when you start really adding that together there ends up being a risk involved to the prime doing that as well. If it's not working out what do you do if you have that large of a percentage DBE required ... and they can't do the work? And we've had that problem to where the DBE was, needed to be or was fired from the project. They couldn't do the work. And what do you do at that point? You've shown a good faith effort.... You've said you got the DBE participation and now they can't do the work. They're not qualified or they're not able to do the work that's scheduled. What does an engineering firm do to meet that schedule if you've already started the project and you've already paid fees to these people?

## 9. Small Business Set-Asides

There was overwhelming support from small firms of all ownership types for some type of small business program that includes the use of set-asides or target markets for certified small firms to assist DBEs and other small firms to compete for prime contracting opportunities.

It would be critical to have a set aside [for] small business. If you can't have it based upon DBE then you have it [based] on small business in the community. That would be critical to the success and the development of small business firms. And without that you're having to compete with the giants in the marketplace and that's really not going to be happening very often.

It will help.

[If we] had all these business development people and all these people to be out constantly beating the bushes we wouldn't be small. So it has to be some type of, you know, trade off to make it fair to everybody

I think it would be great.

It would kind of be good if they would kind of have some small business set aside.... [But] what's going to be the stopgap or the measures to prevent a large firm saying, hey let's [set up a sham small business]?

## **10. DBE Program Committee**

DBEs and non-DBEs generally supported the idea of the Airport Authority appointing a DBE Program Committee to provide advice and input on the operations of the DBE Program. It would be composed of certified firms, non-DBEs and JMAA staff with contracting responsibilities.

It sounds like partnering collaboration.

## **E. Conclusion**

The interviews strongly suggest that JMAA implements the DBE Program well within the parameters of 49 C.F.R. Part 26. Some improvements could be made, including increasing access to information about the Airport's processes and upcoming opportunities; reviewing contract sizes and specifications to reduce barriers to the participation of small firms; providing additional supportive services to DBEs and other small firms; consideration of a mentor-protégé program; and adoption of a small business set-aside or target market.

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## Appendix A. Glossary

**ACS.** *The American Community Survey.* The Census Bureau's ACS is an ongoing survey covering the same type of information collected in the decennial census. The ACS is sent to approximately 3 million addresses annually, including housing units in all counties in the 50 states and the District of Columbia.

**African American:** African American or "Black" refers to an individual having origins in any of the Black racial groups of Africa.

**Aggregation, aggregated:** Refers to the practice of combining smaller groups into larger groups. In the present context, this term is typically used in reference to the presentation of utilization, availability, or related statistics according to industry. For example, statistics presented for the "Construction" sector as a whole are more aggregated than separate statistics for "Building Construction," "Heavy Construction," and "Special Trades Construction" industries. See also "Disaggregation, disaggregated."

**Anecdotal evidence:** Qualitative data regarding business owners' accounts of experiences with disparate treatment and other barriers to business success.

**Asian or Asian/Pacific Islander:** Refers to an individual having origins in the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islanders (except Native Hawaiians).

**Availability:** A term of art in disparity studies that refers to the percentage of a given population of businesses owned by one or more groups of interest. For example, Table A indicates that DBE availability in Construction is 20.36 percent, indicating our estimate that 20.36 percent of all the construction establishments in JMAA's relevant market area are owned by minorities or women. *See also* Utilization, Disparity Ratio.

**Baseline Business Universe:** The underlying population of business establishments that is used in an availability analysis. It is used as the denominator in a DBE availability measure.

**Black:** Or "African American" refers to an individual having origins in any of the Black racial groups of Africa.

**Capacity:** This term has no single definition. See Chapters II and IV for extended discussions of this concept and its role in disparity studies.

**Constitutional significance or substantive significance:** An indication of how large or small a given disparity is. Under the EEOC's "four-fifths" rule, a disparity ratio is substantively significant if it is 0.8 or less on a scale of 0 to 1 or 80 or less on a scale of 1 to 100.

**Decennial:** Refers to the census conducted every decade by the U.S. Census Bureau. The last decennial census was conducted in 2010.

**Demand-side:** Refers to activity on the demand-side of an economic market. For example, when State agencies hire contractors or vendors they are creating market demand. *See also* “Supply-side.”

**Dependent variable:** In a regression analysis, a variable whose value is postulated to be influenced by one or more other “independent” or “exogenous” or “explanatory” variables. For example, in business owner earnings regressions, business owner earnings is the dependent variable, and other variables, such as industry, geographic location, or age, are the explanatory variables. *See also* “Independent variable,” “Exogenous variable.”

**Disaggregation, disaggregated:** Refers to the practice of splitting larger groups into smaller groups. In the present context, this term is typically used in reference to the presentation of utilization, availability, or related statistics according to industry. For example, statistics presented for “Building Construction,” “Heavy Construction,” and “Special Trades Construction” industries are more disaggregated than statistics for the “Construction” sector as a whole.

**Disparate impact:** A synonym for “disparity,” often used in the employment discrimination litigation context. A disparate impact occurs when a “good” outcome for a given group occurs significantly less often than expected given that group’s relative size, or when a “bad” outcome occurs significantly more often than expected.

**Disparity ratio (or Disparity Index):** A measure derived from dividing utilization by availability and multiplying the result by 100. A disparity ratio of less than 100 indicates that utilization is less than availability. A disparity ratio of 80 or less can be taken as evidence of disparate impact. *See also* Availability, Constitutional significance, Utilization.

**Distribution.** A set of numbers and their frequency of occurrence collected from measurements over a statistical population.

**Econometrics, econometrically:** Econometrics is the field of economics that concerns itself with the application of statistical inference to the empirical measurement of relationships postulated by economic theory. *See also* “Regression.”

**Endogenous variable:** A variable that is correlated with the residual in a regression analysis or equation. Endogenous variables should not be used in statistical tests for the presence of disparities. *See also* “Exogenous variable.”

**Exogenous variable:** A variable that is uncorrelated with the residual in a regression analysis or equation. Exogenous variables are appropriate for use in statistical tests for the presence of disparities. *See also* “Endogenous variable,” “Independent variable,” “Dependent variable.”

**FFY:** Fiscal Year. JMAA’s Federal Fiscal Year runs from October 1 through September 30.

**First-tier subcontractors:** Subcontractors, subconsultants, or suppliers hired directly by the prime contractor.

**Hispanic:** Refers to an individual of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

**Independent variable:** In a regression analysis, one or more variables that are postulated to influence or explain the value of another, “dependent” variable. For example, in business owner earnings regressions, business owner earnings is the dependent variable, and other variables, such as industry, geographic location, or age, are the independent or explanatory variables. *See also* “Dependent variable,” “Exogenous variable.”

**MBE:** Minority-Owned Business Enterprise. A business establishment that is 51 percent or more owned and controlled by racial or ethnic minorities (i.e., African Americans, Hispanics, Asian/Pacific Islanders, or Native Americans).

**Mean:** A term of art in statistics, synonymous in this context with the arithmetic average. For example, the mean value of the series 1, 1, 2, 2, 2, 4, 5 is 2.43. This is derived by calculating the sum of all the values in the series (i.e., 17) and dividing that sum by the number of elements in the series (i.e., 7).

**Median:** A term of art in statistics, meaning the middle value of a series of numbers. For example, the median value of the series 1, 1, 2, 2, 2, 4, 5 is 2.

**Microdata or micro-level data:** Quantitative data rendered at the level of the individual person or business, as opposed to data rendered for groups or aggregates of individuals or businesses. For example, Dun and Bradstreet provides micro-level data on business establishments. The Census Bureau’s *Survey of Business Owners*, provides grouped or aggregated data on businesses.

**Misclassification:** In the present context, this term refers to a situation when a listing or directory of minority-owned or women-owned firms has incorrectly classified a firm’s race or gender status. For example, when a firm listed as Hispanic-owned is actually African American-owned, or when a firm listed as nonminority female-owned is actually nonminority male-owned. *See also* “Nonclassification.”

**MSA:** Metropolitan Statistical Area. As defined by the federal Office of Management and Budget, contains at least one urbanized area that has a total population of 50,000 or more, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.

**NAICS:** North American Industry Classification System. The standard system for classifying industry-based data in the U.S. Superseded the Standard Industrial Classification (SIC) System in 1997. *See also* “SIC.”

**Nonclassification:** In the present context, this term refers to a type of misclassification when a listing or directory has not identified firms as minority-owned or women-owned when, in fact, they are. *See* “Misclassification.”

**NSSBF or SSBF.** The *Survey of Small Business Finances*, formerly the *National Survey of Small Business Finances*, was produced jointly by the Federal Reserve Board and the U.S. Small Business Administration to provide a periodic statistical picture of small business finances. The SSBF was discontinued in 2003.

**Native American:** Refers to an individual having origins in any of the original peoples of North America, including Native Hawaiians.

**Nonminority:** Firms that are not DBEs, i.e., not owned by African Americans, Hispanics, Asian/Pacific Islanders, Native Americans, or White females.

**PUMS:** Public Use Microdata Sample. Both the decennial census and the American Community Survey publish PUMS products.

**p-value:** A standard measure used to represent the level of statistical significance. It states the numerical probability that the stated relationship is due to chance alone. For example, a p-value of 0.05 or 5 percent indicates that the chance a given statistical difference is due purely to chance is 1-in-20. *See also* “Statistical Significance.”

**Regression, multiple regression, multivariate regression:** A type of statistical analysis which examines the correlation between two variables (“regression”) or three or more variables (“multiple regression” or “multivariate regression”) in a mathematical model by determining the line of best fit through a series of data points. Econometric research typically employs regression analysis. *See also* “Econometrics.”

**SBO:** The Census Bureau’s *Survey of Business Owners* statistical data series is devoted to capturing statistical information on the nation’s minority-owned and women-owned business enterprises. Part of the five-year *Economic Census* series.

**Set-aside, set-asides:** A contracting practice where certain contracts or classes of contracts are reserved for competitive bidding exclusively among a given subset of contractors, for example minority-owned and women-owned contractors.

**SIC:** Standard Industrial Classification system. Prior to 1997, the standard system for classifying industry-based data in the U.S. Superseded by the North American Industry Classification System (NAICS). *See also* “NAICS.”

**Statistical significance:** A statistical outcome or result that is unlikely to have occurred as the result of random chance alone. The greater the statistical significance, the smaller the probability that it resulted from random chance alone. *See also* “p-value.”

**SSBF.** *See* NSSBF.

**Stratified:** In the present context, this refers to a statistical practice where random samples are drawn within different categories or “strata” such as time period, industry sector, or DBE status.

**Substantive significance or constitutional significance:** An indication of how large or small a given disparity is. Under the EEOC’s “four-fifths” rule, a disparity ratio is substantively significant if it is 0.8 or less on a scale of 0 to 1.

**Supply-side:** Refers to activity on the supply-side of an economic market. For example, when new businesses are formed, other things equal, the supply of contractors to the market is increased. See also “Demand-side.”

**t-test, t-statistic, t-distribution:** Often employed in disparity studies to determine the statistical significance of a particular disparity statistic. A t-test is a statistical hypothesis test based on a test statistic whose sampling distribution is a t-distribution. Various t-tests, strictly speaking, are aimed at testing hypotheses about populations with normal probability distributions. However, statistical research has shown that t-tests often provide quite adequate results for non-normally distributed populations as well.

**Two-tailed (or two-sided) statistical test:** A “two-tailed” test means that one is testing the hypothesis that two values, say  $u$  (utilization) and  $a$  (availability), are equal against the alternate hypothesis that  $u$  is not equal to  $a$ . In contrast, a one-sided test means that you are testing the hypothesis that  $u$  and  $a$  are equal against the alternate hypothesis  $u$  is not equal to  $a$  in only one direction. That is, that it is either larger than  $a$  or smaller than  $a$ .

**Utilization:** A term of art in disparity studies that refers to the percentage of a given amount of contracting and/or procurement dollars that is awarded or paid to businesses owned by one or more groups of interest. For example, Table B1 indicates that overall DBE utilization on federally-assisted contracts was 22.28 percent of paid dollars, indicating that 22.28 percent of the \$21.1 million of federal-aid contract payments by JMAA accrued to minorities or women, either as prime contractors or as first-tier subcontractors. *See also* Availability, Disparity Ratio.

**WBE:** Women-Owned Business Enterprise: A business establishment that is 51 percent or more owned and controlled by nonminority women. In this Study, unless otherwise indicated, WBE refers to nonminority women-owned firms.

**EWSC:** Refers to the East and West South Central census divisions in the NSSBF and SSBF data sets. The EWSC includes the states of Mississippi, Alabama, Kentucky, Tennessee, Arkansas, Louisiana, Texas, and Oklahoma.

## Appendix B. Master D/M/WBE Directory Sources

### A. Entities with lists of DBE firms that were duplicative of previously collected lists

Central Miss. Planning and Dev. District	Mississippi Delta Developers Association
Central Mississippi Procurement Center	Mississippi Power Company
City of Gulfport	Mississippi State Board of Contractors
City of Meridian	Mississippi Unified Certification Program
Coast Electric Power Association	Mississippi State University
County of Kemper	Natchez, Inc.
County of Stone	National Electrical Contractors Association
Covington County Schools	North Central Planning and Dev. District
De Soto National Forest	North Delta Planning and Dev. District
Gulfport-Biloxi International Airport	Northeast Miss. Planning and Dev. District
Hattiesburg-Laurel regional airport	South Miss. Contract Procurement Center
Hinds County Econ. Development District	Southwest Mississippi Community College
Holly Springs National Forest	Tallahatchie Valley Electric Power Assoc.
Lowndes County	Tate County Economic Dev. Foundation
Meridian Airport Authority	Three Rivers Planning & Dev. District, Inc.
Mid-Mississippi Development District	Tupelo Regional Airport
Mississippi Contract Procurement Center	

### B. Entities that had no directory, or their directory did not identify race and gender

Appalachian Regional Commission	City of Clarksdale
Asian Women in Business	City of Clinton
B&B Commercial Electrical Jackson	City of Greenville
Bienville National Forest	City of Hattiesburg
Biloxi Public School District	City of Laurel
Central Electric Power Association	City of Pearl
City of Biloxi	City of Ridgeland
City of Brandon	City of Southaven

## Appendix B. Master D/M/WBE Directory Sources

City of Starkville	Jackson County
City of Tupelo	Jackson County Chamber of Commerce
City of Vicksburg	Jackson County Economic Dev. Foundation
Clarke County Chamber of Commerce	Jackson Public Schools
Coahoma County Business Dev. Center	Madison County Economic Dev. Authority
Coahoma Electric Power Association	Madison County Schools
Community Development Foundation of Tupelo/Lee County Mississippi	Minority Business Entrepreneur Magazine
Community Development Partnership	Minority Contractors Assoc. of Miss. Inc.
County of Clarke	Mississippi Department of Education
County of Coahoma	Mississippi Institutions of Higher Learning
County of Copiah	Mississippi State University
County of Desoto	Mississippi University for Women
County of Forrest	Mississippi Valley State University
County of Hancock	Natchez Trace Electric Power Authority
County of Harrison	National Association for the Advancement of Colored People
County of Hinds	National Forests in Mississippi
County of Jasper	Native American Business Alliance
County of Lamar	Newton County Schools
County of Lauderdale	Olive Branch Chamber of Commerce
County of Madison	Pascagoula School District
County of Rankin	Rankin County School District
County of Simpson	Southern Pine Electric Power Association
County of Washington	Southwest Miss. Electric Power Association
Delta National Forest	The Area Development Partnership
Delta Regional Minority Business Assoc.	The Industrial Development Authority of Neshoba County
Delta State University	Tishomingo County Electric Power Assoc.
Desoto County Schools	Tombigbee National Forest
East Mississippi Electric Power Association	Tunica Airport Commission
Electric Power Associations of Mississippi	Tunica County Government
Golden Triangle Regional Airport	University of Mississippi
Hancock County Chamber of Commerce	University of Mississippi Medical Center
Harrison County School District	

University of Southern Mississippi

Warren County Purchasing Department

**C. Entities that were non responsive to repeated contacts**

4-County Electric Power Association

Jackson County Small Business Incubator

Alcorn State University

Jackson State University

Arkansas-Mississippi Minority Supplier  
Development Council, Inc.

Jasper County Economic Development  
District

British Petroleum Supplier Diversity  
Program

Mississippi Minority Business Alliance

Chevron Refinery Procurement

Northcentral Electric Power Association

City of Columbus

South Regions Minority Supplier  
Development Council Inc.

Delta Electric Power Association

Southern Company

Dixie Electric Power Association

Tombigbee Electric Power Association

**D. Entities that declined to provide the requested information**

City of Pascagoula

National Association of Women in  
Construction

Mississippi Black Chamber of Commerce

State Office of the Mississippi Small  
Business Development Center

Miss. Minority Business Enterprise Center

Mississippi Small Business Development  
Center at Jackson State University

U.S. Women's Chamber of Commerce

National Association of Women Business  
Owners

## **Appendix C. Detailed Utilization, Availability & Disparity Tables**

This appendix presents DBE utilization, availability, and disparity statistics analogous to those presented in Chapter VII, Tables 7.7 through 7.12, according to detailed NAICS Industry Groups.<sup>367</sup>

Twenty-four tables are presented; six each for Construction, AE-CRS, Services, and Commodities, respectively. Within each procurement category the first two tables include all contracts regardless of funding source, with the first table using dollars awarded as the metric of utilization and the second table using dollars paid. The next two tables within each procurement category are restricted to federally-assisted contracts, and the final two tables to locally-funded contracts.

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<sup>367</sup> Comparable statistics were calculated at the NAICS Industry level as well (five-digit and six-digit NAICS). In the interest of space, these results are not reported here. Four-digit NAICS codes are most comparable to four-digit Standard Industrial Classification (SIC) codes, which were used prior to the advent of the NAICS system.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.1. Industry Group Utilization, Availability, and Disparity Results for JMAA Construction Contracting (All Funds) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	4.74	4.85	97.63
Hispanic	0.00	0.92	0.00
Asian	0.00	0.84	0.00
Native American	0.00	2.29	0.00
Minority Total	4.74	8.90	53.22
Nonminority female	5.23	13.45	38.87
DBE Total	9.97	22.35	44.59
Nonresidential Building Construction (NAICS 2362)			
African American	38.72	11.05	
Hispanic	0.00	1.34	0.00 ***
Asian	0.00	0.69	0.00 ***
Native American	0.00	1.82	0.00 ***
Minority Total	38.72	14.91	
Nonminority female	0.00	9.45	0.00 ***
DBE Total	38.72	24.36	
Other Specialty Trade Contractors (NAICS 2389)			
African American	44.75	11.47	
Hispanic	0.00	1.63	0.00
Asian	0.00	1.39	0.00
Native American	0.00	0.42	0.00
Minority Total	44.75	14.91	
Nonminority female	1.91	10.23	18.64
DBE Total	46.66	25.14	
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	3.33	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	3.33	0.00 ***
Nonminority female	0.00	16.95	0.00 ***
DBE Total	0.00	20.28	0.00 ***
Building Equipment Contractors (NAICS 2382)			
African American	16.93	9.40	
Hispanic	0.00	1.48	0.00 ***
Asian	0.00	1.33	0.00 ***
Native American	0.00	0.08	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	16.93	12.29	
Nonminority female	20.56	8.19	
DBE Total	37.49	20.48	
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	1.44	8.45	17.02
Hispanic	0.00	1.29	0.00 ***
Asian	0.00	1.28	0.00 ***
Native American	0.00	0.01	0.00
Minority Total	1.44	11.04	13.03
Nonminority female	0.00	8.05	0.00 ***
DBE Total	1.44	19.09	7.53
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	1.21	5.02	24.19
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.19	0.00
Minority Total	1.21	6.89	17.64
Nonminority female	0.00	15.77	0.00 ***
DBE Total	1.21	22.66	5.36 ***
Utility System Construction (NAICS 2371)			
African American	82.83	2.56	
Hispanic	0.00	0.41	0.00
Asian	0.00	1.38	0.00
Native American	0.00	0.00	
Minority Total	82.83	4.34	
Nonminority female	0.00	12.31	0.00 ***
DBE Total	82.83	16.66	
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	24.60	0.00 ***
Hispanic	7.24	0.26	
Asian	0.00	0.13	0.00
Native American	70.40	0.07	
Minority Total	77.64	25.06	
Nonminority female	0.00	35.94	0.00 ***
DBE Total	77.64	61.00	
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	2.70	0.00 ***
Hispanic	0.00	0.52	0.00
Asian	0.00	6.67	0.00 ***
Native American	0.00	0.52	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	10.41	0.00 ***
Nonminority female	0.00	28.43	0.00 ***
DBE Total	0.00	38.83	0.00 ***
Building Finishing Contractors (NAICS 2383)			
African American	0.00	9.55	0.00 ***
Hispanic	0.00	1.27	0.00
Asian	0.00	1.27	0.00
Native American	0.00	0.12	0.00
Minority Total	0.00	12.22	0.00 ***
Nonminority female	3.40	7.68	44.30
DBE Total	3.40	19.90	17.10 **
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	6.86	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.15	0.00
Minority Total	0.00	8.68	0.00 ***
Nonminority female	2.25	13.94	16.13 **
DBE Total	2.25	22.62	9.94 ***
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	13.21	12.56	
Hispanic	0.00	1.68	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.21	0.00
Minority Total	13.21	14.45	91.40
Nonminority female	0.00	19.53	0.00 ***
DBE Total	13.21	33.97	38.87 **
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	7.93	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.49	0.00
Native American	0.00	0.65	0.00
Minority Total	0.00	10.07	0.00 ***
Nonminority female	0.00	22.16	0.00 ***
DBE Total	0.00	32.23	0.00 ***
General Freight Trucking (NAICS 4841)			
African American	0.00	8.71	0.00
Hispanic	0.00	0.05	0.00
Asian	0.00	2.99	0.00
Native American	0.00	0.02	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	11.77	0.00 ***
Nonminority female	0.00	26.61	0.00 ***
DBE Total	0.00	38.38	0.00 ***
Boiler, Tank, and Shipping Container Manufacturing (NAICS 3324)			
African American	0.00	2.48	0.00
Hispanic	0.00	0.32	0.00
Asian	0.00	0.00	
Native American	0.00	0.32	0.00
Minority Total	0.00	3.13	0.00
Nonminority female	0.00	20.55	0.00
DBE Total	0.00	23.68	0.00
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.00	4.95	0.00 ***
Hispanic	0.00	0.70	0.00
Asian	0.00	0.95	0.00
Native American	0.00	0.70	0.00
Minority Total	0.00	7.29	0.00 ***
Nonminority female	0.00	15.20	0.00 ***
DBE Total	0.00	22.49	0.00 ***
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	4.72	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.63	0.00 ***
Native American	0.00	0.08	0.00
Minority Total	0.00	6.44	0.00 ***
Nonminority female	0.00	12.30	0.00 ***
DBE Total	0.00	18.73	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.2. Industry Group Utilization, Availability, and Disparity Results for JMAA Construction Contracting (All Funds) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Nonresidential Building Construction (NAICS 2362)</b>			
African American	38.66	11.05	
Hispanic	0.00	1.34	0.00 ***
Asian	0.00	0.69	0.00 ***
Native American	0.00	1.82	0.00 ***
Minority Total	38.66	14.91	
Nonminority female	0.00	9.45	0.00 ***
DBE Total	38.66	24.36	
<b>Highway, Street, and Bridge Construction (NAICS 2373)</b>			
African American	10.35	4.85	
Hispanic	0.00	0.92	0.00
Asian	0.00	0.84	0.00
Native American	0.00	2.29	0.00
Minority Total	10.35	8.90	
Nonminority female	12.26	13.45	91.16
DBE Total	22.61	22.35	
<b>Other Specialty Trade Contractors (NAICS 2389)</b>			
African American	42.71	11.48	
Hispanic	0.00	1.63	0.00
Asian	0.00	1.39	0.00
Native American	0.00	0.42	0.00
Minority Total	42.71	14.92	
Nonminority female	1.93	10.23	18.82
DBE Total	44.63	25.15	
<b>Other General Purpose Machinery Manufacturing (NAICS 3339)</b>			
African American	0.00	3.33	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	3.33	0.00 ***
Nonminority female	0.00	16.95	0.00 ***
DBE Total	0.00	20.28	0.00 ***
<b>Foundation, Structure, and Building Exterior Contractors (NAICS 2381)</b>			
African American	1.32	8.45	15.57
Hispanic	0.00	1.29	0.00 ***
Asian	0.00	1.28	0.00 ***
Native American	0.00	0.01	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	1.32	11.04	11.92
Nonminority female	0.00	8.05	0.00 ***
DBE Total	1.32	19.08	6.89
Building Equipment Contractors (NAICS 2382)			
African American	23.11	9.38	
Hispanic	0.00	1.48	0.00 ***
Asian	0.00	1.33	0.00 ***
Native American	0.00	0.08	0.00
Minority Total	23.11	12.27	
Nonminority female	27.95	8.08	
DBE Total	51.06	20.36	
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	1.21	5.02	24.19
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.19	0.00
Minority Total	1.21	6.89	17.64
Nonminority female	0.00	15.77	0.00 ***
DBE Total	1.21	22.66	5.36 ***
Utility System Construction (NAICS 2371)			
African American	77.92	2.56	
Hispanic	0.00	0.41	0.00
Asian	0.00	1.38	0.00
Native American	0.00	0.00	
Minority Total	77.92	4.34	
Nonminority female	0.00	12.31	0.00 ***
DBE Total	77.92	16.66	
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	24.60	0.00 ***
Hispanic	7.24	0.26	
Asian	0.00	0.13	0.00
Native American	70.40	0.07	
Minority Total	77.64	25.06	
Nonminority female	0.00	35.94	0.00 ***
DBE Total	77.64	61.00	
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	2.70	0.00 ***
Hispanic	0.00	0.52	0.00
Asian	0.00	6.67	0.00 ***
Native American	0.00	0.52	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	10.41	0.00 ***
Nonminority female	0.00	28.43	0.00 ***
DBE Total	0.00	38.83	0.00 ***
Building Finishing Contractors (NAICS 2383)			
African American	0.00	9.55	0.00 ***
Hispanic	0.00	1.27	0.00
Asian	0.00	1.27	0.00
Native American	0.00	0.12	0.00
Minority Total	0.00	12.22	0.00 ***
Nonminority female	3.40	7.68	44.30
DBE Total	3.40	19.90	17.10 **
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	6.86	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.15	0.00
Minority Total	0.00	8.68	0.00 ***
Nonminority female	2.25	13.94	16.13 **
DBE Total	2.25	22.62	9.94 ***
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	13.61	12.56	
Hispanic	0.00	1.68	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.21	0.00
Minority Total	13.61	14.45	94.21
Nonminority female	0.00	19.53	0.00 ***
DBE Total	13.61	33.97	40.06 **
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	7.93	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.49	0.00
Native American	0.00	0.65	0.00
Minority Total	0.00	10.07	0.00 ***
Nonminority female	0.00	22.16	0.00 ***
DBE Total	0.00	32.23	0.00 ***
General Freight Trucking (NAICS 4841)			
African American	0.00	8.71	0.00
Hispanic	0.00	0.05	0.00
Asian	0.00	2.99	0.00
Native American	0.00	0.02	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	11.77	0.00 ***
Nonminority female	0.00	26.61	0.00 ***
DBE Total	0.00	38.38	0.00 ***
Boiler, Tank, and Shipping Container Manufacturing (NAICS 3324)			
African American	0.00	2.48	0.00
Hispanic	0.00	0.32	0.00
Asian	0.00	0.00	
Native American	0.00	0.32	0.00
Minority Total	0.00	3.13	0.00
Nonminority female	0.00	20.55	0.00
DBE Total	0.00	23.68	0.00
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.00	4.95	0.00 ***
Hispanic	0.00	0.70	0.00
Asian	0.00	0.95	0.00
Native American	0.00	0.70	0.00
Minority Total	0.00	7.29	0.00 ***
Nonminority female	0.00	15.20	0.00 ***
DBE Total	0.00	22.49	0.00 ***
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	4.72	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.63	0.00 ***
Native American	0.00	0.08	0.00
Minority Total	0.00	6.44	0.00 ***
Nonminority female	0.00	12.30	0.00 ***
DBE Total	0.00	18.73	0.00 ***
Nonmetallic Mineral Mining and Quarrying (NAICS 2123)			
African American	0.00	9.69	0.00
Hispanic	0.00	4.26	0.00
Asian	0.00	8.25	0.00
Native American	0.00	1.59	0.00
Minority Total	0.00	23.79	0.00
Nonminority female	0.00	16.85	0.00
DBE Total	0.00	40.64	0.00
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	99.49	5.46	
Hispanic	0.00	0.00	
Asian	0.00	1.66	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

<b>NAICS Industry Group / DBE Type</b>	<b>Utilization (%)</b>	<b>Availability (%)</b>	<b>Disparity Ratio</b>
Native American	0.00	0.16	0.00
Minority Total	99.49	7.28	
Nonminority female	0.00	14.86	0.00 ***
DBE Total	99.49	22.13	

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.3. Industry Group Utilization, Availability, and Disparity Results for JMAA Construction Contracting (Federally-Funded) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.00	4.85	0.00
Hispanic	0.00	0.92	0.00
Asian	0.00	0.84	0.00
Native American	0.00	2.29	0.00
Minority	0.00	8.90	0.00 ***
Nonminority female	5.34	13.45	39.71
DBE total	5.34	22.35	23.90
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	3.38	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	3.38	0.00
Nonminority female	0.00	16.60	0.00 ***
DBE total	0.00	19.98	0.00 ***
Other Specialty Trade Contractors (NAICS 2389)			
African American	96.36	11.65	
Hispanic	0.00	1.65	0.00
Asian	0.00	1.39	0.00
Native American	0.00	0.45	0.00
Minority	96.36	15.13	
Nonminority female	0.00	10.42	0.00
DBE total	96.36	25.56	
Building Equipment Contractors (NAICS 2382)			
African American	19.17	9.42	
Hispanic	0.00	1.47	0.00
Asian	0.00	1.34	0.00
Native American	0.00	0.09	0.00
Minority	19.17	12.32	
Nonminority female	17.70	8.41	
DBE total	36.87	20.73	
Nonresidential Building Construction (NAICS 2362)			
African American	4.51	11.05	40.82
Hispanic	0.00	1.34	0.00
Asian	0.00	0.69	0.00
Native American	0.00	1.82	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority	4.51	14.91	30.26
Nonminority female	0.00	9.45	0.00
DBE total	4.51	24.36	18.52
Utility System Construction (NAICS 2371)			
African American	65.88	2.56	
Hispanic	0.00	0.41	0.00
Asian	0.00	1.38	0.00
Native American	0.00	0.00	
Minority	65.88	4.34	
Nonminority female	0.00	12.31	0.00
DBE total	65.88	16.66	
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	2.70	0.00
Hispanic	0.00	0.52	0.00
Asian	0.00	6.67	0.00
Native American	0.00	0.52	0.00
Minority	0.00	10.41	0.00
Nonminority female	0.00	28.43	0.00
DBE total	0.00	38.83	0.00
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	7.81	0.00
Hispanic	0.00	1.28	0.00
Asian	0.00	1.28	0.00
Native American	0.00	0.00	
Minority	0.00	10.37	0.00
Nonminority female	0.00	8.58	0.00
DBE total	0.00	18.95	0.00 ***
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	7.93	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.49	0.00
Native American	0.00	0.65	0.00
Minority	0.00	10.07	0.00
Nonminority female	0.00	22.16	0.00 ***
DBE total	0.00	32.23	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.4. Industry Group Utilization, Availability, and Disparity Results for JMAA Construction Contracting (Federally-Funded) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	0.00	4.85	0.00
Hispanic	0.00	0.92	0.00
Asian	0.00	0.84	0.00
Native American	0.00	2.29	0.00
Minority	0.00	8.90	0.00 ***
Nonminority female	14.47	13.45	
DBE total	14.47	22.35	64.71
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	3.38	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	3.38	0.00
Nonminority female	0.00	16.60	0.00 ***
DBE total	0.00	19.98	0.00 ***
Other Specialty Trade Contractors (NAICS 2389)			
African American	96.76	11.65	
Hispanic	0.00	1.65	0.00
Asian	0.00	1.39	0.00
Native American	0.00	0.45	0.00
Minority	96.76	15.13	
Nonminority female	0.00	10.42	0.00
DBE total	96.76	25.56	
Building Equipment Contractors (NAICS 2382)			
African American	37.75	9.42	
Hispanic	0.00	1.47	0.00
Asian	0.00	1.34	0.00
Native American	0.00	0.08	0.00
Minority	37.75	12.31	
Nonminority female	34.60	8.34	
DBE total	72.34	20.65	
Nonresidential Building Construction (NAICS 2362)			
African American	4.51	11.05	40.82
Hispanic	0.00	1.34	0.00
Asian	0.00	0.69	0.00
Native American	0.00	1.82	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority	4.51	14.91	30.26
Nonminority female	0.00	9.45	0.00
DBE total	4.51	24.36	18.52
Utility System Construction (NAICS 2371)			
African American	53.68	2.56	
Hispanic	0.00	0.41	0.00
Asian	0.00	1.38	0.00
Native American	0.00	0.00	
Minority	53.68	4.34	
Nonminority female	0.00	12.31	0.00
DBE total	53.68	16.66	
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	2.70	0.00
Hispanic	0.00	0.52	0.00
Asian	0.00	6.67	0.00
Native American	0.00	0.52	0.00
Minority	0.00	10.41	0.00
Nonminority female	0.00	28.43	0.00
DBE total	0.00	38.83	0.00
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	7.81	0.00
Hispanic	0.00	1.28	0.00
Asian	0.00	1.28	0.00
Native American	0.00	0.00	
Minority	0.00	10.37	0.00
Nonminority female	0.00	8.58	0.00
DBE total	0.00	18.95	0.00 ***
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	7.93	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.49	0.00
Native American	0.00	0.65	0.00
Minority	0.00	10.07	0.00
Nonminority female	0.00	22.16	0.00 ***
DBE total	0.00	32.23	0.00 ***
General Freight Trucking (NAICS 4841)			
African American	0.00	8.71	0.00
Hispanic	0.00	0.05	0.00
Asian	0.00	2.99	0.00
Native American	0.00	0.02	0.00
Minority	0.00	11.77	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

<b>NAICS Industry Group / DBE Type</b>	<b>Utilization (%)</b>	<b>Availability (%)</b>	<b>Disparity Ratio</b>
Nonminority female	0.00	26.61	0.00 ***
DBE total	0.00	38.38	0.00 ***
Nonmetallic Mineral Mining and Quarrying (NAICS 2123)			
African American	0.00	9.69	0.00
Hispanic	0.00	4.26	0.00
Asian	0.00	8.25	0.00
Native American	0.00	1.59	0.00
Minority	0.00	23.79	0.00
Nonminority female	0.00	16.85	0.00
DBE total	0.00	40.64	0.00

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.5. Industry Group Utilization, Availability, and Disparity Results for JMAA Construction Contracting (Locally-Funded) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Nonresidential Building Construction (NAICS 2362)			
African American	40.63	11.05	
Hispanic	0.00	1.34	0.00 ***
Asian	0.00	0.69	0.00 ***
Native American	0.00	1.82	0.00 ***
Minority	40.63	14.91	
Nonminority female	0.00	9.45	0.00 ***
DBE total	40.63	24.36	
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	1.56	8.50	18.36
Hispanic	0.00	1.29	0.00 ***
Asian	0.00	1.28	0.00 ***
Native American	0.00	0.01	0.00
Minority	1.56	11.09	14.07
Nonminority female	0.00	8.01	0.00 ***
DBE total	1.56	19.09	8.17
Other Specialty Trade Contractors (NAICS 2389)			
African American	0.00	11.32	0.00 ***
Hispanic	0.00	1.61	0.00
Asian	0.00	1.39	0.00
Native American	0.00	0.39	0.00
Minority	0.00	14.72	0.00 ***
Nonminority female	3.56	10.06	35.39
DBE total	3.56	24.78	14.37
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	1.21	5.02	24.19
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.19	0.00
Minority	1.21	6.89	17.64
Nonminority female	0.00	15.77	0.00 ***
DBE total	1.21	22.66	5.36 ***
Highway, Street, and Bridge Construction (NAICS 2373)			
African American	44.63	4.85	
Hispanic	0.00	0.92	0.00
Asian	0.00	0.84	0.00
Native American	0.00	2.29	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority	44.63	8.90	
Nonminority female	4.28	13.45	31.82
DBE total	48.91	22.35	
Building Equipment Contractors (NAICS 2382)			
African American	14.47	9.36	
Hispanic	0.00	1.49	0.00 ***
Asian	0.00	1.32	0.00 ***
Native American	0.00	0.08	0.00
Minority	14.47	12.26	
Nonminority female	23.70	7.95	
DBE total	38.17	20.20	
Utility System Construction (NAICS 2371)			
African American	90.36	2.56	
Hispanic	0.00	0.41	0.00
Asian	0.00	1.38	0.00
Native American	0.00	0.00	
Minority	90.36	4.34	
Nonminority female	0.00	12.31	0.00 ***
DBE total	90.36	16.66	
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	24.60	0.00 ***
Hispanic	7.42	0.26	
Asian	0.00	0.13	0.00
Native American	72.11	0.07	
Minority	79.53	25.06	
Nonminority female	0.00	35.94	0.00 ***
DBE total	79.53	61.00	
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	13.72	13.20	
Hispanic	0.00	1.63	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.15	0.00
Minority	13.72	14.99	91.54
Nonminority female	0.00	18.67	0.00 ***
DBE total	13.72	33.66	40.76 *
Building Finishing Contractors (NAICS 2383)			
African American	0.00	9.55	0.00 ***
Hispanic	0.00	1.27	0.00
Asian	0.00	1.27	0.00
Native American	0.00	0.12	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority	0.00	12.22	0.00 ***
Nonminority female	3.40	7.68	44.30
DBE total	3.40	19.90	17.10 **
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	6.86	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.15	0.00
Minority	0.00	8.68	0.00 ***
Nonminority female	2.39	13.94	17.13
DBE total	2.39	22.62	10.56 ***
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.29	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	2.29	0.00
Nonminority female	0.00	24.57	0.00 ***
DBE total	0.00	26.86	0.00 ***
Boiler, Tank, and Shipping Container Manufacturing (NAICS 3324)			
African American	0.00	2.48	0.00
Hispanic	0.00	0.32	0.00
Asian	0.00	0.00	
Native American	0.00	0.32	0.00
Minority	0.00	3.13	0.00
Nonminority female	0.00	20.55	0.00
DBE total	0.00	23.68	0.00
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.00	4.95	0.00 ***
Hispanic	0.00	0.70	0.00
Asian	0.00	0.95	0.00
Native American	0.00	0.70	0.00
Minority	0.00	7.29	0.00 ***
Nonminority female	0.00	15.20	0.00 ***
DBE total	0.00	22.49	0.00 ***
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	4.72	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.63	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.08	0.00
Minority	0.00	6.44	0.00 ***
Nonminority female	0.00	12.30	0.00 ***
DBE total	0.00	18.73	0.00 ***
General Freight Trucking (NAICS 4841)			
African American	0.00	8.71	0.00
Hispanic	0.00	0.05	0.00
Asian	0.00	2.99	0.00
Native American	0.00	0.02	0.00
Minority	0.00	11.77	0.00
Nonminority female	0.00	26.61	0.00 ***
DBE total	0.00	38.38	0.00 ***
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	4.89	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.04	0.00
Minority	0.00	6.57	0.00 ***
Nonminority female	0.00	11.48	0.00 ***
DBE total	0.00	18.06	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.6. Industry Group Utilization, Availability, and Disparity Results for JMAA Construction Contracting (Locally-Funded) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Nonresidential Building Construction (NAICS 2362)</b>			
African American	40.56	11.05	
Hispanic	0.00	1.34	0.00 ***
Asian	0.00	0.69	0.00 ***
Native American	0.00	1.82	0.00 ***
Minority	40.56	14.91	
Nonminority female	0.00	9.45	0.00 ***
DBE total	40.56	24.36	
<b>Other Specialty Trade Contractors (NAICS 2389)</b>			
African American	0.00	11.34	0.00 ***
Hispanic	0.00	1.61	0.00
Asian	0.00	1.39	0.00
Native American	0.00	0.40	0.00
Minority	0.00	14.74	0.00 ***
Nonminority female	3.45	10.09	34.19
DBE total	3.45	24.83	13.89
<b>Foundation, Structure, and Building Exterior Contractors (NAICS 2381)</b>			
African American	1.43	8.49	16.80
Hispanic	0.00	1.29	0.00 ***
Asian	0.00	1.28	0.00 ***
Native American	0.00	0.01	0.00
Minority	1.43	11.08	12.87
Nonminority female	0.00	8.00	0.00 ***
DBE total	1.43	19.08	7.48
<b>Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)</b>			
African American	1.21	5.02	24.19
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.19	0.00
Minority	1.21	6.89	17.64
Nonminority female	0.00	15.77	0.00 ***
DBE total	1.21	22.66	5.36 ***
<b>Highway, Street, and Bridge Construction (NAICS 2373)</b>			
African American	43.86	4.85	
Hispanic	0.00	0.92	0.00
Asian	0.00	0.84	0.00
Native American	0.00	2.29	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority	43.86	8.90	
Nonminority female	5.14	13.45	38.18
DBE total	49.00	22.35	
Building Equipment Contractors (NAICS 2382)			
African American	14.75	9.36	
Hispanic	0.00	1.49	0.00 ***
Asian	0.00	1.32	0.00 ***
Native American	0.00	0.08	0.00
Minority	14.75	12.25	
Nonminority female	24.15	7.93	
DBE total	38.90	20.19	
Utility System Construction (NAICS 2371)			
African American	90.36	2.56	
Hispanic	0.00	0.41	0.00
Asian	0.00	1.38	0.00
Native American	0.00	0.00	
Minority	90.36	4.34	
Nonminority female	0.00	12.31	0.00 ***
DBE total	90.36	16.66	
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	24.60	0.00 ***
Hispanic	7.42	0.26	
Asian	0.00	0.13	0.00
Native American	72.11	0.07	
Minority	79.53	25.06	
Nonminority female	0.00	35.94	0.00 ***
DBE total	79.53	61.00	
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	13.90	13.21	
Hispanic	0.00	1.63	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.15	0.00
Minority	13.90	14.99	92.69
Nonminority female	0.00	18.66	0.00 ***
DBE total	13.90	33.65	41.30
Building Finishing Contractors (NAICS 2383)			
African American	0.00	9.55	0.00 ***
Hispanic	0.00	1.27	0.00
Asian	0.00	1.27	0.00
Native American	0.00	0.12	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority	0.00	12.22	0.00 ***
Nonminority female	3.40	7.68	44.30
DBE total	3.40	19.90	17.10 **
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	6.86	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.15	0.00
Minority	0.00	8.68	0.00 ***
Nonminority female	2.39	13.94	17.13
DBE total	2.39	22.62	10.56 ***
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.29	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	2.29	0.00
Nonminority female	0.00	24.57	0.00 ***
DBE total	0.00	26.86	0.00 ***
Boiler, Tank, and Shipping Container Manufacturing (NAICS 3324)			
African American	0.00	2.48	0.00
Hispanic	0.00	0.32	0.00
Asian	0.00	0.00	
Native American	0.00	0.32	0.00
Minority	0.00	3.13	0.00
Nonminority female	0.00	20.55	0.00
DBE total	0.00	23.68	0.00
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.00	4.95	0.00 ***
Hispanic	0.00	0.70	0.00
Asian	0.00	0.95	0.00
Native American	0.00	0.70	0.00
Minority	0.00	7.29	0.00 ***
Nonminority female	0.00	15.20	0.00 ***
DBE total	0.00	22.49	0.00 ***
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	4.72	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.63	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.08	0.00
Minority	0.00	6.44	0.00 ***
Nonminority female	0.00	12.30	0.00 ***
DBE total	0.00	18.73	0.00 ***
General Freight Trucking (NAICS 4841)			
African American	0.00	8.71	0.00
Hispanic	0.00	0.05	0.00
Asian	0.00	2.99	0.00
Native American	0.00	0.02	0.00
Minority	0.00	11.77	0.00
Nonminority female	0.00	26.61	0.00 ***
DBE total	0.00	38.38	0.00 ***
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	4.89	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.04	0.00
Minority	0.00	6.57	0.00 ***
Nonminority female	0.00	11.48	0.00 ***
DBE total	0.00	18.06	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.7. Industry Group Utilization, Availability, and Disparity Results for JMAA AE-CRS Contracting (All Funds) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	17.76	10.31	
Hispanic	1.94	1.63	
Asian	0.00	0.57	0.00 **
Native American	0.25	0.47	53.18
Minority Total	19.94	12.99	
Nonminority female	0.08	17.73	0.48 ***
DBE Total	20.03	30.71	65.21
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	27.23	13.73	
Hispanic	0.00	1.65	0.00 ***
Asian	0.00	0.05	0.00
Native American	0.00	0.17	0.00
Minority Total	27.23	15.61	
Nonminority female	14.44	18.06	79.93
DBE Total	41.66	33.67	
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	9.15	12.35	74.10
Hispanic	0.00	1.51	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	9.15	13.86	66.02
Nonminority female	0.00	18.07	0.00 ***
DBE Total	9.15	31.93	28.66 ***
Museums, Historical Sites, and Similar Institutions (NAICS 7121)			
African American	0.00	9.19	0.00
Hispanic	0.00	4.38	0.00
Asian	0.00	8.76	0.00
Native American	0.00	1.46	0.00
Minority Total	0.00	23.80	0.00 ***
Nonminority female	0.00	11.86	0.00
DBE Total	0.00	35.65	0.00 ***
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	21.21	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	

## Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	21.21	0.00 ***
Nonminority female	0.00	41.51	0.00 ***
DBE Total	0.00	62.72	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.8. Industry Group Utilization, Availability, and Disparity Results for JMAA AE-CRS Contracting (All Funds) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	18.04	10.38	
Hispanic	2.10	1.64	
Asian	0.00	0.58	0.00 **
Native American	0.22	0.47	45.96
Minority Total	20.35	13.07	
Nonminority female	0.09	17.65	0.52 ***
DBE Total	20.44	30.72	66.55
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	24.04	13.80	
Hispanic	0.00	1.64	0.00 ***
Asian	0.00	0.06	0.00
Native American	0.00	0.16	0.00
Minority Total	24.04	15.66	
Nonminority female	16.14	17.87	90.33
DBE Total	40.18	33.53	
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	10.46	12.35	84.68
Hispanic	0.00	1.51	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	10.46	13.86	75.44
Nonminority female	0.00	18.07	0.00 ***
DBE Total	10.46	31.93	32.75 ***
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	21.21	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	21.21	0.00 ***
Nonminority female	0.00	41.51	0.00 ***
DBE Total	0.00	62.72	0.00 ***
Museums, Historical Sites, and Similar Institutions (NAICS 7121)			
African American	0.00	9.19	0.00
Hispanic	0.00	4.38	0.00
Asian	0.00	8.76	0.00
Native American	0.00	1.46	0.00

## Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	23.80	0.00 ***
Nonminority female	0.00	11.86	0.00
DBE Total	0.00	35.65	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.9. Industry Group Utilization, Availability, and Disparity Results for JMAA AE-CRS Contracting (Federally-Funded) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	20.06	10.42	
Hispanic	2.46	1.65	
Asian	0.00	0.59	0.00
Native American	0.00	0.48	0.00
Minority	22.52	13.13	
Nonminority female	0.00	17.59	0.00 ***
DBE total	22.52	30.72	73.31
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	21.67	14.12	
Hispanic	0.00	1.67	0.00
Asian	0.00	0.06	0.00
Native American	0.00	0.20	0.00
Minority	21.67	16.06	
Nonminority female	16.64	17.78	93.59
DBE total	38.31	33.85	
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	7.00	12.35	56.65
Hispanic	0.00	1.51	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	7.00	13.86	50.48
Nonminority female	0.00	18.07	0.00 ***
DBE total	7.00	31.93	21.91 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.10. Industry Group Utilization, Availability, and Disparity Results for JMAA AE-CRS Contracting (Federally-Funded) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	20.02	10.47	
Hispanic	2.64	1.65	
Asian	0.00	0.60	0.00
Native American	0.00	0.48	0.00
Minority	22.66	13.21	
Nonminority female	0.00	17.52	0.00 ***
DBE total	22.66	30.73	73.74
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	17.05	14.27	
Hispanic	0.00	1.67	0.00
Asian	0.00	0.07	0.00
Native American	0.00	0.19	0.00
Minority	17.05	16.20	
Nonminority female	18.82	17.50	
DBE total	35.87	33.71	
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	8.67	12.35	70.18
Hispanic	0.00	1.51	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	8.67	13.86	62.53
Nonminority female	0.00	18.07	0.00 ***
DBE total	8.67	31.93	27.14 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.11. Industry Group Utilization, Availability, and Disparity Results for JMAA AE-CRS Contracting (Locally-Funded) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	9.23	9.96	92.70
Hispanic	0.00	1.58	0.00 ***
Asian	0.00	0.49	0.00
Native American	1.17	0.43	
Minority	10.40	12.46	83.46
Nonminority female	0.40	18.23	2.18 ***
DBE total	10.80	30.69	35.18 ***
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	63.58	12.06	
Hispanic	0.00	1.55	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.06	0.00
Minority	63.58	13.67	
Nonminority female	0.00	19.35	0.00 ***
DBE total	63.58	33.03	
Museums, Historical Sites, and Similar Institutions (NAICS 7121)			
African American	0.00	9.19	0.00
Hispanic	0.00	4.38	0.00
Asian	0.00	8.76	0.00
Native American	0.00	1.46	0.00
Minority	0.00	23.80	0.00 ***
Nonminority female	0.00	11.86	0.00
DBE total	0.00	35.65	0.00 ***
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	21.21	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	21.21	0.00 ***
Nonminority female	0.00	41.51	0.00 ***
DBE total	0.00	62.72	0.00 ***
Office Furniture (including Fixtures) Manufacturing (NAICS 3372)			
African American	0.00	3.28	0.00
Hispanic	0.00	0.34	0.00
Asian	0.00	0.00	
Native American	0.00	0.34	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority	0.00	3.97	0.00
Nonminority female	0.00	30.80	0.00 ***
DBE total	0.00	34.78	0.00 ***
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	9.11	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	10.70	0.00 ***
Nonminority female	0.00	18.25	0.00 ***
DBE total	0.00	28.95	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.12. Industry Group Utilization, Availability, and Disparity Results for JMAA AE-CRS Contracting (Locally-Funded) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	10.36	10.03	
Hispanic	0.00	1.59	0.00 ***
Asian	0.00	0.51	0.00
Native American	1.06	0.44	
Minority	11.42	12.56	90.88
Nonminority female	0.45	18.15	2.45 ***
DBE total	11.86	30.71	38.63 **
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	66.12	12.02	
Hispanic	0.00	1.54	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.05	0.00
Minority	66.12	13.62	
Nonminority female	0.00	19.34	0.00 ***
DBE total	66.12	32.96	
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	21.21	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	21.21	0.00 ***
Nonminority female	0.00	41.51	0.00 ***
DBE total	0.00	62.72	0.00 ***
Museums, Historical Sites, and Similar Institutions (NAICS 7121)			
African American	0.00	9.19	0.00
Hispanic	0.00	4.38	0.00
Asian	0.00	8.76	0.00
Native American	0.00	1.46	0.00
Minority	0.00	23.80	0.00 ***
Nonminority female	0.00	11.86	0.00
DBE total	0.00	35.65	0.00 ***
Office Furniture (including Fixtures) Manufacturing (NAICS 3372)			
African American	0.00	3.28	0.00
Hispanic	0.00	0.34	0.00
Asian	0.00	0.00	
Native American	0.00	0.34	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority	0.00	3.97	0.00
Nonminority female	0.00	30.80	0.00 ***
DBE total	0.00	34.78	0.00 ***
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	9.11	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	10.70	0.00 ***
Nonminority female	0.00	18.25	0.00 ***
DBE total	0.00	28.95	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.13. Industry Group Utilization, Availability, and Disparity Results for JMAA Services Contracting (All Funds) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Other Personal Services (NAICS 8129)</b>			
African American	20.00	20.56	97.30
Hispanic	0.00	1.58	0.00
Asian	0.00	1.21	0.00
Native American	0.00	1.21	0.00
Minority Total	20.00	24.56	81.44
Nonminority female	0.00	8.48	0.00 ***
DBE Total	20.00	33.03	60.54
<b>Management, Scientific, and Technical Consulting Services (NAICS 5416)</b>			
African American	14.62	12.89	
Hispanic	7.89	1.68	
Asian	0.00	0.04	0.00
Native American	0.00	0.24	0.00
Minority Total	22.51	14.85	
Nonminority female	53.29	19.32	
DBE Total	75.80	34.17	
<b>Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)</b>			
African American	88.95	7.71	
Hispanic	0.00	0.00	
Asian	0.00	0.21	0.00
Native American	0.00	0.00	
Minority Total	88.95	7.92	
Nonminority female	0.00	11.48	0.00 ***
DBE Total	88.95	19.40	
<b>Legal Services (NAICS 5411)</b>			
African American	14.87	9.55	
Hispanic	0.00	1.58	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.08	0.00
Minority Total	14.87	11.22	
Nonminority female	2.36	17.69	13.36 ***
DBE Total	17.24	28.90	59.63
<b>Computer Systems Design and Related Services (NAICS 5415)</b>			
African American	0.00	15.01	0.00 ***
Hispanic	0.00	1.90	0.00
Asian	0.00	1.21	0.00
Native American	0.00	0.60	0.00
Minority Total	0.00	18.72	0.00 ***
Nonminority female	0.00	22.05	0.00 ***
DBE Total	0.00	40.77	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Scientific Research and Development Services (NAICS 5417)			
African American	6.83	12.02	56.81
Hispanic	0.00	1.44	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	6.83	13.47	50.72
Nonminority female	0.00	20.56	0.00 ***
DBE Total	6.83	34.03	20.07
Other Specialty Trade Contractors (NAICS 2389)			
African American	99.89	9.69	
Hispanic	0.00	1.41	0.00
Asian	0.00	1.41	0.00
Native American	0.00	0.11	0.00
Minority Total	99.89	12.62	
Nonminority female	0.00	8.27	0.00 ***
DBE Total	99.89	20.89	
Performing Arts Companies (NAICS 7111)			
African American	10.01	12.28	81.53
Hispanic	0.00	3.94	0.00 ***
Asian	0.00	7.28	0.00 ***
Native American	0.00	1.72	0.00 ***
Minority Total	10.01	25.23	39.69 **
Nonminority female	0.00	24.26	0.00 ***
DBE Total	10.01	49.48	20.23 ***
Offices of Real Estate Agents and Brokers (NAICS 5312)			
African American	0.00	22.29	0.00 ***
Hispanic	0.00	0.15	0.00
Asian	0.00	0.04	0.00
Native American	0.00	0.04	0.00
Minority Total	0.00	22.52	0.00 ***
Nonminority female	0.00	40.10	0.00 ***
DBE Total	0.00	62.62	0.00 ***
Office Administrative Services (NAICS 5611)			
African American	0.00	24.27	0.00 ***
Hispanic	0.00	0.39	0.00
Asian	0.00	0.26	0.00
Native American	0.00	0.13	0.00
Minority Total	0.00	25.05	0.00 ***
Nonminority female	0.00	35.44	0.00 ***
DBE Total	0.00	60.49	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Building Equipment Contractors (NAICS 2382)</b>			
African American	44.09	9.40	
Hispanic	0.00	1.48	0.00 ***
Asian	0.00	1.33	0.00 ***
Native American	0.00	0.08	0.00
Minority Total	44.09	12.29	
Nonminority female	0.22	8.19	2.72 ***
DBE Total	44.31	20.48	
<b>Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance (NAICS 8113)</b>			
African American	0.00	17.28	0.00 ***
Hispanic	0.00	1.25	0.00 ***
Asian	0.00	1.47	0.00 ***
Native American	0.00	1.60	0.00 ***
Minority Total	0.00	21.60	0.00 ***
Nonminority female	39.77	9.49	
DBE Total	39.77	31.08	
<b>Software Publishers (NAICS 5112)</b>			
African American	0.00	22.63	0.00 ***
Hispanic	0.00	1.23	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.87	0.00 ***
Nonminority female	0.00	38.10	0.00 ***
DBE Total	0.00	61.97	0.00 ***
<b>Lawn and Garden Equipment and Supplies Stores (NAICS 4442)</b>			
African American	0.00	7.43	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.04	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	10.47	0.00 ***
Nonminority female	0.00	29.83	0.00 ***
DBE Total	0.00	40.30	0.00 ***
<b>Specialized Design Services (NAICS 5414)</b>			
African American	0.00	11.28	0.00 ***
Hispanic	0.00	1.97	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	13.25	0.00 ***
Nonminority female	0.00	21.47	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE Total	0.00	34.72	0.00 ***
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.00	8.99	0.00 ***
Hispanic	0.00	1.58	0.00
Asian	0.00	0.00	
Native American	0.00	0.06	0.00
Minority Total	0.00	10.63	0.00 ***
Nonminority female	6.75	19.36	34.86
DBE Total	6.75	29.99	22.50
Services to Buildings and Dwellings (NAICS 5617)			
African American	3.12	24.99	12.48 **
Hispanic	0.00	0.33	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.04	0.00
Minority Total	3.12	25.50	12.23 **
Nonminority female	14.58	36.56	39.89
DBE Total	17.70	62.06	28.52 **
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)			
African American	86.90	22.16	
Hispanic	0.00	0.30	0.00 ***
Asian	0.00	0.30	0.00 ***
Native American	0.00	0.00	
Minority Total	86.90	22.75	
Nonminority female	0.00	40.45	0.00 ***
DBE Total	86.90	63.20	
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	8.13	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.95	0.00 ***
Native American	60.94	0.00	
Minority Total	60.94	11.08	
Nonminority female	0.00	27.24	0.00 ***
DBE Total	60.94	38.32	
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	24.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	24.79	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Nonminority female	0.00	37.04	0.00 ***
DBE Total	0.00	61.83	0.00 ***
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	9.11	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	10.70	0.00 ***
Nonminority female	11.01	18.25	60.32
DBE Total	11.01	28.95	38.03
Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139)			
African American	0.00	17.12	0.00 ***
Hispanic	0.00	1.28	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.26	0.00
Minority Total	0.00	20.93	0.00 ***
Nonminority female	0.00	8.83	0.00 ***
DBE Total	0.00	29.76	0.00 ***
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	7.75	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.23	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	10.98	0.00 ***
Nonminority female	0.00	28.13	0.00 ***
DBE Total	0.00	39.12	0.00 ***
Investigation and Security Services (NAICS 5616)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	1.16	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.58	0.00
Minority Total	0.00	25.32	0.00 ***
Nonminority female	0.00	36.45	0.00 ***
DBE Total	0.00	61.77	0.00 ***
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	8.82	0.00 ***
Hispanic	0.00	0.46	0.00
Asian	0.00	0.00	
Native American	0.00	0.46	0.00

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NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	9.74	0.00 ***
Nonminority female	0.00	9.96	0.00 ***
DBE Total	0.00	19.70	0.00 ***
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	11.46	0.00 ***
Hispanic	0.00	1.59	0.00 ***
Asian	0.00	0.25	0.00
Native American	0.00	0.84	0.00 **
Minority Total	0.00	14.13	0.00 ***
Nonminority female	39.59	17.32	
DBE Total	39.59	31.46	
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	24.94	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	24.94	0.00 ***
Nonminority female	0.00	36.11	0.00 ***
DBE Total	0.00	61.05	0.00 ***
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.29	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	2.29	0.00 ***
Nonminority female	0.00	24.57	0.00 ***
DBE Total	0.00	26.86	0.00 ***
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	7.13	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	7.13	0.00 ***
Nonminority female	0.00	16.88	0.00 ***
DBE Total	0.00	24.01	0.00 ***
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	10.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.66	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.74	0.00 ***
Minority Total	0.00	13.06	0.00 ***
Nonminority female	0.00	21.47	0.00 ***
DBE Total	0.00	34.53	0.00 ***
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)			
African American	0.00	17.32	0.00 ***
Hispanic	0.00	1.58	0.00
Asian	0.00	1.27	0.00
Native American	0.00	1.20	0.00
Minority Total	0.00	21.36	0.00 ***
Nonminority female	0.00	9.96	0.00
DBE Total	0.00	31.32	0.00 ***
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	0.00	5.22	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.73	0.00 ***
Native American	0.00	1.65	0.00 ***
Minority Total	0.00	8.60	0.00 ***
Nonminority female	62.14	17.27	
DBE Total	62.14	25.87	
Other Schools and Instruction (NAICS 6116)			
African American	0.00	12.44	0.00 ***
Hispanic	0.00	4.03	0.00
Asian	0.00	7.86	0.00 ***
Native American	0.00	1.78	0.00
Minority Total	0.00	26.11	0.00 ***
Nonminority female	0.00	18.86	0.00 ***
DBE Total	0.00	44.97	0.00 ***
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	5.56	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.04	0.00 ***
Native American	0.00	0.16	0.00
Minority Total	0.00	7.77	0.00 ***
Nonminority female	0.00	15.81	0.00 ***
DBE Total	0.00	23.57	0.00 ***
Support Activities for Air Transportation (NAICS 4881)			
African American	0.00	9.07	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	5.09	0.00
Native American	0.00	0.00	
Minority Total	0.00	14.16	0.00 ***
Nonminority female	0.00	25.35	0.00 ***
DBE Total	0.00	39.50	0.00 ***
Engine, Turbine, and Power Transmission Equipment Manufacturing (NAICS 3336)			
African American	0.00	5.08	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	5.08	0.00
Nonminority female	0.00	10.16	0.00 ***
DBE Total	0.00	15.24	0.00 ***
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)			
African American	0.00	23.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.65	0.00 ***
Nonminority female	0.00	36.25	0.00 ***
DBE Total	0.00	59.89	0.00 ***
Drycleaning and Laundry Services (NAICS 8123)			
African American	13.28	16.42	80.85
Hispanic	0.00	1.14	0.00 ***
Asian	0.00	2.12	0.00 ***
Native American	0.00	1.34	0.00 ***
Minority Total	13.28	21.02	63.15
Nonminority female	0.00	12.51	0.00 ***
DBE Total	13.28	33.53	39.60 *
Other Support Services (NAICS 5619)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	0.01	0.00
Asian	0.00	0.02	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.61	0.00 ***
Nonminority female	0.00	35.40	0.00 ***
DBE Total	0.00	59.00	0.00 ***
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	9.03	0.00 ***
Hispanic	0.00	1.29	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	1.29	0.00 ***
Native American	0.00	0.02	0.00
Minority Total	0.00	11.62	0.00 ***
Nonminority female	2.19	7.27	30.18
DBE Total	2.19	18.89	11.61
Building Material and Supplies Dealers (NAICS 4441)			
African American	0.00	7.61	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.01	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	10.62	0.00 ***
Nonminority female	0.00	27.69	0.00 ***
DBE Total	0.00	38.31	0.00 ***
Activities Related to Real Estate (NAICS 5313)			
African American	0.00	22.71	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.31	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.02	0.00
Nonminority female	0.00	39.73	0.00 ***
DBE Total	0.00	62.75	0.00 ***
Facilities Support Services (NAICS 5612)			
African American	0.00	22.74	0.00 ***
Hispanic	0.00	3.92	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	26.66	0.00 ***
Nonminority female	0.00	36.14	0.00 ***
DBE Total	0.00	62.80	0.00 ***
Motion Picture and Video Industries (NAICS 5121)			
African American	48.30	26.31	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	48.30	26.31	
Nonminority female	0.00	35.49	0.00 ***
DBE Total	48.30	61.80	78.15 ***
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	19.12	8.38	
Hispanic	0.00	2.19	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.00	
Native American	0.00	0.96	0.00 ***
Minority Total	19.12	11.54	
Nonminority female	0.00	31.38	0.00 ***
DBE Total	19.12	42.92	44.56 **
Support Activities for Road Transportation (NAICS 4884)			
African American	0.00	8.19	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.98	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	11.17	0.00 ***
Nonminority female	0.00	27.84	0.00 ***
DBE Total	0.00	39.01	0.00 ***
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	4.87	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.69	0.00
Native American	0.00	0.10	0.00
Minority Total	0.00	6.65	0.00 ***
Nonminority female	0.00	12.96	0.00 ***
DBE Total	0.00	19.62	0.00 ***
Audio and Video Equipment Manufacturing (NAICS 3343)			
African American	0.00	3.54	0.00
Hispanic	0.00	0.80	0.00
Asian	0.00	0.00	
Native American	0.00	0.80	0.00
Minority Total	0.00	5.14	0.00
Nonminority female	0.00	14.37	0.00
DBE Total	0.00	19.51	0.00
Nonresidential Building Construction (NAICS 2362)			
African American	100.00	11.05	
Hispanic	0.00	1.34	0.00 ***
Asian	0.00	0.69	0.00 ***
Native American	0.00	1.82	0.00 ***
Minority Total	100.00	14.91	
Nonminority female	0.00	9.45	0.00 ***
DBE Total	100.00	24.36	
Independent Artists, Writers, and Performers (NAICS 7115)			
African American	0.00	11.06	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hispanic	0.00	4.47	0.00
Asian	0.00	8.06	0.00
Native American	0.00	1.59	0.00
Minority Total	0.00	25.17	0.00 ***
Nonminority female	0.00	17.23	0.00 ***
DBE Total	0.00	42.39	0.00 ***
Traveler Accommodation (NAICS 7211)			
African American	0.00	8.50	0.00 ***
Hispanic	0.00	4.07	0.00 ***
Asian	0.00	13.72	0.00 ***
Native American	0.00	1.54	0.00
Minority Total	0.00	27.83	0.00 ***
Nonminority female	0.00	14.24	0.00 ***
DBE Total	0.00	42.07	0.00 ***
Lessors of Real Estate (NAICS 5311)			
African American	0.00	23.44	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.24	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.67	0.00
Nonminority female	0.00	35.82	0.00 ***
DBE Total	0.00	59.49	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.14. Industry Group Utilization, Availability, and Disparity Results for JMAA Services Contracting (All Funds) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Other Personal Services (NAICS 8129)</b>			
African American	20.00	20.56	97.30
Hispanic	0.00	1.58	0.00
Asian	0.00	1.21	0.00
Native American	0.00	1.21	0.00
Minority Total	20.00	24.56	81.44
Nonminority female	0.00	8.48	0.00 ***
DBE Total	20.00	33.03	60.54
<b>Management, Scientific, and Technical Consulting Services (NAICS 5416)</b>			
African American	11.31	12.90	87.68
Hispanic	9.74	1.69	
Asian	0.00	0.05	0.00
Native American	0.00	0.25	0.00
Minority Total	21.06	14.88	
Nonminority female	64.74	19.30	
DBE Total	85.80	34.18	
<b>Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)</b>			
African American	88.95	7.71	
Hispanic	0.00	0.00	
Asian	0.00	0.21	0.00
Native American	0.00	0.00	
Minority Total	88.95	7.92	
Nonminority female	0.00	11.48	0.00 ***
DBE Total	88.95	19.40	
<b>Legal Services (NAICS 5411)</b>			
African American	0.00	9.55	0.00 ***
Hispanic	0.00	1.58	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.08	0.00
Minority Total	0.00	11.22	0.00 ***
Nonminority female	2.76	17.69	15.61 ***
DBE Total	2.76	28.90	9.55 ***
<b>Computer Systems Design and Related Services (NAICS 5415)</b>			
African American	0.00	15.01	0.00 ***
Hispanic	0.00	1.90	0.00
Asian	0.00	1.21	0.00
Native American	0.00	0.60	0.00
Minority Total	0.00	18.72	0.00 ***
Nonminority female	0.00	22.05	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE Total	0.00	40.77	0.00 ***
Other Specialty Trade Contractors (NAICS 2389)			
African American	99.89	9.69	
Hispanic	0.00	1.41	0.00
Asian	0.00	1.41	0.00
Native American	0.00	0.11	0.00
Minority Total	99.89	12.62	
Nonminority female	0.00	8.27	0.00 ***
DBE Total	99.89	20.89	
Performing Arts Companies (NAICS 7111)			
African American	10.07	12.28	82.00
Hispanic	0.00	3.94	0.00 ***
Asian	0.00	7.28	0.00 ***
Native American	0.00	1.72	0.00 ***
Minority Total	10.07	25.23	39.92 **
Nonminority female	0.00	24.26	0.00 ***
DBE Total	10.07	49.48	20.35 ***
Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139)			
African American	0.00	17.12	0.00 ***
Hispanic	0.00	1.28	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.26	0.00
Minority Total	0.00	20.93	0.00 ***
Nonminority female	0.00	8.83	0.00 ***
DBE Total	0.00	29.76	0.00 ***
Building Equipment Contractors (NAICS 2382)			
African American	44.09	9.40	
Hispanic	0.00	1.48	0.00 ***
Asian	0.00	1.33	0.00 ***
Native American	0.00	0.08	0.00
Minority Total	44.09	12.29	
Nonminority female	0.22	8.19	2.72 ***
DBE Total	44.31	20.48	
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance (NAICS 8113)			
African American	0.00	17.28	0.00 ***
Hispanic	0.00	1.25	0.00 ***
Asian	0.00	1.47	0.00 ***
Native American	0.00	1.60	0.00 ***
Minority Total	0.00	21.60	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Nonminority female	39.77	9.49	
DBE Total	39.77	31.08	
Specialized Design Services (NAICS 5414)			
African American	0.00	11.28	0.00 ***
Hispanic	0.00	1.97	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	13.25	0.00 ***
Nonminority female	0.00	21.47	0.00 ***
DBE Total	0.00	34.72	0.00 ***
Office Administrative Services (NAICS 5611)			
African American	0.00	24.27	0.00 ***
Hispanic	0.00	0.39	0.00
Asian	0.00	0.26	0.00
Native American	0.00	0.13	0.00
Minority Total	0.00	25.05	0.00 ***
Nonminority female	0.00	35.44	0.00 ***
DBE Total	0.00	60.49	0.00 ***
Software Publishers (NAICS 5112)			
African American	0.00	22.63	0.00 ***
Hispanic	0.00	1.23	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.87	0.00 ***
Nonminority female	0.00	38.10	0.00 ***
DBE Total	0.00	61.97	0.00 ***
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)			
African American	0.00	7.43	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.04	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	10.47	0.00 ***
Nonminority female	0.00	29.83	0.00 ***
DBE Total	0.00	40.30	0.00 ***
Offices of Real Estate Agents and Brokers (NAICS 5312)			
African American	0.00	22.29	0.00 ***
Hispanic	0.00	0.15	0.00
Asian	0.00	0.04	0.00
Native American	0.00	0.04	0.00
Minority Total	0.00	22.52	0.00 ***
Nonminority female	0.00	40.10	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE Total	0.00	62.62	0.00 ***
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.00	8.99	0.00 ***
Hispanic	0.00	1.58	0.00
Asian	0.00	0.00	
Native American	0.00	0.06	0.00
Minority Total	0.00	10.63	0.00 ***
Nonminority female	15.05	19.36	77.74
DBE Total	15.05	29.99	50.18
Services to Buildings and Dwellings (NAICS 5617)			
African American	3.12	24.99	12.48 **
Hispanic	0.00	0.33	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.04	0.00
Minority Total	3.12	25.50	12.23 **
Nonminority female	14.58	36.56	39.89
DBE Total	17.70	62.06	28.52 **
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)			
African American	86.62	22.16	
Hispanic	0.00	0.30	0.00 ***
Asian	0.00	0.30	0.00 ***
Native American	0.00	0.00	
Minority Total	86.62	22.76	
Nonminority female	0.00	40.44	0.00 ***
DBE Total	86.62	63.20	
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	8.13	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.95	0.00 ***
Native American	60.94	0.00	
Minority Total	60.94	11.08	
Nonminority female	0.00	27.24	0.00 ***
DBE Total	60.94	38.32	
Scientific Research and Development Services (NAICS 5417)			
African American	41.82	10.65	
Hispanic	0.00	1.48	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	41.82	12.13	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Nonminority female	0.00	20.70	0.00 ***
DBE Total	41.82	32.84	
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	9.11	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	10.70	0.00 ***
Nonminority female	11.01	18.25	60.32
DBE Total	11.01	28.95	38.03
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	7.75	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.23	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	10.98	0.00 ***
Nonminority female	0.00	28.13	0.00 ***
DBE Total	0.00	39.12	0.00 ***
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	8.82	0.00 ***
Hispanic	0.00	0.46	0.00
Asian	0.00	0.00	
Native American	0.00	0.46	0.00
Minority Total	0.00	9.74	0.00 ***
Nonminority female	0.00	9.96	0.00 ***
DBE Total	0.00	19.70	0.00 ***
Investigation and Security Services (NAICS 5616)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	1.16	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.58	0.00
Minority Total	0.00	25.32	0.00 ***
Nonminority female	0.00	36.45	0.00 ***
DBE Total	0.00	61.77	0.00 ***
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	24.94	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	24.94	0.00 ***
Nonminority female	0.00	36.11	0.00 ***
DBE Total	0.00	61.05	0.00 ***
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	11.52	0.00 ***
Hispanic	0.00	1.58	0.00 ***
Asian	0.00	0.22	0.00
Native American	0.00	0.86	0.00 **
Minority Total	0.00	14.19	0.00 ***
Nonminority female	35.24	17.31	
DBE Total	35.24	31.51	
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.29	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	2.29	0.00 ***
Nonminority female	0.00	24.57	0.00 ***
DBE Total	0.00	26.86	0.00 ***
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	7.13	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	7.13	0.00 ***
Nonminority female	0.00	16.88	0.00 ***
DBE Total	0.00	24.01	0.00 ***
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	24.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	24.79	0.00 ***
Nonminority female	0.00	37.04	0.00 ***
DBE Total	0.00	61.83	0.00 ***
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	10.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.66	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.74	0.00 ***
Minority Total	0.00	13.06	0.00 ***
Nonminority female	0.00	21.47	0.00 ***
DBE Total	0.00	34.53	0.00 ***
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)			
African American	0.00	17.32	0.00 ***
Hispanic	0.00	1.58	0.00
Asian	0.00	1.27	0.00
Native American	0.00	1.20	0.00
Minority Total	0.00	21.36	0.00 ***
Nonminority female	0.00	9.96	0.00
DBE Total	0.00	31.32	0.00 ***
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	0.00	5.22	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.73	0.00 ***
Native American	0.00	1.65	0.00 ***
Minority Total	0.00	8.60	0.00 ***
Nonminority female	62.14	17.27	
DBE Total	62.14	25.87	
Other Schools and Instruction (NAICS 6116)			
African American	0.00	12.44	0.00 ***
Hispanic	0.00	4.03	0.00
Asian	0.00	7.86	0.00 ***
Native American	0.00	1.78	0.00
Minority Total	0.00	26.11	0.00 ***
Nonminority female	0.00	18.86	0.00 ***
DBE Total	0.00	44.97	0.00 ***
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	5.56	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.04	0.00 ***
Native American	0.00	0.16	0.00
Minority Total	0.00	7.77	0.00 ***
Nonminority female	0.00	15.81	0.00 ***
DBE Total	0.00	23.57	0.00 ***
Support Activities for Air Transportation (NAICS 4881)			
African American	0.00	9.07	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	5.09	0.00
Native American	0.00	0.00	
Minority Total	0.00	14.16	0.00 ***
Nonminority female	0.00	25.35	0.00 ***
DBE Total	0.00	39.50	0.00 ***
Engine, Turbine, and Power Transmission Equipment Manufacturing (NAICS 3336)			
African American	0.00	5.08	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	5.08	0.00
Nonminority female	0.00	10.16	0.00 ***
DBE Total	0.00	15.24	0.00 ***
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)			
African American	0.00	23.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.65	0.00 ***
Nonminority female	0.00	36.25	0.00 ***
DBE Total	0.00	59.89	0.00 ***
Drycleaning and Laundry Services (NAICS 8123)			
African American	13.28	16.42	80.85
Hispanic	0.00	1.14	0.00 ***
Asian	0.00	2.12	0.00 ***
Native American	0.00	1.34	0.00 ***
Minority Total	13.28	21.02	63.15
Nonminority female	0.00	12.51	0.00 ***
DBE Total	13.28	33.53	39.60 *
Other Support Services (NAICS 5619)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	0.01	0.00
Asian	0.00	0.02	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.61	0.00 ***
Nonminority female	0.00	35.40	0.00 ***
DBE Total	0.00	59.00	0.00 ***
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	9.03	0.00 ***
Hispanic	0.00	1.29	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	1.29	0.00 ***
Native American	0.00	0.02	0.00
Minority Total	0.00	11.62	0.00 ***
Nonminority female	2.19	7.27	30.18
DBE Total	2.19	18.89	11.61
Building Material and Supplies Dealers (NAICS 4441)			
African American	0.00	7.61	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.01	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	10.62	0.00 ***
Nonminority female	0.00	27.69	0.00 ***
DBE Total	0.00	38.31	0.00 ***
Activities Related to Real Estate (NAICS 5313)			
African American	0.00	22.71	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.31	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.02	0.00
Nonminority female	0.00	39.73	0.00 ***
DBE Total	0.00	62.75	0.00 ***
Facilities Support Services (NAICS 5612)			
African American	0.00	22.74	0.00 ***
Hispanic	0.00	3.92	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	26.66	0.00 ***
Nonminority female	0.00	36.14	0.00 ***
DBE Total	0.00	62.80	0.00 ***
Motion Picture and Video Industries (NAICS 5121)			
African American	48.30	26.31	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	48.30	26.31	
Nonminority female	0.00	35.49	0.00 ***
DBE Total	48.30	61.80	78.15 ***
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	21.16	8.38	
Hispanic	0.00	2.19	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.00	
Native American	0.00	0.96	0.00 ***
Minority Total	21.16	11.54	
Nonminority female	0.00	31.38	0.00 ***
DBE Total	21.16	42.92	49.29
Support Activities for Road Transportation (NAICS 4884)			
African American	0.00	8.19	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.98	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	11.17	0.00 ***
Nonminority female	0.00	27.84	0.00 ***
DBE Total	0.00	39.01	0.00 ***
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	4.87	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.69	0.00
Native American	0.00	0.10	0.00
Minority Total	0.00	6.65	0.00 ***
Nonminority female	0.00	12.96	0.00 ***
DBE Total	0.00	19.62	0.00 ***
Audio and Video Equipment Manufacturing (NAICS 3343)			
African American	0.00	3.54	0.00
Hispanic	0.00	0.80	0.00
Asian	0.00	0.00	
Native American	0.00	0.80	0.00
Minority Total	0.00	5.14	0.00
Nonminority female	0.00	14.37	0.00
DBE Total	0.00	19.51	0.00
Nonresidential Building Construction (NAICS 2362)			
African American	100.00	11.05	
Hispanic	0.00	1.34	0.00 ***
Asian	0.00	0.69	0.00 ***
Native American	0.00	1.82	0.00 ***
Minority Total	100.00	14.91	
Nonminority female	0.00	9.45	0.00 ***
DBE Total	100.00	24.36	
Independent Artists, Writers, and Performers (NAICS 7115)			
African American	0.00	11.06	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hispanic	0.00	4.47	0.00
Asian	0.00	8.06	0.00
Native American	0.00	1.59	0.00
Minority Total	0.00	25.17	0.00 ***
Nonminority female	0.00	17.23	0.00 ***
DBE Total	0.00	42.39	0.00 ***
Traveler Accommodation (NAICS 7211)			
African American	0.00	8.50	0.00 ***
Hispanic	0.00	4.07	0.00 ***
Asian	0.00	13.72	0.00 ***
Native American	0.00	1.54	0.00
Minority Total	0.00	27.83	0.00 ***
Nonminority female	0.00	14.24	0.00 ***
DBE Total	0.00	42.07	0.00 ***
Lessors of Real Estate (NAICS 5311)			
African American	0.00	23.44	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.24	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.67	0.00
Nonminority female	0.00	35.82	0.00 ***
DBE Total	0.00	59.49	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.15. Industry Group Utilization, Availability, and Disparity Results for JMAA Services Contracting (Federally-Funded) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Legal Services (NAICS 5411)			
African American	40.64	9.55	
Hispanic	0.00	1.58	0.00
Asian	0.00	0.00	
Native American	0.00	0.08	0.00
Minority	40.64	11.22	
Nonminority female	0.00	17.69	0.00 ***
DBE total	40.64	28.90	
Scientific Research and Development Services (NAICS 5417)			
African American	0.00	12.29	0.00
Hispanic	0.00	1.44	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	13.73	0.00
Nonminority female	0.00	20.54	0.00
DBE total	0.00	34.27	0.00
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	13.14	0.00 ***
Hispanic	0.00	1.69	0.00
Asian	0.00	0.00	
Native American	0.00	0.24	0.00
Minority	0.00	15.07	0.00 ***
Nonminority female	78.33	19.71	
DBE total	78.33	34.78	
Other Specialty Trade Contractors (NAICS 2389)			
African American	100.00	9.69	
Hispanic	0.00	1.41	0.00
Asian	0.00	1.41	0.00
Native American	0.00	0.11	0.00
Minority	100.00	12.62	
Nonminority female	0.00	8.27	0.00
DBE total	100.00	20.89	
Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139)			
African American	0.00	17.12	0.00 ***
Hispanic	0.00	1.28	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.26	0.00
Minority	0.00	20.93	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Nonminority female	0.00	8.83	0.00
DBE total	0.00	29.76	0.00 ***
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	24.79	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	24.79	0.00
Nonminority female	0.00	37.04	0.00
DBE total	0.00	61.83	0.00 ***
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)			
African American	72.30	22.05	
Hispanic	0.00	0.64	0.00
Asian	0.00	0.64	0.00
Native American	0.00	0.00	
Minority	72.30	23.32	
Nonminority female	0.00	39.84	0.00 ***
DBE total	72.30	63.16	

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC16. Industry Group Utilization, Availability, and Disparity Results for JMAA Services Contracting (Federally-Funded) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Legal Services (NAICS 5411)			
African American	0.00	9.55	0.00 ***
Hispanic	0.00	1.58	0.00
Asian	0.00	0.00	
Native American	0.00	0.08	0.00
Minority	0.00	11.22	0.00 ***
Nonminority female	0.00	17.69	0.00 ***
DBE total	0.00	28.90	0.00 ***
Business, Professional, Labor, Political, and Similar Organizations (NAICS 8139)			
African American	0.00	17.12	0.00 ***
Hispanic	0.00	1.28	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.26	0.00
Minority	0.00	20.93	0.00 ***
Nonminority female	0.00	8.83	0.00
DBE total	0.00	29.76	0.00 ***
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	13.14	0.00 ***
Hispanic	0.00	1.69	0.00
Asian	0.00	0.00	
Native American	0.00	0.24	0.00
Minority	0.00	15.07	0.00 ***
Nonminority female	84.98	19.71	
DBE total	84.98	34.78	
Other Specialty Trade Contractors (NAICS 2389)			
African American	100.00	9.69	
Hispanic	0.00	1.41	0.00
Asian	0.00	1.41	0.00
Native American	0.00	0.11	0.00
Minority	100.00	12.62	
Nonminority female	0.00	8.27	0.00
DBE total	100.00	20.89	
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)			
African American	72.30	22.05	
Hispanic	0.00	0.64	0.00
Asian	0.00	0.64	0.00
Native American	0.00	0.00	
Minority	72.30	23.32	

Appendix C. Detailed Utilization, Availability & Disparity Tables

<b>NAICS Industry Group / DBE Type</b>	<b>Utilization (%)</b>	<b>Availability (%)</b>	<b>Disparity Ratio</b>
Nonminority female	0.00	39.84	0.00 ***
DBE total	72.30	63.16	

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.17. Industry Group Utilization, Availability, and Disparity Results for JMAA Services Contracting (Locally-Funded) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Personal Services (NAICS 8129)			
African American	20.00	20.56	97.30
Hispanic	0.00	1.58	0.00
Asian	0.00	1.21	0.00
Native American	0.00	1.21	0.00
Minority	20.00	24.56	81.44
Nonminority female	0.00	8.48	0.00 ***
DBE total	20.00	33.03	60.54
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	15.65	12.87	
Hispanic	8.45	1.68	
Asian	0.00	0.04	0.00
Native American	0.00	0.24	0.00
Minority	24.09	14.83	
Nonminority female	51.53	19.29	
DBE total	75.62	34.12	
Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)			
African American	88.95	7.71	
Hispanic	0.00	0.00	
Asian	0.00	0.21	0.00
Native American	0.00	0.00	
Minority	88.95	7.92	
Nonminority female	0.00	11.48	0.00 ***
DBE total	88.95	19.40	
Legal Services (NAICS 5411)			
African American	0.00	9.55	0.00 ***
Hispanic	0.00	1.58	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.08	0.00
Minority	0.00	11.22	0.00 ***
Nonminority female	3.73	17.69	21.07 ***
DBE total	3.73	28.90	12.89 ***
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	15.01	0.00 ***
Hispanic	0.00	1.90	0.00
Asian	0.00	1.21	0.00
Native American	0.00	0.60	0.00
Minority	0.00	18.72	0.00 ***
Nonminority female	0.00	22.05	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE total	0.00	40.77	0.00 ***
Performing Arts Companies (NAICS 7111)			
African American	10.01	12.28	81.53
Hispanic	0.00	3.94	0.00 ***
Asian	0.00	7.28	0.00 ***
Native American	0.00	1.72	0.00 ***
Minority	10.01	25.23	39.69 **
Nonminority female	0.00	24.26	0.00 ***
DBE total	10.01	49.48	20.23 ***
Offices of Real Estate Agents and Brokers (NAICS 5312)			
African American	0.00	22.29	0.00 ***
Hispanic	0.00	0.15	0.00
Asian	0.00	0.04	0.00
Native American	0.00	0.04	0.00
Minority	0.00	22.52	0.00 ***
Nonminority female	0.00	40.10	0.00 ***
DBE total	0.00	62.62	0.00 ***
Other Specialty Trade Contractors (NAICS 2389)			
African American	99.83	9.69	
Hispanic	0.00	1.41	0.00
Asian	0.00	1.41	0.00
Native American	0.00	0.11	0.00
Minority	99.83	12.62	
Nonminority female	0.00	8.27	0.00 ***
DBE total	99.83	20.89	
Office Administrative Services (NAICS 5611)			
African American	0.00	24.27	0.00 ***
Hispanic	0.00	0.39	0.00
Asian	0.00	0.26	0.00
Native American	0.00	0.13	0.00
Minority	0.00	25.05	0.00 ***
Nonminority female	0.00	35.44	0.00 ***
DBE total	0.00	60.49	0.00 ***
Building Equipment Contractors (NAICS 2382)			
African American	44.09	9.40	
Hispanic	0.00	1.48	0.00 ***
Asian	0.00	1.33	0.00 ***
Native American	0.00	0.08	0.00
Minority	44.09	12.29	
Nonminority female	0.22	8.19	2.72 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE total	44.31	20.48	
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Main			
African American	0.00	17.28	0.00 ***
Hispanic	0.00	1.25	0.00 ***
Asian	0.00	1.47	0.00 ***
Native American	0.00	1.60	0.00 ***
Minority	0.00	21.60	0.00 ***
Nonminority female	39.77	9.49	
DBE total	39.77	31.08	
Software Publishers (NAICS 5112)			
African American	0.00	22.63	0.00 ***
Hispanic	0.00	1.23	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	23.87	0.00 ***
Nonminority female	0.00	38.10	0.00 ***
DBE total	0.00	61.97	0.00 ***
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)			
African American	0.00	7.43	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.04	0.00 ***
Native American	0.00	0.00	
Minority	0.00	10.47	0.00 ***
Nonminority female	0.00	29.83	0.00 ***
DBE total	0.00	40.30	0.00 ***
Specialized Design Services (NAICS 5414)			
African American	0.00	11.28	0.00 ***
Hispanic	0.00	1.97	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	13.25	0.00 ***
Nonminority female	0.00	21.47	0.00 ***
DBE total	0.00	34.72	0.00 ***
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.00	8.99	0.00 ***
Hispanic	0.00	1.58	0.00
Asian	0.00	0.00	
Native American	0.00	0.06	0.00
Minority	0.00	10.63	0.00 ***
Nonminority female	15.05	19.36	77.74

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE total	15.05	29.99	50.18
Services to Buildings and Dwellings (NAICS 5617)			
African American	3.12	24.99	12.48 **
Hispanic	0.00	0.33	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.04	0.00
Minority	3.12	25.50	12.23 **
Nonminority female	14.58	36.56	39.89
DBE total	17.70	62.06	28.52 **
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	8.13	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.95	0.00 ***
Native American	60.94	0.00	
Minority	60.94	11.08	
Nonminority female	0.00	27.24	0.00 ***
DBE total	60.94	38.32	
Scientific Research and Development Services (NAICS 5417)			
African American	41.82	10.65	
Hispanic	0.00	1.48	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	41.82	12.13	
Nonminority female	0.00	20.70	0.00 ***
DBE total	41.82	32.84	
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)			
African American	90.47	22.19	
Hispanic	0.00	0.21	0.00
Asian	0.00	0.21	0.00
Native American	0.00	0.00	
Minority	90.47	22.61	
Nonminority female	0.00	40.60	0.00 ***
DBE total	90.47	63.21	
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	9.11	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	10.70	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Nonminority female	11.01	18.25	60.32
DBE total	11.01	28.95	38.03
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	7.75	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.23	0.00 ***
Native American	0.00	0.00	
Minority	0.00	10.98	0.00 ***
Nonminority female	0.00	28.13	0.00 ***
DBE total	0.00	39.12	0.00 ***
Investigation and Security Services (NAICS 5616)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	1.16	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.58	0.00
Minority	0.00	25.32	0.00 ***
Nonminority female	0.00	36.45	0.00 ***
DBE total	0.00	61.77	0.00 ***
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	8.82	0.00 ***
Hispanic	0.00	0.46	0.00
Asian	0.00	0.00	
Native American	0.00	0.46	0.00
Minority	0.00	9.74	0.00 ***
Nonminority female	0.00	9.96	0.00 ***
DBE total	0.00	19.70	0.00 ***
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	11.46	0.00 ***
Hispanic	0.00	1.59	0.00 ***
Asian	0.00	0.25	0.00
Native American	0.00	0.84	0.00 ***
Minority	0.00	14.13	0.00 ***
Nonminority female	39.59	17.32	
DBE total	39.59	31.46	
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	24.94	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority	0.00	24.94	0.00 ***
Nonminority female	0.00	36.11	0.00 ***
DBE total	0.00	61.05	0.00 ***
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.29	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	2.29	0.00
Nonminority female	0.00	24.57	0.00 ***
DBE total	0.00	26.86	0.00 ***
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	7.13	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	7.13	0.00 ***
Nonminority female	0.00	16.88	0.00 ***
DBE total	0.00	24.01	0.00 ***
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	24.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	24.79	0.00 ***
Nonminority female	0.00	37.04	0.00 ***
DBE total	0.00	61.83	0.00 ***
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	10.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.66	0.00 ***
Native American	0.00	0.74	0.00 ***
Minority	0.00	13.06	0.00 ***
Nonminority female	0.00	21.47	0.00 ***
DBE total	0.00	34.53	0.00 ***
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)			
African American	0.00	17.32	0.00 ***
Hispanic	0.00	1.58	0.00
Asian	0.00	1.27	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	1.20	0.00
Minority	0.00	21.36	0.00 ***
Nonminority female	0.00	9.96	0.00
DBE total	0.00	31.32	0.00 ***
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	0.00	5.22	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.73	0.00 ***
Native American	0.00	1.65	0.00 ***
Minority	0.00	8.60	0.00 ***
Nonminority female	62.14	17.27	
DBE total	62.14	25.87	
Other Schools and Instruction (NAICS 6116)			
African American	0.00	12.44	0.00 ***
Hispanic	0.00	4.03	0.00
Asian	0.00	7.86	0.00 ***
Native American	0.00	1.78	0.00
Minority	0.00	26.11	0.00 ***
Nonminority female	0.00	18.86	0.00 ***
DBE total	0.00	44.97	0.00 ***
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	5.56	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.04	0.00 ***
Native American	0.00	0.16	0.00
Minority	0.00	7.77	0.00 ***
Nonminority female	0.00	15.81	0.00 ***
DBE total	0.00	23.57	0.00 ***
Support Activities for Air Transportation (NAICS 4881)			
African American	0.00	9.07	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	5.09	0.00
Native American	0.00	0.00	
Minority	0.00	14.16	0.00 ***
Nonminority female	0.00	25.35	0.00 ***
DBE total	0.00	39.50	0.00 ***
Engine, Turbine, and Power Transmission Equipment Manufacturing (NAICS 3336)			
African American	0.00	5.08	0.00
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	5.08	0.00
Nonminority female	0.00	10.16	0.00 ***
DBE total	0.00	15.24	0.00 ***
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)			
African American	0.00	23.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	23.65	0.00 ***
Nonminority female	0.00	36.25	0.00 ***
DBE total	0.00	59.89	0.00 ***
Drycleaning and Laundry Services (NAICS 8123)			
African American	13.28	16.42	80.85
Hispanic	0.00	1.14	0.00 ***
Asian	0.00	2.12	0.00 ***
Native American	0.00	1.34	0.00 ***
Minority	13.28	21.02	63.15
Nonminority female	0.00	12.51	0.00 ***
DBE total	13.28	33.53	39.60 *
Other Support Services (NAICS 5619)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	0.01	0.00
Asian	0.00	0.02	0.00
Native American	0.00	0.00	
Minority	0.00	23.61	0.00 ***
Nonminority female	0.00	35.40	0.00 ***
DBE total	0.00	59.00	0.00 ***
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	9.03	0.00 ***
Hispanic	0.00	1.29	0.00 ***
Asian	0.00	1.29	0.00 ***
Native American	0.00	0.02	0.00
Minority	0.00	11.62	0.00 ***
Nonminority female	2.19	7.27	30.18
DBE total	2.19	18.89	11.61
Building Material and Supplies Dealers (NAICS 4441)			
African American	0.00	7.61	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	3.01	0.00 ***
Native American	0.00	0.00	
Minority	0.00	10.62	0.00 ***
Nonminority female	0.00	27.69	0.00 ***
DBE total	0.00	38.31	0.00 ***
Activities Related to Real Estate (NAICS 5313)			
African American	0.00	22.71	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.31	0.00
Native American	0.00	0.00	
Minority	0.00	23.02	0.00
Nonminority female	0.00	39.73	0.00 ***
DBE total	0.00	62.75	0.00 ***
Facilities Support Services (NAICS 5612)			
African American	0.00	22.74	0.00 ***
Hispanic	0.00	3.92	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	26.66	0.00 ***
Nonminority female	0.00	36.14	0.00 ***
DBE total	0.00	62.80	0.00 ***
Motion Picture and Video Industries (NAICS 5121)			
African American	48.30	26.31	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	48.30	26.31	
Nonminority female	0.00	35.49	0.00 ***
DBE total	48.30	61.80	78.15 ***
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	19.12	8.38	
Hispanic	0.00	2.19	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.96	0.00 ***
Minority	19.12	11.54	
Nonminority female	0.00	31.38	0.00 ***
DBE total	19.12	42.92	44.56 ***
Support Activities for Road Transportation (NAICS 4884)			
African American	0.00	8.19	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	2.98	0.00 ***
Native American	0.00	0.00	
Minority	0.00	11.17	0.00 ***
Nonminority female	0.00	27.84	0.00 ***
DBE total	0.00	39.01	0.00 ***
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	4.87	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.69	0.00
Native American	0.00	0.10	0.00
Minority	0.00	6.65	0.00 ***
Nonminority female	0.00	12.96	0.00 ***
DBE total	0.00	19.62	0.00 ***
Audio and Video Equipment Manufacturing (NAICS 3343)			
African American	0.00	3.54	0.00
Hispanic	0.00	0.80	0.00
Asian	0.00	0.00	
Native American	0.00	0.80	0.00
Minority	0.00	5.14	0.00
Nonminority female	0.00	14.37	0.00
DBE total	0.00	19.51	0.00
Nonresidential Building Construction (NAICS 2362)			
African American	100.00	11.05	
Hispanic	0.00	1.34	0.00 ***
Asian	0.00	0.69	0.00 ***
Native American	0.00	1.82	0.00 ***
Minority	100.00	14.91	
Nonminority female	0.00	9.45	0.00 ***
DBE total	100.00	24.36	
Independent Artists, Writers, and Performers (NAICS 7115)			
African American	0.00	11.06	0.00
Hispanic	0.00	4.47	0.00
Asian	0.00	8.06	0.00
Native American	0.00	1.59	0.00
Minority	0.00	25.17	0.00 ***
Nonminority female	0.00	17.23	0.00 ***
DBE total	0.00	42.39	0.00 ***
Traveler Accommodation (NAICS 7211)			
African American	0.00	8.50	0.00 ***
Hispanic	0.00	4.07	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	13.72	0.00 ***
Native American	0.00	1.54	0.00
Minority	0.00	27.83	0.00 ***
Nonminority female	0.00	14.24	0.00 ***
DBE total	0.00	42.07	0.00 ***
Lessors of Real Estate (NAICS 5311)			
African American	0.00	23.44	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.24	0.00
Native American	0.00	0.00	
Minority	0.00	23.67	0.00
Nonminority female	0.00	35.82	0.00 ***
DBE total	0.00	59.49	0.00 ***
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.00	5.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.19	0.00
Minority	0.00	6.89	0.00 ***
Nonminority female	0.00	15.77	0.00 ***
DBE total	0.00	22.66	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.18. Industry Group Utilization, Availability, and Disparity Results for JMAA Services Contracting (Locally-Funded) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Personal Services (NAICS 8129)			
African American	20.00	20.56	97.30
Hispanic	0.00	1.58	0.00
Asian	0.00	1.21	0.00
Native American	0.00	1.21	0.00
Minority	20.00	24.56	81.44
Nonminority female	0.00	8.48	0.00 ***
DBE total	20.00	33.03	60.54
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	11.99	12.89	93.06
Hispanic	10.33	1.69	
Asian	0.00	0.05	0.00
Native American	0.00	0.25	0.00
Minority	22.32	14.87	
Nonminority female	63.53	19.27	
DBE total	85.85	34.14	
Agencies, Brokerages, and Other Insurance Related Activities (NAICS 5242)			
African American	88.95	7.71	
Hispanic	0.00	0.00	
Asian	0.00	0.21	0.00
Native American	0.00	0.00	
Minority	88.95	7.92	
Nonminority female	0.00	11.48	0.00 ***
DBE total	88.95	19.40	
Legal Services (NAICS 5411)			
African American	0.00	9.55	0.00 ***
Hispanic	0.00	1.58	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.08	0.00
Minority	0.00	11.22	0.00 ***
Nonminority female	3.70	17.69	20.92 ***
DBE total	3.70	28.90	12.80 ***
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	15.01	0.00 ***
Hispanic	0.00	1.90	0.00
Asian	0.00	1.21	0.00
Native American	0.00	0.60	0.00
Minority	0.00	18.72	0.00 ***
Nonminority female	0.00	22.05	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE total	0.00	40.77	0.00 ***
Performing Arts Companies (NAICS 7111)			
African American	10.07	12.28	82.00
Hispanic	0.00	3.94	0.00 ***
Asian	0.00	7.28	0.00 ***
Native American	0.00	1.72	0.00 ***
Minority	10.07	25.23	39.92 **
Nonminority female	0.00	24.26	0.00 ***
DBE total	10.07	49.48	20.35 ***
Other Specialty Trade Contractors (NAICS 2389)			
African American	99.83	9.69	
Hispanic	0.00	1.41	0.00
Asian	0.00	1.41	0.00
Native American	0.00	0.11	0.00
Minority	99.83	12.62	
Nonminority female	0.00	8.27	0.00 ***
DBE total	99.83	20.89	
Building Equipment Contractors (NAICS 2382)			
African American	44.09	9.40	
Hispanic	0.00	1.48	0.00 ***
Asian	0.00	1.33	0.00 ***
Native American	0.00	0.08	0.00
Minority	44.09	12.29	
Nonminority female	0.22	8.19	2.72 ***
DBE total	44.31	20.48	
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Main			
African American	0.00	17.28	0.00 ***
Hispanic	0.00	1.25	0.00 ***
Asian	0.00	1.47	0.00 ***
Native American	0.00	1.60	0.00 ***
Minority	0.00	21.60	0.00 ***
Nonminority female	39.77	9.49	
DBE total	39.77	31.08	
Specialized Design Services (NAICS 5414)			
African American	0.00	11.28	0.00 ***
Hispanic	0.00	1.97	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	13.25	0.00 ***
Nonminority female	0.00	21.47	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE total	0.00	34.72	0.00 ***
Office Administrative Services (NAICS 5611)			
African American	0.00	24.27	0.00 ***
Hispanic	0.00	0.39	0.00
Asian	0.00	0.26	0.00
Native American	0.00	0.13	0.00
Minority	0.00	25.05	0.00 ***
Nonminority female	0.00	35.44	0.00 ***
DBE total	0.00	60.49	0.00 ***
Software Publishers (NAICS 5112)			
African American	0.00	22.63	0.00 ***
Hispanic	0.00	1.23	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	23.87	0.00 ***
Nonminority female	0.00	38.10	0.00 ***
DBE total	0.00	61.97	0.00 ***
Lawn and Garden Equipment and Supplies Stores (NAICS 4442)			
African American	0.00	7.43	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.04	0.00 ***
Native American	0.00	0.00	
Minority	0.00	10.47	0.00 ***
Nonminority female	0.00	29.83	0.00 ***
DBE total	0.00	40.30	0.00 ***
Offices of Real Estate Agents and Brokers (NAICS 5312)			
African American	0.00	22.29	0.00 ***
Hispanic	0.00	0.15	0.00
Asian	0.00	0.04	0.00
Native American	0.00	0.04	0.00
Minority	0.00	22.52	0.00 ***
Nonminority female	0.00	40.10	0.00 ***
DBE total	0.00	62.62	0.00 ***
Other Professional, Scientific, and Technical Services (NAICS 5419)			
African American	0.00	8.99	0.00 ***
Hispanic	0.00	1.58	0.00
Asian	0.00	0.00	
Native American	0.00	0.06	0.00
Minority	0.00	10.63	0.00 ***
Nonminority female	15.05	19.36	77.74

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE total	15.05	29.99	50.18
Services to Buildings and Dwellings (NAICS 5617)			
African American	3.12	24.99	12.48 **
Hispanic	0.00	0.33	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.04	0.00
Minority	3.12	25.50	12.23 **
Nonminority female	14.58	36.56	39.89
DBE total	17.70	62.06	28.52 **
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	8.13	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.95	0.00 ***
Native American	60.94	0.00	
Minority	60.94	11.08	
Nonminority female	0.00	27.24	0.00 ***
DBE total	60.94	38.32	
Scientific Research and Development Services (NAICS 5417)			
African American	41.82	10.65	
Hispanic	0.00	1.48	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	41.82	12.13	
Nonminority female	0.00	20.70	0.00 ***
DBE total	41.82	32.84	
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)			
African American	90.21	22.19	
Hispanic	0.00	0.22	0.00
Asian	0.00	0.22	0.00
Native American	0.00	0.00	
Minority	90.21	22.62	
Nonminority female	0.00	40.59	0.00 ***
DBE total	90.21	63.21	
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	9.11	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	10.70	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Nonminority female	11.01	18.25	60.32
DBE total	11.01	28.95	38.03
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	7.75	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.23	0.00 ***
Native American	0.00	0.00	
Minority	0.00	10.98	0.00 ***
Nonminority female	0.00	28.13	0.00 ***
DBE total	0.00	39.12	0.00 ***
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	8.82	0.00 ***
Hispanic	0.00	0.46	0.00
Asian	0.00	0.00	
Native American	0.00	0.46	0.00
Minority	0.00	9.74	0.00 ***
Nonminority female	0.00	9.96	0.00 ***
DBE total	0.00	19.70	0.00 ***
Investigation and Security Services (NAICS 5616)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	1.16	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.58	0.00
Minority	0.00	25.32	0.00 ***
Nonminority female	0.00	36.45	0.00 ***
DBE total	0.00	61.77	0.00 ***
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	24.94	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	24.94	0.00 ***
Nonminority female	0.00	36.11	0.00 ***
DBE total	0.00	61.05	0.00 ***
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	11.52	0.00 ***
Hispanic	0.00	1.58	0.00 ***
Asian	0.00	0.22	0.00
Native American	0.00	0.86	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority	0.00	14.19	0.00 ***
Nonminority female	35.24	17.31	
DBE total	35.24	31.51	
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	2.29	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	2.29	0.00
Nonminority female	0.00	24.57	0.00 ***
DBE total	0.00	26.86	0.00 ***
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	7.13	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	7.13	0.00 ***
Nonminority female	0.00	16.88	0.00 ***
DBE total	0.00	24.01	0.00 ***
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	24.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	24.79	0.00 ***
Nonminority female	0.00	37.04	0.00 ***
DBE total	0.00	61.83	0.00 ***
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	10.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.66	0.00 ***
Native American	0.00	0.74	0.00 ***
Minority	0.00	13.06	0.00 ***
Nonminority female	0.00	21.47	0.00 ***
DBE total	0.00	34.53	0.00 ***
Electronic and Precision Equipment Repair and Maintenance (NAICS 8112)			
African American	0.00	17.32	0.00 ***
Hispanic	0.00	1.58	0.00
Asian	0.00	1.27	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	1.20	0.00
Minority	0.00	21.36	0.00 ***
Nonminority female	0.00	9.96	0.00
DBE total	0.00	31.32	0.00 ***
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	0.00	5.22	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.73	0.00 ***
Native American	0.00	1.65	0.00 ***
Minority	0.00	8.60	0.00 ***
Nonminority female	62.14	17.27	
DBE total	62.14	25.87	
Other Schools and Instruction (NAICS 6116)			
African American	0.00	12.44	0.00 ***
Hispanic	0.00	4.03	0.00
Asian	0.00	7.86	0.00 ***
Native American	0.00	1.78	0.00
Minority	0.00	26.11	0.00 ***
Nonminority female	0.00	18.86	0.00 ***
DBE total	0.00	44.97	0.00 ***
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	5.56	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.04	0.00 ***
Native American	0.00	0.16	0.00
Minority	0.00	7.77	0.00 ***
Nonminority female	0.00	15.81	0.00 ***
DBE total	0.00	23.57	0.00 ***
Support Activities for Air Transportation (NAICS 4881)			
African American	0.00	9.07	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	5.09	0.00
Native American	0.00	0.00	
Minority	0.00	14.16	0.00 ***
Nonminority female	0.00	25.35	0.00 ***
DBE total	0.00	39.50	0.00 ***
Engine, Turbine, and Power Transmission Equipment Manufacturing (NAICS 3336)			
African American	0.00	5.08	0.00
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	5.08	0.00
Nonminority female	0.00	10.16	0.00 ***
DBE total	0.00	15.24	0.00 ***
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)			
African American	0.00	23.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	23.65	0.00 ***
Nonminority female	0.00	36.25	0.00 ***
DBE total	0.00	59.89	0.00 ***
Drycleaning and Laundry Services (NAICS 8123)			
African American	13.28	16.42	80.85
Hispanic	0.00	1.14	0.00 ***
Asian	0.00	2.12	0.00 ***
Native American	0.00	1.34	0.00 ***
Minority	13.28	21.02	63.15
Nonminority female	0.00	12.51	0.00 ***
DBE total	13.28	33.53	39.60 *
Other Support Services (NAICS 5619)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	0.01	0.00
Asian	0.00	0.02	0.00
Native American	0.00	0.00	
Minority	0.00	23.61	0.00 ***
Nonminority female	0.00	35.40	0.00 ***
DBE total	0.00	59.00	0.00 ***
Foundation, Structure, and Building Exterior Contractors (NAICS 2381)			
African American	0.00	9.03	0.00 ***
Hispanic	0.00	1.29	0.00 ***
Asian	0.00	1.29	0.00 ***
Native American	0.00	0.02	0.00
Minority	0.00	11.62	0.00 ***
Nonminority female	2.19	7.27	30.18
DBE total	2.19	18.89	11.61
Building Material and Supplies Dealers (NAICS 4441)			
African American	0.00	7.61	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	3.01	0.00 ***
Native American	0.00	0.00	
Minority	0.00	10.62	0.00 ***
Nonminority female	0.00	27.69	0.00 ***
DBE total	0.00	38.31	0.00 ***
Activities Related to Real Estate (NAICS 5313)			
African American	0.00	22.71	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.31	0.00
Native American	0.00	0.00	
Minority	0.00	23.02	0.00
Nonminority female	0.00	39.73	0.00 ***
DBE total	0.00	62.75	0.00 ***
Facilities Support Services (NAICS 5612)			
African American	0.00	22.74	0.00 ***
Hispanic	0.00	3.92	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	0.00	26.66	0.00 ***
Nonminority female	0.00	36.14	0.00 ***
DBE total	0.00	62.80	0.00 ***
Motion Picture and Video Industries (NAICS 5121)			
African American	48.30	26.31	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority	48.30	26.31	
Nonminority female	0.00	35.49	0.00 ***
DBE total	48.30	61.80	78.15 ***
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	21.16	8.38	
Hispanic	0.00	2.19	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.96	0.00 ***
Minority	21.16	11.54	
Nonminority female	0.00	31.38	0.00 ***
DBE total	21.16	42.92	49.29 ***
Support Activities for Road Transportation (NAICS 4884)			
African American	0.00	8.19	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	2.98	0.00 ***
Native American	0.00	0.00	
Minority	0.00	11.17	0.00 ***
Nonminority female	0.00	27.84	0.00 ***
DBE total	0.00	39.01	0.00 ***
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	4.87	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.69	0.00
Native American	0.00	0.10	0.00
Minority	0.00	6.65	0.00 ***
Nonminority female	0.00	12.96	0.00 ***
DBE total	0.00	19.62	0.00 ***
Audio and Video Equipment Manufacturing (NAICS 3343)			
African American	0.00	3.54	0.00
Hispanic	0.00	0.80	0.00
Asian	0.00	0.00	
Native American	0.00	0.80	0.00
Minority	0.00	5.14	0.00
Nonminority female	0.00	14.37	0.00
DBE total	0.00	19.51	0.00
Nonresidential Building Construction (NAICS 2362)			
African American	100.00	11.05	
Hispanic	0.00	1.34	0.00 ***
Asian	0.00	0.69	0.00 ***
Native American	0.00	1.82	0.00 ***
Minority	100.00	14.91	
Nonminority female	0.00	9.45	0.00 ***
DBE total	100.00	24.36	
Independent Artists, Writers, and Performers (NAICS 7115)			
African American	0.00	11.06	0.00
Hispanic	0.00	4.47	0.00
Asian	0.00	8.06	0.00
Native American	0.00	1.59	0.00
Minority	0.00	25.17	0.00 ***
Nonminority female	0.00	17.23	0.00 ***
DBE total	0.00	42.39	0.00 ***
Traveler Accommodation (NAICS 7211)			
African American	0.00	8.50	0.00 ***
Hispanic	0.00	4.07	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	13.72	0.00 ***
Native American	0.00	1.54	0.00
Minority	0.00	27.83	0.00 ***
Nonminority female	0.00	14.24	0.00 ***
DBE total	0.00	42.07	0.00 ***
Lessors of Real Estate (NAICS 5311)			
African American	0.00	23.44	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.24	0.00
Native American	0.00	0.00	
Minority	0.00	23.67	0.00
Nonminority female	0.00	35.82	0.00 ***
DBE total	0.00	59.49	0.00 ***
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.00	5.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.19	0.00
Minority	0.00	6.89	0.00 ***
Nonminority female	0.00	15.77	0.00 ***
DBE total	0.00	22.66	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.19. Industry Group Utilization, Availability, and Disparity Results for JMAA Commodities Contracting (All Funds) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.35	5.70	6.16
Hispanic	0.00	0.00	
Asian	0.00	2.20	0.00 ***
Native American	0.00	0.18	0.00
Minority Total	0.35	8.08	4.35
Nonminority female	0.03	16.52	0.18 ***
DBE Total	0.38	24.61	1.55 ***
Communications Equipment Manufacturing (NAICS 3342)			
African American	0.00	11.54	0.00 ***
Hispanic	0.00	0.63	0.00
Asian	0.00	0.00	
Native American	0.00	0.63	0.00
Minority Total	0.00	12.81	0.00 ***
Nonminority female	0.00	14.40	0.00 ***
DBE Total	0.00	27.21	0.00 ***
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00 ***
DBE Total	0.00	15.52	0.00 ***
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	8.19	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	8.19	0.00 ***
Nonminority female	0.00	18.42	0.00 ***
DBE Total	0.00	26.61	0.00 ***
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)			
African American	0.89	4.86	18.35
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.09	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.89	6.63	13.44 **
Nonminority female	0.00	13.16	0.00 ***
DBE Total	0.89	19.79	4.51 ***
Automobile Dealers (NAICS 4411)			
African American	0.00	7.96	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.08	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.04	0.00 ***
Nonminority female	0.00	26.40	0.00 ***
DBE Total	0.00	37.44	0.00 ***
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	0.00	6.27	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.13	0.00
Minority Total	0.00	8.07	0.00 ***
Nonminority female	0.00	14.58	0.00 ***
DBE Total	0.00	22.65	0.00 ***
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)			
African American	0.00	4.86	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.69	0.00
Native American	0.00	0.10	0.00
Minority Total	0.00	6.64	0.00
Nonminority female	0.00	13.05	0.00 ***
DBE Total	0.00	19.69	0.00 ***
Cut and Sew Apparel Manufacturing (NAICS 3152)			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00 ***
Native American	0.00	0.88	0.00 ***
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	15.01	0.00 ***
Hispanic	0.00	1.90	0.00
Asian	0.00	1.21	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.60	0.00
Minority Total	0.00	18.72	0.00 ***
Nonminority female	18.43	22.05	83.60
DBE Total	18.43	40.77	45.21
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	0.00	8.52	0.00 ***
Hispanic	0.00	2.01	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.75	0.00 ***
Minority Total	0.00	11.28	0.00 ***
Nonminority female	0.00	30.29	0.00 ***
DBE Total	0.00	41.57	0.00 ***
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.00	5.73	0.00 ***
Hispanic	0.00	0.00	
Asian	41.04	1.67	
Native American	0.00	0.16	0.00
Minority Total	41.04	7.55	
Nonminority female	0.00	14.72	0.00 ***
DBE Total	41.04	22.28	
Special Food Services (NAICS 7223)			
African American	2.30	10.33	22.26 ***
Hispanic	0.00	4.36	0.00 ***
Asian	0.00	8.31	0.00 ***
Native American	0.00	1.58	0.00 ***
Minority Total	2.30	24.59	9.35 ***
Nonminority female	13.94	18.12	76.90
DBE Total	16.23	42.71	38.01 ***
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)			
African American	0.00	5.23	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.12	0.00
Minority Total	0.00	7.03	0.00 ***
Nonminority female	64.48	14.35	
DBE Total	64.48	21.38	
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	4.93	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.09	0.00
Minority Total	0.00	6.69	0.00 ***
Nonminority female	0.00	13.24	0.00 ***
DBE Total	0.00	19.93	0.00 ***
Florists (NAICS 4531)			
African American	1.12	8.22	13.65
Hispanic	0.00	0.00	
Asian	0.00	3.10	0.00 ***
Native American	0.00	0.00	
Minority Total	1.12	11.32	9.91 **
Nonminority female	0.00	40.53	0.00 ***
DBE Total	1.12	51.85	2.16 ***
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	11.96	0.00 ***
Hispanic	0.00	1.68	0.00 ***
Asian	0.00	0.04	0.00
Native American	0.00	0.16	0.00
Minority Total	0.00	13.84	0.00 ***
Nonminority female	5.40	19.67	27.44 **
DBE Total	5.40	33.51	16.11 ***
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance (NAICS 8113)			
African American	0.00	23.26	0.00 ***
Hispanic	0.00	0.06	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.31	0.00 ***
Nonminority female	0.00	38.45	0.00 ***
DBE Total	0.00	61.77	0.00 ***
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	8.15	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.94	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	11.08	0.00 ***
Nonminority female	0.00	26.61	0.00 ***
DBE Total	0.00	37.69	0.00 ***
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)			
African American	0.00	23.65	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.65	0.00 ***
Nonminority female	0.00	36.25	0.00 ***
DBE Total	0.00	59.89	0.00 ***
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	24.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	24.79	0.00 ***
Nonminority female	0.00	37.04	0.00 ***
DBE Total	0.00	61.83	0.00 ***
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	8.96	0.00 ***
Hispanic	0.00	0.22	0.00
Asian	0.00	1.60	0.00 ***
Native American	0.00	0.82	0.00 ***
Minority Total	0.00	11.59	0.00 ***
Nonminority female	1.99	24.24	8.20 ***
DBE Total	1.99	35.84	5.55 ***
Support Activities for Air Transportation (NAICS 4881)			
African American	0.00	8.95	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	4.94	0.00
Native American	0.00	0.02	0.00
Minority Total	0.00	13.90	0.00 ***
Nonminority female	0.00	25.39	0.00 ***
DBE Total	0.00	39.30	0.00 ***
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	27.59	0.00 ***
Hispanic	0.00	0.65	0.00
Asian	0.00	0.00	
Native American	0.00	0.65	0.00
Minority Total	0.00	28.88	0.00 ***
Nonminority female	0.00	7.76	0.00 ***
DBE Total	0.00	36.64	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)</b>			
African American	13.97	22.20	62.91
Hispanic	0.00	0.13	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.00	
Minority Total	13.97	22.47	62.16
Nonminority female	0.00	40.79	0.00 ***
DBE Total	13.97	63.26	22.08 ***
<b>Other Miscellaneous Manufacturing (NAICS 3399)</b>			
African American	0.00	5.11	0.00 ***
Hispanic	0.00	0.69	0.00
Asian	0.00	0.81	0.00
Native American	8.61	0.69	
Minority Total	8.61	7.30	
Nonminority female	0.00	15.29	0.00 ***
DBE Total	8.61	22.60	38.12
<b>Software Publishers (NAICS 5112)</b>			
African American	0.00	22.63	0.00 ***
Hispanic	0.00	1.23	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.87	0.00 ***
Nonminority female	0.00	38.10	0.00 ***
DBE Total	0.00	61.97	0.00 ***
<b>Architectural and Structural Metals Manufacturing (NAICS 3323)</b>			
African American	0.00	3.05	0.00
Hispanic	0.00	0.70	0.00
Asian	0.00	0.00	
Native American	0.00	0.70	0.00
Minority Total	0.00	4.45	0.00
Nonminority female	0.00	11.99	0.00
DBE Total	0.00	16.44	0.00 ***
<b>Investigation and Security Services (NAICS 5616)</b>			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	1.16	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.58	0.00
Minority Total	0.00	25.32	0.00 ***
Nonminority female	0.00	36.45	0.00 ***
DBE Total	0.00	61.77	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Other Motor Vehicle Dealers (NAICS 4412)</b>			
African American	0.00	7.39	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00
Native American	0.00	0.00	
Minority Total	0.00	10.38	0.00 ***
Nonminority female	0.00	28.52	0.00 ***
DBE Total	0.00	38.91	0.00 ***
<b>Furniture Stores (NAICS 4421)</b>			
African American	0.00	7.92	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.12	0.00 ***
Native American	0.00	0.04	0.00
Minority Total	0.00	11.08	0.00 ***
Nonminority female	10.41	30.17	34.49
DBE Total	10.41	41.25	25.22 ***
<b>Commercial and Service Industry Machinery Manufacturing (NAICS 3333)</b>			
African American	0.00	5.95	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	5.95	0.00 ***
Nonminority female	0.00	12.32	0.00 ***
DBE Total	0.00	18.27	0.00 ***
<b>Full-Service Restaurants (NAICS 7221)</b>			
African American	0.63	9.38	6.74 ***
Hispanic	0.00	4.74	0.00 ***
Asian	0.00	8.40	0.00 ***
Native American	0.00	1.56	0.00 ***
Minority Total	0.63	24.08	2.63 ***
Nonminority female	0.00	15.81	0.00 ***
DBE Total	0.63	39.88	1.59 ***
<b>Medical Equipment and Supplies Manufacturing (NAICS 3391)</b>			
African American	0.00	2.79	0.00
Hispanic	0.00	0.64	0.00
Asian	0.00	0.00	
Native American	0.00	0.64	0.00
Minority Total	0.00	4.06	0.00
Nonminority female	0.00	16.39	0.00
DBE Total	0.00	20.46	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)</b>			
African American	0.00	5.68	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.64	0.00
Native American	0.00	0.12	0.00
Minority Total	0.00	7.44	0.00 ***
Nonminority female	0.00	14.57	0.00 ***
DBE Total	0.00	22.01	0.00 ***
<b>Office Supplies, Stationery, and Gift Stores (NAICS 4532)</b>			
African American	0.00	8.25	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.90	0.00 ***
Native American	0.00	0.79	0.00 ***
Minority Total	0.00	11.95	0.00 ***
Nonminority female	44.30	32.24	
DBE Total	44.30	44.19	
<b>Drycleaning and Laundry Services (NAICS 8123)</b>			
African American	0.00	17.83	0.00 ***
Hispanic	0.00	1.33	0.00 ***
Asian	0.00	1.31	0.00 ***
Native American	0.00	1.18	0.00 ***
Minority Total	0.00	21.66	0.00 ***
Nonminority female	0.00	10.50	0.00 ***
DBE Total	0.00	32.16	0.00 ***
<b>Services to Buildings and Dwellings (NAICS 5617)</b>			
African American	0.00	24.60	0.00 ***
Hispanic	0.00	0.26	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.07	0.00
Minority Total	0.00	25.06	0.00 ***
Nonminority female	0.00	35.94	0.00 ***
DBE Total	0.00	61.00	0.00 ***
<b>Rubber Product Manufacturing (NAICS 3262)</b>			
African American	0.00	6.20	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.71	0.00
Minority Total	0.00	8.58	0.00
Nonminority female	0.00	23.09	0.00 ***
DBE Total	0.00	31.67	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)</b>			
African American	0.00	2.38	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	2.38	0.00
Nonminority female	0.00	15.08	0.00 ***
DBE Total	0.00	17.46	0.00 ***
<b>Grocery and Related Product Merchant Wholesalers (NAICS 4244)</b>			
African American	6.05	7.13	84.83
Hispanic	0.00	0.00	
Asian	0.00	2.10	0.00 ***
Native American	0.00	0.10	0.00
Minority Total	6.05	9.33	64.87
Nonminority female	0.00	13.66	0.00 ***
DBE Total	6.05	22.99	26.32 ***
<b>Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)</b>			
African American	0.00	4.89	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.04	0.00
Minority Total	0.00	6.57	0.00 ***
Nonminority female	0.00	11.48	0.00 ***
DBE Total	0.00	18.06	0.00 ***
<b>Plastics Product Manufacturing (NAICS 3261)</b>			
African American	0.00	9.16	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.20	0.00
Native American	0.00	3.15	0.00
Minority Total	0.00	15.50	0.00 ***
Nonminority female	0.48	20.33	2.35 ***
DBE Total	0.48	35.83	1.33 ***
<b>Clothing Stores (NAICS 4481)</b>			
African American	0.00	10.02	0.00 ***
Hispanic	0.00	0.13	0.00
Asian	0.00	2.96	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	13.10	0.00 ***
Nonminority female	0.00	33.38	0.00 ***
DBE Total	0.00	46.48	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	7.77	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.15	0.00 ***
Native American	0.00	0.02	0.00
Minority Total	0.00	10.95	0.00 ***
Nonminority female	0.00	27.87	0.00 ***
DBE Total	0.00	38.81	0.00 ***
Computer and Peripheral Equipment Manufacturing (NAICS 3341)			
African American	0.00	12.41	0.00 ***
Hispanic	0.00	0.60	0.00
Asian	0.00	0.00	
Native American	0.00	0.60	0.00
Minority Total	0.00	13.62	0.00 ***
Nonminority female	0.00	17.24	0.00 ***
DBE Total	0.00	30.86	0.00 ***
Limited-Service Eating Places (NAICS 7222)			
African American	0.00	9.21	0.00 ***
Hispanic	0.00	4.34	0.00 ***
Asian	0.00	8.62	0.00 ***
Native American	0.00	1.53	0.00 ***
Minority Total	0.00	23.71	0.00 ***
Nonminority female	0.00	14.48	0.00 ***
DBE Total	0.00	38.18	0.00 ***
Traveler Accommodation (NAICS 7211)			
African American	0.00	8.50	0.00 ***
Hispanic	0.00	4.07	0.00 ***
Asian	0.00	13.72	0.00 ***
Native American	0.00	1.54	0.00
Minority Total	0.00	27.83	0.00 ***
Nonminority female	0.00	14.24	0.00 ***
DBE Total	0.00	42.07	0.00 ***
Other Miscellaneous Store Retailers (NAICS 4539)			
African American	0.00	7.60	0.00 ***
Hispanic	0.00	0.85	0.00
Asian	0.00	3.08	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.54	0.00 ***
Nonminority female	38.41	29.66	
DBE Total	38.41	41.20	93.23

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Other Amusement and Recreation Industries (NAICS 7139)			
African American	0.00	9.49	0.00
Hispanic	0.00	4.27	0.00
Asian	0.00	8.34	0.00
Native American	0.00	1.56	0.00
Minority Total	0.00	23.66	0.00 ***
Nonminority female	0.00	15.91	0.00 ***
DBE Total	0.00	39.57	0.00 ***
Building Equipment Contractors (NAICS 2382)			
African American	0.00	9.37	0.00 ***
Hispanic	0.00	1.49	0.00 ***
Asian	0.00	1.32	0.00 ***
Native American	0.00	0.08	0.00
Minority Total	0.00	12.26	0.00 ***
Nonminority female	0.00	7.99	0.00 ***
DBE Total	0.00	20.26	0.00 ***
Automotive Equipment Rental and Leasing (NAICS 5321)			
African American	0.00	17.62	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	17.62	0.00 ***
Nonminority female	1.43	28.62	5.01 ***
DBE Total	1.43	46.23	3.10 ***
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)			
African American	0.00	10.31	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.61	0.00
Native American	0.00	5.03	0.00 ***
Minority Total	0.00	16.95	0.00 ***
Nonminority female	0.00	21.92	0.00 ***
DBE Total	0.00	38.87	0.00 ***
Other Food Manufacturing (NAICS 3119)			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00
Native American	0.00	0.88	0.00
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Building Material and Supplies Dealers (NAICS 4441)			
African American	0.00	7.60	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00 ***
Native American	0.00	0.02	0.00
Minority Total	0.00	10.61	0.00 ***
Nonminority female	0.00	28.66	0.00 ***
DBE Total	0.00	39.27	0.00 ***
Other Textile Product Mills (NAICS 3149)			
African American	0.00	12.08	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00
Native American	0.00	0.52	0.00
Minority Total	0.00	14.27	0.00 ***
Nonminority female	1.17	38.87	3.01 ***
DBE Total	1.17	53.14	2.20 ***
Consumer Goods Rental (NAICS 5322)			
African American	0.00	22.64	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	22.64	0.00
Nonminority female	0.00	38.57	0.00 ***
DBE Total	0.00	61.21	0.00 ***
Waste Collection (NAICS 5621)			
African American	0.00	5.00	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	5.00	0.00
Nonminority female	0.00	85.00	0.00 ***
DBE Total	0.00	90.00	0.00 ***
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	10.01	0.00 ***
Hispanic	0.00	1.51	0.00 ***
Asian	0.00	0.28	0.00
Native American	0.00	0.28	0.00
Minority Total	0.00	12.07	0.00 ***
Nonminority female	0.00	18.85	0.00 ***
DBE Total	0.00	30.92	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Other Professional, Scientific, and Technical Services (NAICS 5419)</b>			
African American	0.00	9.40	0.00 ***
Hispanic	0.00	1.72	0.00
Asian	0.00	0.00	
Native American	0.00	0.05	0.00
Minority Total	0.00	11.17	0.00 ***
Nonminority female	0.00	16.93	0.00 ***
DBE Total	0.00	28.10	0.00 ***
<b>Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)</b>			
African American	0.00	8.43	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.97	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.40	0.00 ***
Nonminority female	0.51	29.22	1.75 ***
DBE Total	0.51	40.62	1.26 ***
<b>Aerospace Product and Parts Manufacturing (NAICS 3364)</b>			
African American	0.00	2.46	0.00
Hispanic	0.00	0.62	0.00
Asian	0.00	14.29	0.00 ***
Native American	0.00	0.62	0.00
Minority Total	0.00	17.98	0.00 ***
Nonminority female	0.00	21.67	0.00 ***
DBE Total	0.00	39.66	0.00 ***
<b>Wired Telecommunications Carriers (NAICS 5171)</b>			
African American	0.00	24.94	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	24.94	0.00 ***
Nonminority female	0.00	36.11	0.00 ***
DBE Total	0.00	61.05	0.00 ***
<b>Lessors of Nonfinancial Intangible Assets (except Copyrighted Works) (NAICS 5331)</b>			
African American	0.00	22.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	22.79	0.00 ***
Nonminority female	0.00	37.28	0.00 ***
DBE Total	0.00	60.07	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)			
African American	0.00	5.41	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.91	0.00
Native American	0.00	0.11	0.00
Minority Total	0.00	7.42	0.00 ***
Nonminority female	16.80	13.86	
DBE Total	16.80	21.28	78.95
Bakeries and Tortilla Manufacturing (NAICS 3118)			
African American	29.74	9.73	
Hispanic	0.00	0.00	
Asian	0.00	2.71	0.00 ***
Native American	0.00	0.64	0.00
Minority Total	29.74	13.08	
Nonminority female	0.00	30.54	0.00 ***
DBE Total	29.74	43.62	68.18 *
Other Personal Services (NAICS 8129)			
African American	0.00	17.46	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	1.32	0.00
Native American	0.00	1.13	0.00
Minority Total	0.00	21.49	0.00 ***
Nonminority female	0.00	11.67	0.00 ***
DBE Total	0.00	33.16	0.00 ***
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)			
African American	0.00	5.04	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.35	0.00
Native American	0.00	0.58	0.00
Minority Total	0.00	6.97	0.00
Nonminority female	0.00	24.76	0.00
DBE Total	0.00	31.73	0.00
Other Ambulatory Health Care Services (NAICS 6219)			
African American	0.00	9.22	0.00 ***
Hispanic	0.00	4.33	0.00 ***
Asian	0.00	8.68	0.00 ***
Native American	0.00	1.49	0.00
Minority Total	0.00	23.73	0.00 ***
Nonminority female	0.00	13.32	0.00 ***
DBE Total	0.00	37.05	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	10.93	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.42	0.00
Minority Total	0.00	13.00	0.00 ***
Nonminority female	0.00	19.48	0.00 ***
DBE Total	0.00	32.48	0.00 ***
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	10.08	0.00 ***
Hispanic	0.00	1.37	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	11.45	0.00 ***
Nonminority female	0.00	24.10	0.00 ***
DBE Total	0.00	35.56	0.00 ***
Other Transportation Equipment Manufacturing (NAICS 3369)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00 ***
DBE Total	0.00	15.52	0.00 ***
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	8.82	0.00 ***
Hispanic	0.00	0.46	0.00
Asian	0.00	0.00	
Native American	0.00	0.46	0.00
Minority Total	0.00	9.74	0.00 ***
Nonminority female	0.00	9.96	0.00 ***
DBE Total	0.00	19.70	0.00 ***
Apparel, Piece Goods, and Notions Merchant Wholesalers (NAICS 4243)			
African American	0.00	6.88	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.66	0.00
Native American	0.00	0.10	0.00
Minority Total	0.00	8.64	0.00 ***
Nonminority female	0.00	12.80	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE Total	0.00	21.44	0.00 ***
Other Support Services (NAICS 5619)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	0.01	0.00
Asian	0.00	0.02	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.61	0.00 ***
Nonminority female	0.00	35.40	0.00 ***
DBE Total	0.00	59.00	0.00 ***
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	22.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	22.65	0.00 ***
Nonminority female	100.00	39.79	
DBE Total	100.00	62.44	
Direct Selling Establishments (NAICS 4543)			
African American	3.58	7.46	48.00
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00
Native American	0.00	0.00	
Minority Total	3.58	10.45	34.29
Nonminority female	0.00	25.37	0.00 ***
DBE Total	3.58	35.82	10.00 ***
Used Merchandise Stores (NAICS 4533)			
African American	0.00	7.59	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.19	0.00
Native American	0.00	0.05	0.00
Minority Total	0.00	10.82	0.00
Nonminority female	0.00	33.32	0.00 ***
DBE Total	0.00	44.15	0.00 ***
General Freight Trucking (NAICS 4841)			
African American	0.00	8.71	0.00
Hispanic	0.00	0.05	0.00
Asian	0.00	2.99	0.00
Native American	0.00	0.02	0.00
Minority Total	0.00	11.77	0.00 ***
Nonminority female	0.00	26.61	0.00 ***
DBE Total	0.00	38.38	0.00 ***
Furniture and Home Furnishing Merchant			

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Wholesalers (NAICS 4232)</b>			
African American	0.00	6.20	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.59	0.00
Minority Total	0.00	8.44	0.00 ***
Nonminority female	0.00	13.64	0.00 ***
DBE Total	0.00	22.08	0.00 ***
<b>Civic and Social Organizations (NAICS 8134)</b>			
African American	0.00	17.25	0.00 ***
Hispanic	0.00	1.30	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.26	0.00
Minority Total	0.00	21.07	0.00 ***
Nonminority female	0.00	9.05	0.00
DBE Total	0.00	30.12	0.00 ***
<b>Automotive Repair and Maintenance (NAICS 8111)</b>			
African American	0.00	17.61	0.00 ***
Hispanic	0.00	1.26	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.34	0.00
Minority Total	0.00	21.46	0.00 ***
Nonminority female	10.08	9.67	
DBE Total	10.08	31.14	32.39
<b>Converted Paper Product Manufacturing (NAICS 3222)</b>			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00
Native American	0.00	0.88	0.00
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***
<b>Other Fabricated Metal Product Manufacturing (NAICS 3329)</b>			
African American	0.00	2.81	0.00
Hispanic	0.00	0.70	0.00
Asian	0.00	0.00	
Native American	0.00	0.70	0.00
Minority Total	0.00	4.21	0.00
Nonminority female	0.00	15.84	0.00 ***
DBE Total	0.00	20.05	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Department Stores (NAICS 4521)			
African American	0.00	7.45	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.01	0.00
Native American	0.00	0.00	
Minority Total	0.00	10.46	0.00
Nonminority female	0.00	27.08	0.00
DBE Total	0.00	37.54	0.00
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS 3334)			
African American	0.00	3.81	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	3.81	0.00
Nonminority female	0.00	24.29	0.00 ***
DBE Total	0.00	28.10	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.20. Industry Group Utilization, Availability, and Disparity Results for JMAA Commodities Contracting (All Funds) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.35	5.70	6.16
Hispanic	0.00	0.00	
Asian	0.00	2.20	0.00 ***
Native American	0.00	0.18	0.00
Minority Total	0.35	8.08	4.35
Nonminority female	0.03	16.52	0.18 ***
DBE Total	0.38	24.61	1.55 ***
Communications Equipment Manufacturing (NAICS 3342)			
African American	0.00	11.54	0.00 ***
Hispanic	0.00	0.63	0.00
Asian	0.00	0.00	
Native American	0.00	0.63	0.00
Minority Total	0.00	12.81	0.00 ***
Nonminority female	0.00	14.40	0.00 ***
DBE Total	0.00	27.21	0.00 ***
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00 ***
DBE Total	0.00	15.52	0.00 ***
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	8.19	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	8.19	0.00 ***
Nonminority female	0.00	18.42	0.00 ***
DBE Total	0.00	26.61	0.00 ***
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)			
African American	0.89	4.86	18.35
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.09	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.89	6.63	13.44 **
Nonminority female	0.00	13.16	0.00 ***
DBE Total	0.89	19.79	4.51 ***
Automobile Dealers (NAICS 4411)			
African American	0.00	7.96	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.08	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.04	0.00 ***
Nonminority female	0.00	26.40	0.00 ***
DBE Total	0.00	37.44	0.00 ***
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	0.00	6.27	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.13	0.00
Minority Total	0.00	8.07	0.00 ***
Nonminority female	0.00	14.58	0.00 ***
DBE Total	0.00	22.65	0.00 ***
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)			
African American	0.00	4.86	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.69	0.00
Native American	0.00	0.10	0.00
Minority Total	0.00	6.64	0.00
Nonminority female	0.00	13.05	0.00 ***
DBE Total	0.00	19.69	0.00 ***
Cut and Sew Apparel Manufacturing (NAICS 3152)			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00 ***
Native American	0.00	0.88	0.00 ***
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	15.01	0.00 ***
Hispanic	0.00	1.90	0.00
Asian	0.00	1.21	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.60	0.00
Minority Total	0.00	18.72	0.00 ***
Nonminority female	18.43	22.05	83.60
DBE Total	18.43	40.77	45.21
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	0.00	8.51	0.00 ***
Hispanic	0.00	2.03	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.77	0.00 ***
Minority Total	0.00	11.31	0.00 ***
Nonminority female	0.00	30.41	0.00 ***
DBE Total	0.00	41.72	0.00 ***
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.00	5.73	0.00 ***
Hispanic	0.00	0.00	
Asian	41.04	1.67	
Native American	0.00	0.16	0.00
Minority Total	41.04	7.55	
Nonminority female	0.00	14.72	0.00 ***
DBE Total	41.04	22.28	
Special Food Services (NAICS 7223)			
African American	2.30	10.33	22.26 ***
Hispanic	0.00	4.36	0.00 ***
Asian	0.00	8.31	0.00 ***
Native American	0.00	1.58	0.00 ***
Minority Total	2.30	24.59	9.35 ***
Nonminority female	13.94	18.12	76.90
DBE Total	16.23	42.71	38.01 ***
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)			
African American	0.00	5.23	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.12	0.00
Minority Total	0.00	7.03	0.00 ***
Nonminority female	64.48	14.35	
DBE Total	64.48	21.38	
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	4.93	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.09	0.00
Minority Total	0.00	6.69	0.00 ***
Nonminority female	0.00	13.24	0.00 ***
DBE Total	0.00	19.93	0.00 ***
Florists (NAICS 4531)			
African American	1.12	8.22	13.65
Hispanic	0.00	0.00	
Asian	0.00	3.10	0.00 ***
Native American	0.00	0.00	
Minority Total	1.12	11.32	9.91 **
Nonminority female	0.00	40.53	0.00 ***
DBE Total	1.12	51.85	2.16 ***
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	11.96	0.00 ***
Hispanic	0.00	1.68	0.00 ***
Asian	0.00	0.04	0.00
Native American	0.00	0.16	0.00
Minority Total	0.00	13.84	0.00 ***
Nonminority female	5.40	19.67	27.44 **
DBE Total	5.40	33.51	16.11 ***
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance (NAICS 8113)			
African American	0.00	23.26	0.00 ***
Hispanic	0.00	0.06	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.31	0.00 ***
Nonminority female	0.00	38.45	0.00 ***
DBE Total	0.00	61.77	0.00 ***
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	8.15	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.94	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	11.08	0.00 ***
Nonminority female	0.00	26.61	0.00 ***
DBE Total	0.00	37.69	0.00 ***
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)			
African American	0.00	23.65	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.65	0.00 ***
Nonminority female	0.00	36.25	0.00 ***
DBE Total	0.00	59.89	0.00 ***
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	24.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	24.79	0.00 ***
Nonminority female	0.00	37.04	0.00 ***
DBE Total	0.00	61.83	0.00 ***
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	8.96	0.00 ***
Hispanic	0.00	0.22	0.00
Asian	0.00	1.60	0.00 ***
Native American	0.00	0.82	0.00 ***
Minority Total	0.00	11.59	0.00 ***
Nonminority female	1.99	24.24	8.20 ***
DBE Total	1.99	35.84	5.55 ***
Support Activities for Air Transportation (NAICS 4881)			
African American	0.00	8.95	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	4.94	0.00
Native American	0.00	0.02	0.00
Minority Total	0.00	13.90	0.00 ***
Nonminority female	0.00	25.39	0.00 ***
DBE Total	0.00	39.30	0.00 ***
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	27.59	0.00 ***
Hispanic	0.00	0.65	0.00
Asian	0.00	0.00	
Native American	0.00	0.65	0.00
Minority Total	0.00	28.88	0.00 ***
Nonminority female	0.00	7.76	0.00 ***
DBE Total	0.00	36.64	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)</b>			
African American	13.97	22.20	62.91
Hispanic	0.00	0.13	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.00	
Minority Total	13.97	22.47	62.16
Nonminority female	0.00	40.79	0.00 ***
DBE Total	13.97	63.26	22.08 ***
<b>Software Publishers (NAICS 5112)</b>			
African American	0.00	22.63	0.00 ***
Hispanic	0.00	1.23	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.87	0.00 ***
Nonminority female	0.00	38.10	0.00 ***
DBE Total	0.00	61.97	0.00 ***
<b>Other Miscellaneous Manufacturing (NAICS 3399)</b>			
African American	0.00	5.11	0.00 ***
Hispanic	0.00	0.69	0.00
Asian	0.00	0.81	0.00
Native American	8.61	0.69	
Minority Total	8.61	7.30	
Nonminority female	0.00	15.29	0.00 ***
DBE Total	8.61	22.60	38.12
<b>Architectural and Structural Metals Manufacturing (NAICS 3323)</b>			
African American	0.00	3.05	0.00
Hispanic	0.00	0.70	0.00
Asian	0.00	0.00	
Native American	0.00	0.70	0.00
Minority Total	0.00	4.45	0.00
Nonminority female	0.00	11.99	0.00
DBE Total	0.00	16.44	0.00 ***
<b>Investigation and Security Services (NAICS 5616)</b>			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	1.16	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.58	0.00
Minority Total	0.00	25.32	0.00 ***
Nonminority female	0.00	36.45	0.00 ***
DBE Total	0.00	61.77	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Other Motor Vehicle Dealers (NAICS 4412)</b>			
African American	0.00	7.39	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00
Native American	0.00	0.00	
Minority Total	0.00	10.38	0.00 ***
Nonminority female	0.00	28.52	0.00 ***
DBE Total	0.00	38.91	0.00 ***
<b>Furniture Stores (NAICS 4421)</b>			
African American	0.00	7.92	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.12	0.00 ***
Native American	0.00	0.04	0.00
Minority Total	0.00	11.08	0.00 ***
Nonminority female	10.41	30.17	34.49
DBE Total	10.41	41.25	25.22 ***
<b>Commercial and Service Industry Machinery Manufacturing (NAICS 3333)</b>			
African American	0.00	5.95	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	5.95	0.00 ***
Nonminority female	0.00	12.32	0.00 ***
DBE Total	0.00	18.27	0.00 ***
<b>Full-Service Restaurants (NAICS 7221)</b>			
African American	0.63	9.38	6.74 ***
Hispanic	0.00	4.74	0.00 ***
Asian	0.00	8.40	0.00 ***
Native American	0.00	1.56	0.00 ***
Minority Total	0.63	24.08	2.63 ***
Nonminority female	0.00	15.81	0.00 ***
DBE Total	0.63	39.88	1.59 ***
<b>Medical Equipment and Supplies Manufacturing (NAICS 3391)</b>			
African American	0.00	2.79	0.00
Hispanic	0.00	0.64	0.00
Asian	0.00	0.00	
Native American	0.00	0.64	0.00
Minority Total	0.00	4.06	0.00
Nonminority female	0.00	16.39	0.00
DBE Total	0.00	20.46	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)</b>			
African American	0.00	5.68	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.64	0.00
Native American	0.00	0.12	0.00
Minority Total	0.00	7.44	0.00 ***
Nonminority female	0.00	14.57	0.00 ***
DBE Total	0.00	22.01	0.00 ***
<b>Office Supplies, Stationery, and Gift Stores (NAICS 4532)</b>			
African American	0.00	8.25	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.90	0.00 ***
Native American	0.00	0.79	0.00 ***
Minority Total	0.00	11.95	0.00 ***
Nonminority female	44.30	32.24	
DBE Total	44.30	44.19	
<b>Drycleaning and Laundry Services (NAICS 8123)</b>			
African American	0.00	17.83	0.00 ***
Hispanic	0.00	1.33	0.00 ***
Asian	0.00	1.31	0.00 ***
Native American	0.00	1.18	0.00 ***
Minority Total	0.00	21.66	0.00 ***
Nonminority female	0.00	10.50	0.00 ***
DBE Total	0.00	32.16	0.00 ***
<b>Services to Buildings and Dwellings (NAICS 5617)</b>			
African American	0.00	24.60	0.00 ***
Hispanic	0.00	0.26	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.07	0.00
Minority Total	0.00	25.06	0.00 ***
Nonminority female	0.00	35.94	0.00 ***
DBE Total	0.00	61.00	0.00 ***
<b>Rubber Product Manufacturing (NAICS 3262)</b>			
African American	0.00	6.20	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.71	0.00
Minority Total	0.00	8.58	0.00
Nonminority female	0.00	23.09	0.00 ***
DBE Total	0.00	31.67	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)</b>			
African American	0.00	2.38	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	2.38	0.00
Nonminority female	0.00	15.08	0.00 ***
DBE Total	0.00	17.46	0.00 ***
<b>Grocery and Related Product Merchant Wholesalers (NAICS 4244)</b>			
African American	6.05	7.13	84.83
Hispanic	0.00	0.00	
Asian	0.00	2.10	0.00 ***
Native American	0.00	0.10	0.00
Minority Total	6.05	9.33	64.87
Nonminority female	0.00	13.66	0.00 ***
DBE Total	6.05	22.99	26.32 ***
<b>Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)</b>			
African American	0.00	4.89	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.04	0.00
Minority Total	0.00	6.57	0.00 ***
Nonminority female	0.00	11.48	0.00 ***
DBE Total	0.00	18.06	0.00 ***
<b>Plastics Product Manufacturing (NAICS 3261)</b>			
African American	0.00	9.16	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.20	0.00
Native American	0.00	3.15	0.00
Minority Total	0.00	15.50	0.00 ***
Nonminority female	0.48	20.33	2.35 ***
DBE Total	0.48	35.83	1.33 ***
<b>Clothing Stores (NAICS 4481)</b>			
African American	0.00	10.02	0.00 ***
Hispanic	0.00	0.13	0.00
Asian	0.00	2.96	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	13.10	0.00 ***
Nonminority female	0.00	33.38	0.00 ***
DBE Total	0.00	46.48	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	7.77	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.15	0.00 ***
Native American	0.00	0.02	0.00
Minority Total	0.00	10.95	0.00 ***
Nonminority female	0.00	27.87	0.00 ***
DBE Total	0.00	38.81	0.00 ***
Computer and Peripheral Equipment Manufacturing (NAICS 3341)			
African American	0.00	12.41	0.00 ***
Hispanic	0.00	0.60	0.00
Asian	0.00	0.00	
Native American	0.00	0.60	0.00
Minority Total	0.00	13.62	0.00 ***
Nonminority female	0.00	17.24	0.00 ***
DBE Total	0.00	30.86	0.00 ***
Limited-Service Eating Places (NAICS 7222)			
African American	0.00	9.21	0.00 ***
Hispanic	0.00	4.34	0.00 ***
Asian	0.00	8.62	0.00 ***
Native American	0.00	1.53	0.00 ***
Minority Total	0.00	23.71	0.00 ***
Nonminority female	0.00	14.48	0.00 ***
DBE Total	0.00	38.18	0.00 ***
Other Miscellaneous Store Retailers (NAICS 4539)			
African American	0.00	7.60	0.00 ***
Hispanic	0.00	0.85	0.00
Asian	0.00	3.08	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.54	0.00 ***
Nonminority female	38.41	29.66	
DBE Total	38.41	41.20	93.23
Traveler Accommodation (NAICS 7211)			
African American	0.00	8.50	0.00 ***
Hispanic	0.00	4.07	0.00 ***
Asian	0.00	13.72	0.00 ***
Native American	0.00	1.54	0.00
Minority Total	0.00	27.83	0.00 ***
Nonminority female	0.00	14.24	0.00 ***
DBE Total	0.00	42.07	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Other Amusement and Recreation Industries (NAICS 7139)</b>			
African American	0.00	9.49	0.00
Hispanic	0.00	4.27	0.00
Asian	0.00	8.34	0.00
Native American	0.00	1.56	0.00
Minority Total	0.00	23.66	0.00 ***
Nonminority female	0.00	15.91	0.00 ***
DBE Total	0.00	39.57	0.00 ***
<b>Building Equipment Contractors (NAICS 2382)</b>			
African American	0.00	9.37	0.00 ***
Hispanic	0.00	1.49	0.00 ***
Asian	0.00	1.32	0.00 ***
Native American	0.00	0.08	0.00
Minority Total	0.00	12.26	0.00 ***
Nonminority female	0.00	7.99	0.00 ***
DBE Total	0.00	20.26	0.00 ***
<b>Automotive Equipment Rental and Leasing (NAICS 5321)</b>			
African American	0.00	17.62	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	17.62	0.00 ***
Nonminority female	1.43	28.62	5.01 ***
DBE Total	1.43	46.23	3.10 ***
<b>Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)</b>			
African American	0.00	10.31	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.61	0.00
Native American	0.00	5.03	0.00 ***
Minority Total	0.00	16.95	0.00 ***
Nonminority female	0.00	21.92	0.00 ***
DBE Total	0.00	38.87	0.00 ***
<b>Other Food Manufacturing (NAICS 3119)</b>			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00
Native American	0.00	0.88	0.00
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Building Material and Supplies Dealers (NAICS 4441)</b>			
African American	0.00	7.60	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00 ***
Native American	0.00	0.02	0.00
Minority Total	0.00	10.61	0.00 ***
Nonminority female	0.00	28.66	0.00 ***
DBE Total	0.00	39.27	0.00 ***
<b>Other Textile Product Mills (NAICS 3149)</b>			
African American	0.00	12.08	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00
Native American	0.00	0.52	0.00
Minority Total	0.00	14.27	0.00 ***
Nonminority female	1.17	38.87	3.01 ***
DBE Total	1.17	53.14	2.20 ***
<b>Consumer Goods Rental (NAICS 5322)</b>			
African American	0.00	22.64	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	22.64	0.00
Nonminority female	0.00	38.57	0.00 ***
DBE Total	0.00	61.21	0.00 ***
<b>Waste Collection (NAICS 5621)</b>			
African American	0.00	5.00	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	5.00	0.00
Nonminority female	0.00	85.00	0.00 ***
DBE Total	0.00	90.00	0.00 ***
<b>Architectural, Engineering, and Related Services (NAICS 5413)</b>			
African American	0.00	10.01	0.00 ***
Hispanic	0.00	1.51	0.00 ***
Asian	0.00	0.28	0.00
Native American	0.00	0.28	0.00
Minority Total	0.00	12.07	0.00 ***
Nonminority female	0.00	18.85	0.00 ***
DBE Total	0.00	30.92	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
<b>Other Professional, Scientific, and Technical Services (NAICS 5419)</b>			
African American	0.00	9.40	0.00 ***
Hispanic	0.00	1.72	0.00
Asian	0.00	0.00	
Native American	0.00	0.05	0.00
Minority Total	0.00	11.17	0.00 ***
Nonminority female	0.00	16.93	0.00 ***
DBE Total	0.00	28.10	0.00 ***
<b>Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)</b>			
African American	0.00	8.43	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.97	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.40	0.00 ***
Nonminority female	0.51	29.22	1.75 ***
DBE Total	0.51	40.62	1.26 ***
<b>Aerospace Product and Parts Manufacturing (NAICS 3364)</b>			
African American	0.00	2.46	0.00
Hispanic	0.00	0.62	0.00
Asian	0.00	14.29	0.00 ***
Native American	0.00	0.62	0.00
Minority Total	0.00	17.98	0.00 ***
Nonminority female	0.00	21.67	0.00 ***
DBE Total	0.00	39.66	0.00 ***
<b>Wired Telecommunications Carriers (NAICS 5171)</b>			
African American	0.00	24.94	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	24.94	0.00 ***
Nonminority female	0.00	36.11	0.00 ***
DBE Total	0.00	61.05	0.00 ***
<b>Lessors of Nonfinancial Intangible Assets (except Copyrighted Works) (NAICS 5331)</b>			
African American	0.00	22.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	22.79	0.00 ***
Nonminority female	0.00	37.28	0.00 ***
DBE Total	0.00	60.07	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)			
African American	0.00	5.41	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.91	0.00
Native American	0.00	0.11	0.00
Minority Total	0.00	7.42	0.00 ***
Nonminority female	16.80	13.86	
DBE Total	16.80	21.28	78.95
Bakeries and Tortilla Manufacturing (NAICS 3118)			
African American	29.74	9.73	
Hispanic	0.00	0.00	
Asian	0.00	2.71	0.00 ***
Native American	0.00	0.64	0.00
Minority Total	29.74	13.08	
Nonminority female	0.00	30.54	0.00 ***
DBE Total	29.74	43.62	68.18 *
Other Personal Services (NAICS 8129)			
African American	0.00	17.46	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	1.32	0.00
Native American	0.00	1.13	0.00
Minority Total	0.00	21.49	0.00 ***
Nonminority female	0.00	11.67	0.00 ***
DBE Total	0.00	33.16	0.00 ***
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)			
African American	0.00	5.04	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.35	0.00
Native American	0.00	0.58	0.00
Minority Total	0.00	6.97	0.00
Nonminority female	0.00	24.76	0.00
DBE Total	0.00	31.73	0.00
Other Ambulatory Health Care Services (NAICS 6219)			
African American	0.00	9.22	0.00 ***
Hispanic	0.00	4.33	0.00 ***
Asian	0.00	8.68	0.00 ***
Native American	0.00	1.49	0.00
Minority Total	0.00	23.73	0.00 ***
Nonminority female	0.00	13.32	0.00 ***
DBE Total	0.00	37.05	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	10.93	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.42	0.00
Minority Total	0.00	13.00	0.00 ***
Nonminority female	0.00	19.48	0.00 ***
DBE Total	0.00	32.48	0.00 ***
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	10.08	0.00 ***
Hispanic	0.00	1.37	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	11.45	0.00 ***
Nonminority female	0.00	24.10	0.00 ***
DBE Total	0.00	35.56	0.00 ***
Other Transportation Equipment Manufacturing (NAICS 3369)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00 ***
DBE Total	0.00	15.52	0.00 ***
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	8.82	0.00 ***
Hispanic	0.00	0.46	0.00
Asian	0.00	0.00	
Native American	0.00	0.46	0.00
Minority Total	0.00	9.74	0.00 ***
Nonminority female	0.00	9.96	0.00 ***
DBE Total	0.00	19.70	0.00 ***
Apparel, Piece Goods, and Notions Merchant Wholesalers (NAICS 4243)			
African American	0.00	6.88	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.66	0.00
Native American	0.00	0.10	0.00
Minority Total	0.00	8.64	0.00 ***
Nonminority female	0.00	12.80	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE Total	0.00	21.44	0.00 ***
Other Support Services (NAICS 5619)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	0.01	0.00
Asian	0.00	0.02	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.61	0.00 ***
Nonminority female	0.00	35.40	0.00 ***
DBE Total	0.00	59.00	0.00 ***
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	22.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	22.65	0.00 ***
Nonminority female	100.00	39.79	
DBE Total	100.00	62.44	
Direct Selling Establishments (NAICS 4543)			
African American	3.58	7.46	48.00
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00
Native American	0.00	0.00	
Minority Total	3.58	10.45	34.29
Nonminority female	0.00	25.37	0.00 ***
DBE Total	3.58	35.82	10.00 ***
Used Merchandise Stores (NAICS 4533)			
African American	0.00	7.59	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.19	0.00
Native American	0.00	0.05	0.00
Minority Total	0.00	10.82	0.00
Nonminority female	0.00	33.32	0.00 ***
DBE Total	0.00	44.15	0.00 ***
General Freight Trucking (NAICS 4841)			
African American	0.00	8.71	0.00
Hispanic	0.00	0.05	0.00
Asian	0.00	2.99	0.00
Native American	0.00	0.02	0.00
Minority Total	0.00	11.77	0.00 ***
Nonminority female	0.00	26.61	0.00 ***
DBE Total	0.00	38.38	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)			
African American	0.00	6.20	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.59	0.00
Minority Total	0.00	8.44	0.00 ***
Nonminority female	0.00	13.64	0.00 ***
DBE Total	0.00	22.08	0.00 ***
Civic and Social Organizations (NAICS 8134)			
African American	0.00	17.25	0.00 ***
Hispanic	0.00	1.30	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.26	0.00
Minority Total	0.00	21.07	0.00 ***
Nonminority female	0.00	9.05	0.00
DBE Total	0.00	30.12	0.00 ***
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	17.61	0.00 ***
Hispanic	0.00	1.26	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.34	0.00
Minority Total	0.00	21.46	0.00 ***
Nonminority female	10.08	9.67	
DBE Total	10.08	31.14	32.39
Converted Paper Product Manufacturing (NAICS 3222)			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00
Native American	0.00	0.88	0.00
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***
Other Fabricated Metal Product Manufacturing (NAICS 3329)			
African American	0.00	2.81	0.00
Hispanic	0.00	0.70	0.00
Asian	0.00	0.00	
Native American	0.00	0.70	0.00
Minority Total	0.00	4.21	0.00
Nonminority female	0.00	15.84	0.00 ***
DBE Total	0.00	20.05	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Department Stores (NAICS 4521)			
African American	0.00	7.45	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.01	0.00
Native American	0.00	0.00	
Minority Total	0.00	10.46	0.00
Nonminority female	0.00	27.08	0.00
DBE Total	0.00	37.54	0.00
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS 3334)			
African American	0.00	3.81	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	3.81	0.00
Nonminority female	0.00	24.29	0.00 ***
DBE Total	0.00	28.10	0.00 ***

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.21. Industry Group Utilization, Availability, and Disparity Results for JMAA Commodities Contracting (Federally-Funded) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	5.84	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.28	0.00
Native American	0.00	0.18	0.00
Minority Total	0.00	8.31	0.00
Nonminority female	0.00	16.64	0.00 ***
DBE Total	0.00	24.95	0.00 ***
Communications Equipment Manufacturing (NAICS 3342)			
African American	0.00	11.64	0.00
Hispanic	0.00	0.63	0.00
Asian	0.00	0.00	
Native American	0.00	0.63	0.00
Minority Total	0.00	12.91	0.00
Nonminority female	0.00	14.47	0.00
DBE Total	0.00	27.38	0.00 ***
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00
DBE Total	0.00	15.52	0.00
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	8.24	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	8.24	0.00
Nonminority female	0.00	18.43	0.00 ***
DBE Total	0.00	26.67	0.00 ***
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)			
African American	0.00	4.86	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.69	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

<b>NAICS Industry Group / DBE Type</b>	<b>Utilization (%)</b>	<b>Availability (%)</b>	<b>Disparity Ratio</b>
Native American	0.00	0.10	0.00
Minority Total	0.00	6.64	0.00
Nonminority female	0.00	13.05	0.00
DBE Total	0.00	19.69	0.00
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.00	5.02	0.00
Hispanic	0.00	0.00	
Asian	100.00	1.67	
Native American	0.00	0.19	0.00
Minority Total	100.00	6.89	
Nonminority female	0.00	15.77	0.00
DBE Total	100.00	22.66	

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.22. Industry Group Utilization, Availability, and Disparity Results for JMAA Commodities Contracting (Federally-Funded) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.00	5.84	0.00
Hispanic	0.00	0.00	
Asian	0.00	2.28	0.00
Native American	0.00	0.18	0.00
Minority Total	0.00	8.31	0.00
Nonminority female	0.00	16.64	0.00 ***
DBE Total	0.00	24.95	0.00 ***
Communications Equipment Manufacturing (NAICS 3342)			
African American	0.00	11.64	0.00
Hispanic	0.00	0.63	0.00
Asian	0.00	0.00	
Native American	0.00	0.63	0.00
Minority Total	0.00	12.91	0.00
Nonminority female	0.00	14.47	0.00
DBE Total	0.00	27.38	0.00 ***
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00
DBE Total	0.00	15.52	0.00
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	8.24	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	8.24	0.00
Nonminority female	0.00	18.43	0.00 ***
DBE Total	0.00	26.67	0.00 ***
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)			
African American	0.00	4.86	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.69	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

<b>NAICS Industry Group / DBE Type</b>	<b>Utilization (%)</b>	<b>Availability (%)</b>	<b>Disparity Ratio</b>
Native American	0.00	0.10	0.00
Minority Total	0.00	6.64	0.00
Nonminority female	0.00	13.05	0.00
DBE Total	0.00	19.69	0.00
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.00	5.02	0.00
Hispanic	0.00	0.00	
Asian	100.00	1.67	
Native American	0.00	0.19	0.00
Minority Total	100.00	6.89	
Nonminority female	0.00	15.77	0.00
DBE Total	100.00	22.66	

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.23. Industry Group Utilization, Availability, and Disparity Results for JMAA Commodities Contracting (Locally-Funded) (Dollars Awarded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.61	5.60	10.86
Hispanic	0.00	0.00	
Asian	0.00	2.14	0.00 ***
Native American	0.00	0.18	0.00
Minority Total	0.61	7.92	7.68
Nonminority female	0.05	16.43	0.32 ***
DBE Total	0.66	24.35	2.71 ***
Communications Equipment Manufacturing (NAICS 3342)			
African American	0.00	11.48	0.00 ***
Hispanic	0.00	0.64	0.00
Asian	0.00	0.00	
Native American	0.00	0.64	0.00
Minority Total	0.00	12.75	0.00 ***
Nonminority female	0.00	14.36	0.00 ***
DBE Total	0.00	27.12	0.00 ***
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)			
African American	0.89	4.86	18.35
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.09	0.00
Minority Total	0.89	6.63	13.44 **
Nonminority female	0.00	13.16	0.00 ***
DBE Total	0.89	19.79	4.51 ***
Automobile Dealers (NAICS 4411)			
African American	0.00	7.96	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.08	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.04	0.00 ***
Nonminority female	0.00	26.40	0.00 ***
DBE Total	0.00	37.44	0.00 ***
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	0.00	6.25	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.12	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	8.04	0.00 ***
Nonminority female	0.00	14.55	0.00 ***
DBE Total	0.00	22.59	0.00 ***
Cut and Sew Apparel Manufacturing (NAICS 3152)			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00 ***
Native American	0.00	0.88	0.00 ***
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	15.01	0.00 ***
Hispanic	0.00	1.90	0.00
Asian	0.00	1.21	0.00
Native American	0.00	0.60	0.00
Minority Total	0.00	18.72	0.00 ***
Nonminority female	18.43	22.05	83.60
DBE Total	18.43	40.77	45.21
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	0.00	8.52	0.00 ***
Hispanic	0.00	2.01	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.75	0.00 ***
Minority Total	0.00	11.28	0.00 ***
Nonminority female	0.00	30.29	0.00 ***
DBE Total	0.00	41.57	0.00 ***
Special Food Services (NAICS 7223)			
African American	2.30	10.33	22.26 ***
Hispanic	0.00	4.36	0.00 ***
Asian	0.00	8.31	0.00 ***
Native American	0.00	1.58	0.00 ***
Minority Total	2.30	24.59	9.35 ***
Nonminority female	13.94	18.12	76.90
DBE Total	16.23	42.71	38.01 ***
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)			
African American	0.00	5.23	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.12	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	7.03	0.00 ***
Nonminority female	64.48	14.35	
DBE Total	64.48	21.38	
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	4.93	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.09	0.00
Minority Total	0.00	6.69	0.00 ***
Nonminority female	0.00	13.24	0.00 ***
DBE Total	0.00	19.93	0.00 ***
Florists (NAICS 4531)			
African American	1.12	8.22	13.65
Hispanic	0.00	0.00	
Asian	0.00	3.10	0.00 ***
Native American	0.00	0.00	
Minority Total	1.12	11.32	9.91 **
Nonminority female	0.00	40.53	0.00 ***
DBE Total	1.12	51.85	2.16 ***
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	11.96	0.00 ***
Hispanic	0.00	1.68	0.00 ***
Asian	0.00	0.04	0.00
Native American	0.00	0.16	0.00
Minority Total	0.00	13.84	0.00 ***
Nonminority female	5.40	19.67	27.44 *
DBE Total	5.40	33.51	16.11 ***
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)			
African American	0.00	23.26	0.00 ***
Hispanic	0.00	0.06	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.31	0.00 ***
Nonminority female	0.00	38.45	0.00 ***
DBE Total	0.00	61.77	0.00 ***
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	8.15	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.94	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.00	
Minority Total	0.00	11.08	0.00 ***
Nonminority female	0.00	26.61	0.00 ***
DBE Total	0.00	37.69	0.00 ***
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)			
African American	0.00	23.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.65	0.00 ***
Nonminority female	0.00	36.25	0.00 ***
DBE Total	0.00	59.89	0.00 ***
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	24.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	24.79	0.00 ***
Nonminority female	0.00	37.04	0.00 ***
DBE Total	0.00	61.83	0.00 ***
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	8.96	0.00 ***
Hispanic	0.00	0.22	0.00
Asian	0.00	1.60	0.00 ***
Native American	0.00	0.82	0.00 ***
Minority Total	0.00	11.59	0.00 ***
Nonminority female	1.99	24.24	8.20 ***
DBE Total	1.99	35.84	5.55 ***
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	26.51	0.00 ***
Hispanic	0.00	0.64	0.00
Asian	0.00	0.29	0.00
Native American	0.00	0.64	0.00
Minority Total	0.00	28.08	0.00 ***
Nonminority female	0.00	8.65	0.00 ***
DBE Total	0.00	36.73	0.00 ***
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.00	6.22	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.13	0.00
Minority Total	0.00	8.01	0.00 ***
Nonminority female	0.00	14.00	0.00 ***
DBE Total	0.00	22.01	0.00 ***
Support Activities for Air Transportation (NAICS 4881)			
African American	0.00	8.95	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	4.94	0.00
Native American	0.00	0.02	0.00
Minority Total	0.00	13.90	0.00 ***
Nonminority female	0.00	25.39	0.00 ***
DBE Total	0.00	39.30	0.00 ***
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	7.97	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	7.97	0.00 ***
Nonminority female	0.00	18.33	0.00 ***
DBE Total	0.00	26.30	0.00 ***
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)			
African American	13.97	22.20	62.91
Hispanic	0.00	0.13	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.00	
Minority Total	13.97	22.47	62.16
Nonminority female	0.00	40.79	0.00 ***
DBE Total	13.97	63.26	22.08 ***
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.00	5.11	0.00 ***
Hispanic	0.00	0.69	0.00
Asian	0.00	0.81	0.00
Native American	8.61	0.69	
Minority Total	8.61	7.30	
Nonminority female	0.00	15.29	0.00 ***
DBE Total	8.61	22.60	38.12
Software Publishers (NAICS 5112)			
African American	0.00	22.63	0.00 ***
Hispanic	0.00	1.23	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.87	0.00 ***
Nonminority female	0.00	38.10	0.00 ***
DBE Total	0.00	61.97	0.00 ***
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	0.00	3.05	0.00
Hispanic	0.00	0.70	0.00
Asian	0.00	0.00	
Native American	0.00	0.70	0.00
Minority Total	0.00	4.45	0.00
Nonminority female	0.00	11.99	0.00
DBE Total	0.00	16.44	0.00 ***
Investigation and Security Services (NAICS 5616)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	1.16	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.58	0.00
Minority Total	0.00	25.32	0.00 ***
Nonminority female	0.00	36.45	0.00 ***
DBE Total	0.00	61.77	0.00 ***
Other Motor Vehicle Dealers (NAICS 4412)			
African American	0.00	7.39	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00
Native American	0.00	0.00	
Minority Total	0.00	10.38	0.00 ***
Nonminority female	0.00	28.52	0.00 ***
DBE Total	0.00	38.91	0.00 ***
Furniture Stores (NAICS 4421)			
African American	0.00	7.92	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.12	0.00 ***
Native American	0.00	0.04	0.00
Minority Total	0.00	11.08	0.00 ***
Nonminority female	10.41	30.17	34.49
DBE Total	10.41	41.25	25.22 ***
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	5.95	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.00	
Minority Total	0.00	5.95	0.00 ***
Nonminority female	0.00	12.32	0.00 ***
DBE Total	0.00	18.27	0.00 ***
Full-Service Restaurants (NAICS 7221)			
African American	0.63	9.38	6.74 ***
Hispanic	0.00	4.74	0.00 ***
Asian	0.00	8.40	0.00 ***
Native American	0.00	1.56	0.00 ***
Minority Total	0.63	24.08	2.63 ***
Nonminority female	0.00	15.81	0.00 ***
DBE Total	0.63	39.88	1.59 ***
Medical Equipment and Supplies Manufacturing (NAICS 3391)			
African American	0.00	2.79	0.00
Hispanic	0.00	0.64	0.00
Asian	0.00	0.00	
Native American	0.00	0.64	0.00
Minority Total	0.00	4.06	0.00
Nonminority female	0.00	16.39	0.00
DBE Total	0.00	20.46	0.00
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	5.68	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.64	0.00
Native American	0.00	0.12	0.00
Minority Total	0.00	7.44	0.00 ***
Nonminority female	0.00	14.57	0.00 ***
DBE Total	0.00	22.01	0.00 ***
Office Supplies, Stationery, and Gift Stores (NAICS 4532)			
African American	0.00	8.25	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.90	0.00 ***
Native American	0.00	0.79	0.00 ***
Minority Total	0.00	11.95	0.00 ***
Nonminority female	44.30	32.24	
DBE Total	44.30	44.19	
Drycleaning and Laundry Services (NAICS 8123)			
African American	0.00	17.83	0.00 ***
Hispanic	0.00	1.33	0.00 ***
Asian	0.00	1.31	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	1.18	0.00 ***
Minority Total	0.00	21.66	0.00 ***
Nonminority female	0.00	10.50	0.00 ***
DBE Total	0.00	32.16	0.00 ***
Plastics Product Manufacturing (NAICS 3261)			
African American	0.00	8.98	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.08	0.00
Native American	0.00	2.96	0.00
Minority Total	0.00	15.01	0.00 ***
Nonminority female	0.48	20.24	2.36 ***
DBE Total	0.48	35.25	1.35 ***
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	24.60	0.00 ***
Hispanic	0.00	0.26	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.07	0.00
Minority Total	0.00	25.06	0.00 ***
Nonminority female	0.00	35.94	0.00 ***
DBE Total	0.00	61.00	0.00 ***
Rubber Product Manufacturing (NAICS 3262)			
African American	0.00	6.20	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.71	0.00
Minority Total	0.00	8.58	0.00
Nonminority female	0.00	23.09	0.00 ***
DBE Total	0.00	31.67	0.00 ***
Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)			
African American	0.00	2.38	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	2.38	0.00
Nonminority female	0.00	15.08	0.00 ***
DBE Total	0.00	17.46	0.00 ***
Grocery and Related Product Merchant Wholesalers (NAICS 4244)			
African American	6.05	7.13	84.83
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	2.10	0.00 ***
Native American	0.00	0.10	0.00
Minority Total	6.05	9.33	64.87
Nonminority female	0.00	13.66	0.00 ***
DBE Total	6.05	22.99	26.32 ***
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	4.89	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.04	0.00
Minority Total	0.00	6.57	0.00 ***
Nonminority female	0.00	11.48	0.00 ***
DBE Total	0.00	18.06	0.00 ***
Clothing Stores (NAICS 4481)			
African American	0.00	10.02	0.00 ***
Hispanic	0.00	0.13	0.00
Asian	0.00	2.96	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	13.10	0.00 ***
Nonminority female	0.00	33.38	0.00 ***
DBE Total	0.00	46.48	0.00 ***
Limited-Service Eating Places (NAICS 7222)			
African American	0.00	9.16	0.00 ***
Hispanic	0.00	4.34	0.00 ***
Asian	0.00	8.60	0.00 ***
Native American	0.00	1.54	0.00 ***
Minority Total	0.00	23.65	0.00 ***
Nonminority female	0.00	14.70	0.00 ***
DBE Total	0.00	38.34	0.00 ***
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	7.77	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.15	0.00 ***
Native American	0.00	0.02	0.00
Minority Total	0.00	10.95	0.00 ***
Nonminority female	0.00	27.87	0.00 ***
DBE Total	0.00	38.81	0.00 ***
Computer and Peripheral Equipment Manufacturing (NAICS 3341)			
African American	0.00	12.41	0.00 ***
Hispanic	0.00	0.60	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.00	
Native American	0.00	0.60	0.00
Minority Total	0.00	13.62	0.00 ***
Nonminority female	0.00	17.24	0.00 ***
DBE Total	0.00	30.86	0.00 ***
Traveler Accommodation (NAICS 7211)			
African American	0.00	8.50	0.00 ***
Hispanic	0.00	4.07	0.00 ***
Asian	0.00	13.72	0.00 ***
Native American	0.00	1.54	0.00
Minority Total	0.00	27.83	0.00 ***
Nonminority female	0.00	14.24	0.00 ***
DBE Total	0.00	42.07	0.00 ***
Other Miscellaneous Store Retailers (NAICS 4539)			
African American	0.00	7.60	0.00 ***
Hispanic	0.00	0.85	0.00
Asian	0.00	3.08	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.54	0.00 ***
Nonminority female	38.41	29.66	
DBE Total	38.41	41.20	93.23
Other Amusement and Recreation Industries (NAICS 7139)			
African American	0.00	9.49	0.00
Hispanic	0.00	4.27	0.00
Asian	0.00	8.34	0.00
Native American	0.00	1.56	0.00
Minority Total	0.00	23.66	0.00 ***
Nonminority female	0.00	15.91	0.00 ***
DBE Total	0.00	39.57	0.00 ***
Building Equipment Contractors (NAICS 2382)			
African American	0.00	9.37	0.00 ***
Hispanic	0.00	1.49	0.00 ***
Asian	0.00	1.32	0.00 ***
Native American	0.00	0.08	0.00
Minority Total	0.00	12.26	0.00 ***
Nonminority female	0.00	7.99	0.00 ***
DBE Total	0.00	20.26	0.00 ***
Automotive Equipment Rental and Leasing (NAICS 5321)			
African American	0.00	17.62	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	17.62	0.00 ***
Nonminority female	1.43	28.62	5.01 ***
DBE Total	1.43	46.23	3.10 ***
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)			
African American	0.00	10.31	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.61	0.00
Native American	0.00	5.03	0.00 ***
Minority Total	0.00	16.95	0.00 ***
Nonminority female	0.00	21.92	0.00 ***
DBE Total	0.00	38.87	0.00 ***
Other Food Manufacturing (NAICS 3119)			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00
Native American	0.00	0.88	0.00
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***
Building Material and Supplies Dealers (NAICS 4441)			
African American	0.00	7.60	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00 ***
Native American	0.00	0.02	0.00
Minority Total	0.00	10.61	0.00 ***
Nonminority female	0.00	28.66	0.00 ***
DBE Total	0.00	39.27	0.00 ***
Other Textile Product Mills (NAICS 3149)			
African American	0.00	12.08	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00
Native American	0.00	0.52	0.00
Minority Total	0.00	14.27	0.00 ***
Nonminority female	1.17	38.87	3.01 ***
DBE Total	1.17	53.14	2.20 ***
Consumer Goods Rental (NAICS 5322)			
African American	0.00	22.64	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	22.64	0.00
Nonminority female	0.00	38.57	0.00 ***
DBE Total	0.00	61.21	0.00 ***
Waste Collection (NAICS 5621)			
African American	0.00	5.00	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	5.00	0.00
Nonminority female	0.00	85.00	0.00 ***
DBE Total	0.00	90.00	0.00 ***
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	10.01	0.00 ***
Hispanic	0.00	1.51	0.00 ***
Asian	0.00	0.28	0.00
Native American	0.00	0.28	0.00
Minority Total	0.00	12.07	0.00 ***
Nonminority female	0.00	18.85	0.00 ***
DBE Total	0.00	30.92	0.00 ***
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)			
African American	0.00	8.43	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.97	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.40	0.00 ***
Nonminority female	0.51	29.22	1.75 ***
DBE Total	0.51	40.62	1.26 ***
Aerospace Product and Parts Manufacturing (NAICS 3364)			
African American	0.00	2.46	0.00
Hispanic	0.00	0.62	0.00
Asian	0.00	14.29	0.00 ***
Native American	0.00	0.62	0.00
Minority Total	0.00	17.98	0.00 ***
Nonminority female	0.00	21.67	0.00 ***
DBE Total	0.00	39.66	0.00 ***
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	24.94	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	24.94	0.00 ***
Nonminority female	0.00	36.11	0.00 ***
DBE Total	0.00	61.05	0.00 ***
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works) (NAICS 5331)			
African American	0.00	22.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	22.79	0.00 ***
Nonminority female	0.00	37.28	0.00 ***
DBE Total	0.00	60.07	0.00 ***
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)			
African American	0.00	5.41	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.91	0.00
Native American	0.00	0.11	0.00
Minority Total	0.00	7.42	0.00 ***
Nonminority female	16.80	13.86	
DBE Total	16.80	21.28	78.95
Bakeries and Tortilla Manufacturing (NAICS 3118)			
African American	29.74	9.73	
Hispanic	0.00	0.00	
Asian	0.00	2.71	0.00 ***
Native American	0.00	0.64	0.00
Minority Total	29.74	13.08	
Nonminority female	0.00	30.54	0.00 ***
DBE Total	29.74	43.62	68.18 *
Other Personal Services (NAICS 8129)			
African American	0.00	17.46	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	1.32	0.00
Native American	0.00	1.13	0.00
Minority Total	0.00	21.49	0.00 ***
Nonminority female	0.00	11.67	0.00 ***
DBE Total	0.00	33.16	0.00 ***
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)			
African American	0.00	5.04	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.35	0.00
Native American	0.00	0.58	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	6.97	0.00
Nonminority female	0.00	24.76	0.00
DBE Total	0.00	31.73	0.00
Other Ambulatory Health Care Services (NAICS 6219)			
African American	0.00	9.22	0.00 ***
Hispanic	0.00	4.33	0.00 ***
Asian	0.00	8.68	0.00 ***
Native American	0.00	1.49	0.00
Minority Total	0.00	23.73	0.00 ***
Nonminority female	0.00	13.32	0.00 ***
DBE Total	0.00	37.05	0.00 ***
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	10.93	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.42	0.00
Minority Total	0.00	13.00	0.00 ***
Nonminority female	0.00	19.48	0.00 ***
DBE Total	0.00	32.48	0.00 ***
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	10.08	0.00 ***
Hispanic	0.00	1.37	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	11.45	0.00 ***
Nonminority female	0.00	24.10	0.00 ***
DBE Total	0.00	35.56	0.00 ***
Other Transportation Equipment Manufacturing (NAICS 3369)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00 ***
DBE Total	0.00	15.52	0.00 ***
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)			
African American	0.00	5.89	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.45	0.00
Minority Total	0.00	8.01	0.00 ***
Nonminority female	0.00	14.66	0.00 ***
DBE Total	0.00	22.67	0.00 ***
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)			
African American	0.00	4.86	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.69	0.00
Native American	0.00	0.10	0.00
Minority Total	0.00	6.64	0.00
Nonminority female	0.00	13.05	0.00 ***
DBE Total	0.00	19.69	0.00 ***
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	8.82	0.00 ***
Hispanic	0.00	0.46	0.00
Asian	0.00	0.00	
Native American	0.00	0.46	0.00
Minority Total	0.00	9.74	0.00 ***
Nonminority female	0.00	9.96	0.00 ***
DBE Total	0.00	19.70	0.00 ***
Apparel, Piece Goods, and Notions Merchant Wholesalers (NAICS 4243)			
African American	0.00	6.88	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.66	0.00
Native American	0.00	0.10	0.00
Minority Total	0.00	8.64	0.00 ***
Nonminority female	0.00	12.80	0.00 ***
DBE Total	0.00	21.44	0.00 ***
Other Support Services (NAICS 5619)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	0.01	0.00
Asian	0.00	0.02	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.61	0.00 ***
Nonminority female	0.00	35.40	0.00 ***
DBE Total	0.00	59.00	0.00 ***
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	22.65	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	22.65	0.00 ***
Nonminority female	100.00	39.79	
DBE Total	100.00	62.44	
Direct Selling Establishments (NAICS 4543)			
African American	3.58	7.46	48.00
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00
Native American	0.00	0.00	
Minority Total	3.58	10.45	34.29
Nonminority female	0.00	25.37	0.00 ***
DBE Total	3.58	35.82	10.00 ***
Used Merchandise Stores (NAICS 4533)			
African American	0.00	7.59	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.19	0.00
Native American	0.00	0.05	0.00
Minority Total	0.00	10.82	0.00
Nonminority female	0.00	33.32	0.00 ***
DBE Total	0.00	44.15	0.00 ***
General Freight Trucking (NAICS 4841)			
African American	0.00	8.71	0.00
Hispanic	0.00	0.05	0.00
Asian	0.00	2.99	0.00
Native American	0.00	0.02	0.00
Minority Total	0.00	11.77	0.00
Nonminority female	0.00	26.61	0.00 ***
DBE Total	0.00	38.38	0.00 ***
Civic and Social Organizations (NAICS 8134)			
African American	0.00	17.25	0.00 ***
Hispanic	0.00	1.30	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.26	0.00
Minority Total	0.00	21.07	0.00 ***
Nonminority female	0.00	9.05	0.00
DBE Total	0.00	30.12	0.00 ***
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00
DBE Total	0.00	15.52	0.00 ***
Converted Paper Product Manufacturing (NAICS 3222)			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00
Native American	0.00	0.88	0.00
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***
Other Fabricated Metal Product Manufacturing (NAICS 3329)			
African American	0.00	2.81	0.00
Hispanic	0.00	0.70	0.00
Asian	0.00	0.00	
Native American	0.00	0.70	0.00
Minority Total	0.00	4.21	0.00
Nonminority female	0.00	15.84	0.00 ***
DBE Total	0.00	20.05	0.00 ***
Department Stores (NAICS 4521)			
African American	0.00	7.45	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.01	0.00
Native American	0.00	0.00	
Minority Total	0.00	10.46	0.00
Nonminority female	0.00	27.08	0.00
DBE Total	0.00	37.54	0.00
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS 3334)			
African American	0.00	3.81	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	3.81	0.00
Nonminority female	0.00	24.29	0.00 ***
DBE Total	0.00	28.10	0.00 ***
Museums, Historical Sites, and Similar Institutions (NAICS 7121)			
African American	0.00	9.19	0.00
Hispanic	0.00	4.38	0.00
Asian	0.00	8.76	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	1.46	0.00
Minority Total	0.00	23.80	0.00 ***
Nonminority female	0.00	11.86	0.00
DBE Total	0.00	35.65	0.00 ***
Lessors of Real Estate (NAICS 5311)			
African American	0.00	23.44	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.24	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.67	0.00
Nonminority female	0.00	35.82	0.00 ***
DBE Total	0.00	59.49	0.00 ***
Electrical Equipment Manufacturing (NAICS 3353)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00
DBE Total	0.00	15.52	0.00
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	7.93	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.49	0.00
Native American	0.00	0.65	0.00
Minority Total	0.00	10.07	0.00
Nonminority female	0.00	22.16	0.00
DBE Total	0.00	32.23	0.00 ***
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	17.61	0.00 ***
Hispanic	0.00	1.26	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.34	0.00
Minority Total	0.00	21.46	0.00 ***
Nonminority female	12.75	9.67	
DBE Total	12.75	31.14	40.94

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.24. Industry Group Utilization, Availability, and Disparity Results for JMAA Construction Contracting (Locally-Funded) (Dollars Paid)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Machinery, Equipment, and Supplies Merchant Wholesalers (NAICS 4238)			
African American	0.61	5.60	10.86
Hispanic	0.00	0.00	
Asian	0.00	2.14	0.00 ***
Native American	0.00	0.18	0.00
Minority Total	0.61	7.92	7.68
Nonminority female	0.05	16.43	0.32 ***
DBE Total	0.66	24.35	2.71 ***
Communications Equipment Manufacturing (NAICS 3342)			
African American	0.00	11.48	0.00 ***
Hispanic	0.00	0.64	0.00
Asian	0.00	0.00	
Native American	0.00	0.64	0.00
Minority Total	0.00	12.75	0.00 ***
Nonminority female	0.00	14.36	0.00 ***
DBE Total	0.00	27.12	0.00 ***
Petroleum and Petroleum Products Merchant Wholesalers (NAICS 4247)			
African American	0.89	4.86	18.35
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.09	0.00
Minority Total	0.89	6.63	13.44 **
Nonminority female	0.00	13.16	0.00 ***
DBE Total	0.89	19.79	4.51 ***
Automobile Dealers (NAICS 4411)			
African American	0.00	7.96	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.08	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.04	0.00 ***
Nonminority female	0.00	26.40	0.00 ***
DBE Total	0.00	37.44	0.00 ***
Professional and Commercial Equipment and Supplies Merchant Wholesalers (NAICS 4234)			
African American	0.00	6.25	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.12	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	8.04	0.00 ***
Nonminority female	0.00	14.55	0.00 ***
DBE Total	0.00	22.59	0.00 ***
Cut and Sew Apparel Manufacturing (NAICS 3152)			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00 ***
Native American	0.00	0.88	0.00 ***
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***
Computer Systems Design and Related Services (NAICS 5415)			
African American	0.00	15.01	0.00 ***
Hispanic	0.00	1.90	0.00
Asian	0.00	1.21	0.00
Native American	0.00	0.60	0.00
Minority Total	0.00	18.72	0.00 ***
Nonminority female	18.43	22.05	83.60
DBE Total	18.43	40.77	45.21
Advertising, Public Relations, and Related Services (NAICS 5418)			
African American	0.00	8.51	0.00 ***
Hispanic	0.00	2.03	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.77	0.00 ***
Minority Total	0.00	11.31	0.00 ***
Nonminority female	0.00	30.41	0.00 ***
DBE Total	0.00	41.72	0.00 ***
Special Food Services (NAICS 7223)			
African American	2.30	10.33	22.26 ***
Hispanic	0.00	4.36	0.00 ***
Asian	0.00	8.31	0.00 ***
Native American	0.00	1.58	0.00 ***
Minority Total	2.30	24.59	9.35 ***
Nonminority female	13.94	18.12	76.90
DBE Total	16.23	42.71	38.01 ***
Miscellaneous Durable Goods Merchant Wholesalers (NAICS 4239)			
African American	0.00	5.23	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.12	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	7.03	0.00 ***
Nonminority female	64.48	14.35	
DBE Total	64.48	21.38	
Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (NAICS 4237)			
African American	0.00	4.93	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.09	0.00
Minority Total	0.00	6.69	0.00 ***
Nonminority female	0.00	13.24	0.00 ***
DBE Total	0.00	19.93	0.00 ***
Florists (NAICS 4531)			
African American	1.12	8.22	13.65
Hispanic	0.00	0.00	
Asian	0.00	3.10	0.00 ***
Native American	0.00	0.00	
Minority Total	1.12	11.32	9.91 **
Nonminority female	0.00	40.53	0.00 ***
DBE Total	1.12	51.85	2.16 ***
Management, Scientific, and Technical Consulting Services (NAICS 5416)			
African American	0.00	11.96	0.00 ***
Hispanic	0.00	1.68	0.00 ***
Asian	0.00	0.04	0.00
Native American	0.00	0.16	0.00
Minority Total	0.00	13.84	0.00 ***
Nonminority female	5.40	19.67	27.44
DBE Total	5.40	33.51	16.11 ***
Commercial and Industrial Machinery and Equipment Rental and Leasing (NAICS 5324)			
African American	0.00	23.26	0.00 ***
Hispanic	0.00	0.06	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.31	0.00 ***
Nonminority female	0.00	38.45	0.00 ***
DBE Total	0.00	61.77	0.00 ***
Automotive Parts, Accessories, and Tire Stores (NAICS 4413)			
African American	0.00	8.15	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.94	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.00	
Minority Total	0.00	11.08	0.00 ***
Nonminority female	0.00	26.61	0.00 ***
DBE Total	0.00	37.69	0.00 ***
Wireless Telecommunications Carriers (except Satellite) (NAICS 5172)			
African American	0.00	23.65	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.65	0.00 ***
Nonminority female	0.00	36.25	0.00 ***
DBE Total	0.00	59.89	0.00 ***
Data Processing, Hosting, and Related Services (NAICS 5182)			
African American	0.00	24.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	24.79	0.00 ***
Nonminority female	0.00	37.04	0.00 ***
DBE Total	0.00	61.83	0.00 ***
Printing and Related Support Activities (NAICS 3231)			
African American	0.00	8.96	0.00 ***
Hispanic	0.00	0.22	0.00
Asian	0.00	1.60	0.00 ***
Native American	0.00	0.82	0.00 ***
Minority Total	0.00	11.59	0.00 ***
Nonminority female	1.99	24.24	8.20 ***
DBE Total	1.99	35.84	5.55 ***
Electric Lighting Equipment Manufacturing (NAICS 3351)			
African American	0.00	26.51	0.00 ***
Hispanic	0.00	0.64	0.00
Asian	0.00	0.29	0.00
Native American	0.00	0.64	0.00
Minority Total	0.00	28.08	0.00 ***
Nonminority female	0.00	8.65	0.00 ***
DBE Total	0.00	36.73	0.00 ***
Electrical and Electronic Goods Merchant Wholesalers (NAICS 4236)			
African American	0.00	6.22	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	1.67	0.00 ***
Native American	0.00	0.13	0.00
Minority Total	0.00	8.01	0.00 ***
Nonminority female	0.00	14.00	0.00 ***
DBE Total	0.00	22.01	0.00 ***
Support Activities for Air Transportation (NAICS 4881)			
African American	0.00	8.95	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	4.94	0.00
Native American	0.00	0.02	0.00
Minority Total	0.00	13.90	0.00 ***
Nonminority female	0.00	25.39	0.00 ***
DBE Total	0.00	39.30	0.00 ***
Other General Purpose Machinery Manufacturing (NAICS 3339)			
African American	0.00	7.97	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	7.97	0.00 ***
Nonminority female	0.00	18.33	0.00 ***
DBE Total	0.00	26.30	0.00 ***
Newspaper, Periodical, Book, and Directory Publishers (NAICS 5111)			
African American	13.97	22.20	62.91
Hispanic	0.00	0.13	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.00	
Minority Total	13.97	22.47	62.16
Nonminority female	0.00	40.79	0.00 ***
DBE Total	13.97	63.26	22.08 ***
Software Publishers (NAICS 5112)			
African American	0.00	22.63	0.00 ***
Hispanic	0.00	1.23	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	23.87	0.00 ***
Nonminority female	0.00	38.10	0.00 ***
DBE Total	0.00	61.97	0.00 ***
Other Miscellaneous Manufacturing (NAICS 3399)			
African American	0.00	5.11	0.00 ***
Hispanic	0.00	0.69	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.81	0.00
Native American	8.61	0.69	
Minority Total	8.61	7.30	
Nonminority female	0.00	15.29	0.00 ***
DBE Total	8.61	22.60	38.12
Architectural and Structural Metals Manufacturing (NAICS 3323)			
African American	0.00	3.05	0.00
Hispanic	0.00	0.70	0.00
Asian	0.00	0.00	
Native American	0.00	0.70	0.00
Minority Total	0.00	4.45	0.00
Nonminority female	0.00	11.99	0.00
DBE Total	0.00	16.44	0.00 ***
Investigation and Security Services (NAICS 5616)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	1.16	0.00 ***
Asian	0.00	0.00	
Native American	0.00	0.58	0.00
Minority Total	0.00	25.32	0.00 ***
Nonminority female	0.00	36.45	0.00 ***
DBE Total	0.00	61.77	0.00 ***
Other Motor Vehicle Dealers (NAICS 4412)			
African American	0.00	7.39	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00
Native American	0.00	0.00	
Minority Total	0.00	10.38	0.00 ***
Nonminority female	0.00	28.52	0.00 ***
DBE Total	0.00	38.91	0.00 ***
Furniture Stores (NAICS 4421)			
African American	0.00	7.92	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.12	0.00 ***
Native American	0.00	0.04	0.00
Minority Total	0.00	11.08	0.00 ***
Nonminority female	10.41	30.17	34.49
DBE Total	10.41	41.25	25.22 ***
Commercial and Service Industry Machinery Manufacturing (NAICS 3333)			
African American	0.00	5.95	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.00	
Minority Total	0.00	5.95	0.00 ***
Nonminority female	0.00	12.32	0.00 ***
DBE Total	0.00	18.27	0.00 ***
Full-Service Restaurants (NAICS 7221)			
African American	0.63	9.38	6.74 ***
Hispanic	0.00	4.74	0.00 ***
Asian	0.00	8.40	0.00 ***
Native American	0.00	1.56	0.00 ***
Minority Total	0.63	24.08	2.63 ***
Nonminority female	0.00	15.81	0.00 ***
DBE Total	0.63	39.88	1.59 ***
Medical Equipment and Supplies Manufacturing (NAICS 3391)			
African American	0.00	2.79	0.00
Hispanic	0.00	0.64	0.00
Asian	0.00	0.00	
Native American	0.00	0.64	0.00
Minority Total	0.00	4.06	0.00
Nonminority female	0.00	16.39	0.00
DBE Total	0.00	20.46	0.00
Lumber and Other Construction Materials Merchant Wholesalers (NAICS 4233)			
African American	0.00	5.68	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.64	0.00
Native American	0.00	0.12	0.00
Minority Total	0.00	7.44	0.00 ***
Nonminority female	0.00	14.57	0.00 ***
DBE Total	0.00	22.01	0.00 ***
Office Supplies, Stationery, and Gift Stores (NAICS 4532)			
African American	0.00	8.25	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.90	0.00 ***
Native American	0.00	0.79	0.00 ***
Minority Total	0.00	11.95	0.00 ***
Nonminority female	44.30	32.24	
DBE Total	44.30	44.19	
Drycleaning and Laundry Services (NAICS 8123)			
African American	0.00	17.83	0.00 ***
Hispanic	0.00	1.33	0.00 ***
Asian	0.00	1.31	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	1.18	0.00 ***
Minority Total	0.00	21.66	0.00 ***
Nonminority female	0.00	10.50	0.00 ***
DBE Total	0.00	32.16	0.00 ***
Plastics Product Manufacturing (NAICS 3261)			
African American	0.00	8.98	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.08	0.00
Native American	0.00	2.96	0.00
Minority Total	0.00	15.01	0.00 ***
Nonminority female	0.48	20.24	2.36 ***
DBE Total	0.48	35.25	1.35 ***
Services to Buildings and Dwellings (NAICS 5617)			
African American	0.00	24.60	0.00 ***
Hispanic	0.00	0.26	0.00
Asian	0.00	0.13	0.00
Native American	0.00	0.07	0.00
Minority Total	0.00	25.06	0.00 ***
Nonminority female	0.00	35.94	0.00 ***
DBE Total	0.00	61.00	0.00 ***
Rubber Product Manufacturing (NAICS 3262)			
African American	0.00	6.20	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.68	0.00
Native American	0.00	0.71	0.00
Minority Total	0.00	8.58	0.00
Nonminority female	0.00	23.09	0.00 ***
DBE Total	0.00	31.67	0.00 ***
Agriculture, Construction, and Mining Machinery Manufacturing (NAICS 3331)			
African American	0.00	2.38	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	2.38	0.00
Nonminority female	0.00	15.08	0.00 ***
DBE Total	0.00	17.46	0.00 ***
Grocery and Related Product Merchant Wholesalers (NAICS 4244)			
African American	6.05	7.13	84.83
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	2.10	0.00 ***
Native American	0.00	0.10	0.00
Minority Total	6.05	9.33	64.87
Nonminority female	0.00	13.66	0.00 ***
DBE Total	6.05	22.99	26.32 ***
Metal and Mineral (except Petroleum) Merchant Wholesalers (NAICS 4235)			
African American	0.00	4.89	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.04	0.00
Minority Total	0.00	6.57	0.00 ***
Nonminority female	0.00	11.48	0.00 ***
DBE Total	0.00	18.06	0.00 ***
Clothing Stores (NAICS 4481)			
African American	0.00	10.02	0.00 ***
Hispanic	0.00	0.13	0.00
Asian	0.00	2.96	0.00 ***
Native American	0.00	0.00	
Minority Total	0.00	13.10	0.00 ***
Nonminority female	0.00	33.38	0.00 ***
DBE Total	0.00	46.48	0.00 ***
Limited-Service Eating Places (NAICS 7222)			
African American	0.00	9.16	0.00 ***
Hispanic	0.00	4.34	0.00 ***
Asian	0.00	8.60	0.00 ***
Native American	0.00	1.54	0.00 ***
Minority Total	0.00	23.65	0.00 ***
Nonminority female	0.00	14.70	0.00 ***
DBE Total	0.00	38.34	0.00 ***
Electronics and Appliance Stores (NAICS 4431)			
African American	0.00	7.77	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	3.15	0.00 ***
Native American	0.00	0.02	0.00
Minority Total	0.00	10.95	0.00 ***
Nonminority female	0.00	27.87	0.00 ***
DBE Total	0.00	38.81	0.00 ***
Computer and Peripheral Equipment Manufacturing (NAICS 3341)			
African American	0.00	12.41	0.00 ***
Hispanic	0.00	0.60	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.00	
Native American	0.00	0.60	0.00
Minority Total	0.00	13.62	0.00 ***
Nonminority female	0.00	17.24	0.00 ***
DBE Total	0.00	30.86	0.00 ***
Other Miscellaneous Store Retailers (NAICS 4539)			
African American	0.00	7.60	0.00 ***
Hispanic	0.00	0.85	0.00
Asian	0.00	3.08	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.54	0.00 ***
Nonminority female	38.41	29.66	
DBE Total	38.41	41.20	93.23
Traveler Accommodation (NAICS 7211)			
African American	0.00	8.50	0.00 ***
Hispanic	0.00	4.07	0.00 ***
Asian	0.00	13.72	0.00 ***
Native American	0.00	1.54	0.00
Minority Total	0.00	27.83	0.00 ***
Nonminority female	0.00	14.24	0.00 ***
DBE Total	0.00	42.07	0.00 ***
Other Amusement and Recreation Industries (NAICS 7139)			
African American	0.00	9.49	0.00
Hispanic	0.00	4.27	0.00
Asian	0.00	8.34	0.00
Native American	0.00	1.56	0.00
Minority Total	0.00	23.66	0.00 ***
Nonminority female	0.00	15.91	0.00 ***
DBE Total	0.00	39.57	0.00 ***
Building Equipment Contractors (NAICS 2382)			
African American	0.00	9.37	0.00 ***
Hispanic	0.00	1.49	0.00 ***
Asian	0.00	1.32	0.00 ***
Native American	0.00	0.08	0.00
Minority Total	0.00	12.26	0.00 ***
Nonminority female	0.00	7.99	0.00 ***
DBE Total	0.00	20.26	0.00 ***
Automotive Equipment Rental and Leasing (NAICS 5321)			
African American	0.00	17.62	0.00 ***
Hispanic	0.00	0.00	

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NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	17.62	0.00 ***
Nonminority female	1.43	28.62	5.01 ***
DBE Total	1.43	46.23	3.10 ***
Soap, Cleaning Compound, and Toilet Preparation Manufacturing (NAICS 3256)			
African American	0.00	10.31	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.61	0.00
Native American	0.00	5.03	0.00 ***
Minority Total	0.00	16.95	0.00 ***
Nonminority female	0.00	21.92	0.00 ***
DBE Total	0.00	38.87	0.00 ***
Other Food Manufacturing (NAICS 3119)			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00
Native American	0.00	0.88	0.00
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***
Building Material and Supplies Dealers (NAICS 4441)			
African American	0.00	7.60	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00 ***
Native American	0.00	0.02	0.00
Minority Total	0.00	10.61	0.00 ***
Nonminority female	0.00	28.66	0.00 ***
DBE Total	0.00	39.27	0.00 ***
Other Textile Product Mills (NAICS 3149)			
African American	0.00	12.08	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00
Native American	0.00	0.52	0.00
Minority Total	0.00	14.27	0.00 ***
Nonminority female	1.17	38.87	3.01 ***
DBE Total	1.17	53.14	2.20 ***
Consumer Goods Rental (NAICS 5322)			
African American	0.00	22.64	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	22.64	0.00
Nonminority female	0.00	38.57	0.00 ***
DBE Total	0.00	61.21	0.00 ***
Waste Collection (NAICS 5621)			
African American	0.00	5.00	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	5.00	0.00
Nonminority female	0.00	85.00	0.00 ***
DBE Total	0.00	90.00	0.00 ***
Architectural, Engineering, and Related Services (NAICS 5413)			
African American	0.00	10.01	0.00 ***
Hispanic	0.00	1.51	0.00 ***
Asian	0.00	0.28	0.00
Native American	0.00	0.28	0.00
Minority Total	0.00	12.07	0.00 ***
Nonminority female	0.00	18.85	0.00 ***
DBE Total	0.00	30.92	0.00 ***
Sporting Goods, Hobby, and Musical Instrument Stores (NAICS 4511)			
African American	0.00	8.43	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	2.97	0.00
Native American	0.00	0.00	
Minority Total	0.00	11.40	0.00 ***
Nonminority female	0.51	29.22	1.75 ***
DBE Total	0.51	40.62	1.26 ***
Aerospace Product and Parts Manufacturing (NAICS 3364)			
African American	0.00	2.46	0.00
Hispanic	0.00	0.62	0.00
Asian	0.00	14.29	0.00 ***
Native American	0.00	0.62	0.00
Minority Total	0.00	17.98	0.00 ***
Nonminority female	0.00	21.67	0.00 ***
DBE Total	0.00	39.66	0.00 ***
Wired Telecommunications Carriers (NAICS 5171)			
African American	0.00	24.94	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	24.94	0.00 ***
Nonminority female	0.00	36.11	0.00 ***
DBE Total	0.00	61.05	0.00 ***
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works) (NAICS 5331)			
African American	0.00	22.79	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	22.79	0.00 ***
Nonminority female	0.00	37.28	0.00 ***
DBE Total	0.00	60.07	0.00 ***
Miscellaneous Nondurable Goods Merchant Wholesalers (NAICS 4249)			
African American	0.00	5.41	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.91	0.00
Native American	0.00	0.11	0.00
Minority Total	0.00	7.42	0.00 ***
Nonminority female	16.80	13.86	
DBE Total	16.80	21.28	78.95
Bakeries and Tortilla Manufacturing (NAICS 3118)			
African American	29.74	9.73	
Hispanic	0.00	0.00	
Asian	0.00	2.71	0.00 ***
Native American	0.00	0.64	0.00
Minority Total	29.74	13.08	
Nonminority female	0.00	30.54	0.00 ***
DBE Total	29.74	43.62	68.18 *
Other Personal Services (NAICS 8129)			
African American	0.00	17.46	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	1.32	0.00
Native American	0.00	1.13	0.00
Minority Total	0.00	21.49	0.00 ***
Nonminority female	0.00	11.67	0.00 ***
DBE Total	0.00	33.16	0.00 ***
Paint, Coating, and Adhesive Manufacturing (NAICS 3255)			
African American	0.00	5.04	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.35	0.00
Native American	0.00	0.58	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	6.97	0.00
Nonminority female	0.00	24.76	0.00
DBE Total	0.00	31.73	0.00
Other Ambulatory Health Care Services (NAICS 6219)			
African American	0.00	9.22	0.00 ***
Hispanic	0.00	4.33	0.00 ***
Asian	0.00	8.68	0.00 ***
Native American	0.00	1.49	0.00
Minority Total	0.00	23.73	0.00 ***
Nonminority female	0.00	13.32	0.00 ***
DBE Total	0.00	37.05	0.00 ***
Paper and Paper Product Merchant Wholesalers (NAICS 4241)			
African American	0.00	10.93	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.65	0.00
Native American	0.00	0.42	0.00
Minority Total	0.00	13.00	0.00 ***
Nonminority female	0.00	19.48	0.00 ***
DBE Total	0.00	32.48	0.00 ***
Accounting, Tax Preparation, Bookkeeping, and Payroll Services (NAICS 5412)			
African American	0.00	10.08	0.00 ***
Hispanic	0.00	1.37	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	11.45	0.00 ***
Nonminority female	0.00	24.10	0.00 ***
DBE Total	0.00	35.56	0.00 ***
Other Transportation Equipment Manufacturing (NAICS 3369)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00 ***
DBE Total	0.00	15.52	0.00 ***
Furniture and Home Furnishing Merchant Wholesalers (NAICS 4232)			
African American	0.00	5.89	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.67	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	0.45	0.00
Minority Total	0.00	8.01	0.00 ***
Nonminority female	0.00	14.66	0.00 ***
DBE Total	0.00	22.67	0.00 ***
Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (NAICS 4231)			
African American	0.00	4.86	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.69	0.00
Native American	0.00	0.10	0.00
Minority Total	0.00	6.64	0.00
Nonminority female	0.00	13.05	0.00 ***
DBE Total	0.00	19.69	0.00 ***
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (NAICS 3345)			
African American	0.00	8.82	0.00 ***
Hispanic	0.00	0.46	0.00
Asian	0.00	0.00	
Native American	0.00	0.46	0.00
Minority Total	0.00	9.74	0.00 ***
Nonminority female	0.00	9.96	0.00 ***
DBE Total	0.00	19.70	0.00 ***
Apparel, Piece Goods, and Notions Merchant Wholesalers (NAICS 4243)			
African American	0.00	6.88	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.66	0.00
Native American	0.00	0.10	0.00
Minority Total	0.00	8.64	0.00 ***
Nonminority female	0.00	12.80	0.00 ***
DBE Total	0.00	21.44	0.00 ***
Other Support Services (NAICS 5619)			
African American	0.00	23.58	0.00 ***
Hispanic	0.00	0.01	0.00
Asian	0.00	0.02	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.61	0.00 ***
Nonminority female	0.00	35.40	0.00 ***
DBE Total	0.00	59.00	0.00 ***
Remediation and Other Waste Management Services (NAICS 5629)			
African American	0.00	22.65	0.00 ***
Hispanic	0.00	0.00	

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	22.65	0.00 ***
Nonminority female	100.00	39.79	
DBE Total	100.00	62.44	
Direct Selling Establishments (NAICS 4543)			
African American	3.58	7.46	48.00
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00
Native American	0.00	0.00	
Minority Total	3.58	10.45	34.29
Nonminority female	0.00	25.37	0.00 ***
DBE Total	3.58	35.82	10.00 ***
Used Merchandise Stores (NAICS 4533)			
African American	0.00	7.59	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.19	0.00
Native American	0.00	0.05	0.00
Minority Total	0.00	10.82	0.00
Nonminority female	0.00	33.32	0.00 ***
DBE Total	0.00	44.15	0.00 ***
General Freight Trucking (NAICS 4841)			
African American	0.00	8.71	0.00
Hispanic	0.00	0.05	0.00
Asian	0.00	2.99	0.00
Native American	0.00	0.02	0.00
Minority Total	0.00	11.77	0.00
Nonminority female	0.00	26.61	0.00 ***
DBE Total	0.00	38.38	0.00 ***
Civic and Social Organizations (NAICS 8134)			
African American	0.00	17.25	0.00 ***
Hispanic	0.00	1.30	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.26	0.00
Minority Total	0.00	21.07	0.00 ***
Nonminority female	0.00	9.05	0.00
DBE Total	0.00	30.12	0.00 ***
Motor Vehicle Body and Trailer Manufacturing (NAICS 3362)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00
DBE Total	0.00	15.52	0.00 ***
Converted Paper Product Manufacturing (NAICS 3222)			
African American	0.00	7.02	0.00 ***
Hispanic	0.00	0.00	
Asian	0.00	1.75	0.00
Native American	0.00	0.88	0.00
Minority Total	0.00	9.65	0.00 ***
Nonminority female	0.00	19.30	0.00 ***
DBE Total	0.00	28.95	0.00 ***
Other Fabricated Metal Product Manufacturing (NAICS 3329)			
African American	0.00	2.81	0.00
Hispanic	0.00	0.70	0.00
Asian	0.00	0.00	
Native American	0.00	0.70	0.00
Minority Total	0.00	4.21	0.00
Nonminority female	0.00	15.84	0.00 ***
DBE Total	0.00	20.05	0.00 ***
Department Stores (NAICS 4521)			
African American	0.00	7.45	0.00
Hispanic	0.00	0.00	
Asian	0.00	3.01	0.00
Native American	0.00	0.00	
Minority Total	0.00	10.46	0.00
Nonminority female	0.00	27.08	0.00
DBE Total	0.00	37.54	0.00
Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (NAICS 3334)			
African American	0.00	3.81	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	3.81	0.00
Nonminority female	0.00	24.29	0.00 ***
DBE Total	0.00	28.10	0.00 ***
Museums, Historical Sites, and Similar Institutions (NAICS 7121)			
African American	0.00	9.19	0.00
Hispanic	0.00	4.38	0.00
Asian	0.00	8.76	0.00

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Native American	0.00	1.46	0.00
Minority Total	0.00	23.80	0.00 ***
Nonminority female	0.00	11.86	0.00
DBE Total	0.00	35.65	0.00 ***
Lessors of Real Estate (NAICS 5311)			
African American	0.00	23.44	0.00
Hispanic	0.00	0.00	
Asian	0.00	0.24	0.00
Native American	0.00	0.00	
Minority Total	0.00	23.67	0.00
Nonminority female	0.00	35.82	0.00 ***
DBE Total	0.00	59.49	0.00 ***
Electrical Equipment Manufacturing (NAICS 3353)			
African American	0.00	3.45	0.00
Hispanic	0.00	0.86	0.00
Asian	0.00	0.00	
Native American	0.00	0.86	0.00
Minority Total	0.00	5.17	0.00
Nonminority female	0.00	10.34	0.00
DBE Total	0.00	15.52	0.00
Cement and Concrete Product Manufacturing (NAICS 3273)			
African American	0.00	7.93	0.00
Hispanic	0.00	0.00	
Asian	0.00	1.49	0.00
Native American	0.00	0.65	0.00
Minority Total	0.00	10.07	0.00
Nonminority female	0.00	22.16	0.00
DBE Total	0.00	32.23	0.00 ***
Automotive Repair and Maintenance (NAICS 8111)			
African American	0.00	17.61	0.00 ***
Hispanic	0.00	1.26	0.00
Asian	0.00	1.26	0.00
Native American	0.00	1.34	0.00
Minority Total	0.00	21.46	0.00 ***
Nonminority female	12.75	9.67	
DBE Total	12.75	31.14	40.94

Source and Notes: See Table 7.20.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.25. Industry Group Utilization, Availability, and Disparity Results for JMAA Concessions (Car Rental Included)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Passenger Car Rental (NAICS 532111)			
African American	0.00	0.00	
Hispanic	0.00	0.00	
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	0.00	
Nonminority female	0.00	0.00	
DBE Total	0.00	0.00	
Limited-Service Restaurants (NAICS 722211)			
African American	0.00	9.21	0.00 ***
Hispanic	0.00	4.34	0.00 ***
Asian	0.00	8.62	0.00 ***
Native American	0.00	1.53	0.00
Minority Total	0.00	23.71	0.00 ***
Nonminority female	0.00	14.48	0.00 ***
DBE Total	0.00	38.18	0.00 ***
News Dealers and Newsstands (NAICS 451212)			
African American	33.33	7.46	
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00 ***
Native American	0.00	0.00	
Minority Total	33.33	10.45	
Nonminority female	0.00	25.37	0.00 ***
DBE Total	33.33	35.82	93.06
Full-Service Restaurants (NAICS 722110)			
African American	0.00	9.38	0.00 ***
Hispanic	0.00	4.74	0.00
Asian	0.00	8.40	0.00 ***
Native American	0.00	1.56	0.00
Minority Total	0.00	24.08	0.00 ***
Nonminority female	0.00	15.81	0.00 ***
DBE Total	0.00	39.88	0.00 ***
Gift, Novelty, and Souvenir Stores (NAICS 453220)			
African American	33.33	7.69	
Hispanic	0.00	0.09	0.00
Asian	0.00	3.15	0.00
Native American	0.00	0.00	
Minority Total	33.33	10.93	
Nonminority female	0.00	34.53	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE Total	33.33	45.46	73.33 ***
Display Advertising (NAICS 541850)			
African American	0.00	10.52	0.00 ***
Hispanic	0.00	1.40	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	11.92	0.00 ***
Nonminority female	0.00	21.91	0.00 ***
DBE Total	0.00	33.83	0.00 ***
All Other Personal Services (NAICS 812990)			
African American	0.00	17.46	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	1.32	0.00
Native American	0.00	1.13	0.00
Minority Total	0.00	21.49	0.00 ***
Nonminority female	0.00	11.67	0.00 ***
DBE Total	0.00	33.16	0.00 ***
Commercial Banking (NAICS 522110)			
African American	96.93	6.30	
Hispanic	0.00	0.00	
Asian	0.00	0.01	0.00
Native American	0.00	0.00	
Minority Total	96.93	6.31	
Nonminority female	0.00	8.76	0.00 ***
DBE Total	96.93	15.08	

Source and Notes: See Table 7.26.

Appendix C. Detailed Utilization, Availability & Disparity Tables

**Table AC.26. Industry Group Utilization, Availability, and Disparity Results for JMAA Concessions (Car Rental Excluded)**

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
Limited-Service Restaurants (NAICS 722211)			
African American	0.00	9.21	0.00 ***
Hispanic	0.00	4.34	0.00 ***
Asian	0.00	8.62	0.00 ***
Native American	0.00	1.53	0.00
Minority Total	0.00	23.71	0.00 ***
Nonminority female	0.00	14.48	0.00 ***
DBE Total	0.00	38.18	0.00 ***
News Dealers and Newsstands (NAICS 451212)			
African American	33.33	7.46	
Hispanic	0.00	0.00	
Asian	0.00	2.99	0.00 ***
Native American	0.00	0.00	
Minority Total	33.33	10.45	
Nonminority female	0.00	25.37	0.00 ***
DBE Total	33.33	35.82	93.06
Full-Service Restaurants (NAICS 722110)			
African American	0.00	9.38	0.00 ***
Hispanic	0.00	4.74	0.00
Asian	0.00	8.40	0.00 ***
Native American	0.00	1.56	0.00
Minority Total	0.00	24.08	0.00 ***
Nonminority female	0.00	15.81	0.00 ***
DBE Total	0.00	39.88	0.00 ***
Gift, Novelty, and Souvenir Stores (NAICS 453220)			
African American	33.33	7.69	
Hispanic	0.00	0.09	0.00
Asian	0.00	3.15	0.00
Native American	0.00	0.00	
Minority Total	33.33	10.93	
Nonminority female	0.00	34.53	0.00 ***
DBE Total	33.33	45.46	73.33 ***
Display Advertising (NAICS 541850)			
African American	0.00	10.52	0.00 ***
Hispanic	0.00	1.40	0.00
Asian	0.00	0.00	
Native American	0.00	0.00	
Minority Total	0.00	11.92	0.00 ***
Nonminority female	0.00	21.91	0.00 ***

Appendix C. Detailed Utilization, Availability & Disparity Tables

NAICS Industry Group / DBE Type	Utilization (%)	Availability (%)	Disparity Ratio
DBE Total	0.00	33.83	0.00 ***
All Other Personal Services (NAICS 812990)			
African American	0.00	17.46	0.00 ***
Hispanic	0.00	1.59	0.00
Asian	0.00	1.32	0.00
Native American	0.00	1.13	0.00
Minority Total	0.00	21.49	0.00 ***
Nonminority female	0.00	11.67	0.00 ***
DBE Total	0.00	33.16	0.00 ***
Commercial Banking (NAICS 522110)			
African American	96.93	6.30	
Hispanic	0.00	0.00	
Asian	0.00	0.01	0.00
Native American	0.00	0.00	
Minority Total	96.93	6.31	
Nonminority female	0.00	8.76	0.00 ***
DBE Total	96.93	15.08	

Source and Notes: See Table 7.26.

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