Technical Report:

Methodology for Computing Proposed FHWA DBE Goals Minnesota Department of Transportation (MnDOT) FY2019-2021

Submitted to:

Minnesota Department of Transportation

395 John Ireland Blvd, St. Paul, MN 55155-1899

Submitted by:

The Roy Wilkins Center for Human Relations and Social Justice

Hubert H. Humphrey School of Public Affairs

University of Minnesota

July 31, 2018

Copyright © 2018 by the Roy Wilkins Center for Human Relations and Social Justice. All rights reserved.

ACKNOWLEDGEMENTS

Dr. Samuel L. Myers, Jr., Roy Wilkins Professor of Human Relations and Social Justice and director of the Roy Wilkins Center, Hubert H. Humphrey School of Public Affairs, University of Minnesota, served as the principal investigator for the project, developing the methodology for the analysis and providing overall leadership to the project. Amber Ontiveros, President of Ontiveros & Associates, LLC, oversaw the project, and acted as a liaison with the Office of Civil Rights. Dr. Inhyuck Ha, Professor of Economics at Western Carolina University, performed the statistical analysis including the utilization and discrimination analysis. Dr. Ha was assisted by Man Xu and Yufeng Lai, Ph.D students at the University of Minnesota.

We are grateful to Kim Collins, Director of Civil Rights, Minnesota Department of Transportation and her entire staff, especially Amy Sullivan, Ashanti Payne, Sarah Rudolf, DeLores Aguirre, and Thomas Mebrahtu who compiled and provided the data used to prepare this report.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS **2**

EXECUTIVE SUMMARY ..... **i**

CHAPTER 1: INTRODUCTION **1**

CHAPTER 2: DATA **2**

CHAPTER 3: METHODOLOGY TO ESTABLISH OVERALL GOAL **2**

3.2 UTILIZATION ANALYSIS 3

3.3 DISTRIBUTION OF ESTIMATED EXPENDITURES BY INDUSTRY CLASSIFICATION FOR FY 2019-2021 4

3.4 CALCULATING THE WEIGHTED AVAILABILITY MEASURE 5

3.4.1 MnDOT Bidders List Method *6*

3.4.2 Certified DBE List Method *7*

3.4.3 MnDOT Vendors List Method *8*

3.4.4 Dun & Bradstreet Method *9*

3.4.5 The Base Goal *10*

3.5 ADJUSTMENT TO THE BASE GOAL 10

3.5.1 Data Used for Adjustment to the Base Goal *12*

3.5.2 Residual Difference Method *12*

3.5.3 Adjustment *12*

3.6 RACE NEUTRAL ANALYSIS 12

3.7 PUBLIC COMMENT PERIOD 14

3.7.1 Comments Received on the FHWA DBE Goal: *14*

CHAPTER 4: THE MnDOT PROPOSED DBE GOALS **16**

CHAPTER 5: APPENDICES **1**

APPENDIX A: UTILIZATION ANALYSIS 1

Table A-1. Utilization Rates by State – Prime Contracts only 1

Table A-2. Utilization Rates by State - Subcontracts only 2

Table A-3. Utilization Rates by NAICS Code - Primes only 3

Table A-4. Utilization Rates by NAICS Code - Subcontracts only 5

APPENDIX B: AVAILABILITY ANALYSIS 1

Table B-1. Weights used for the Availability Analysis 1

Table B-2. Availability Analysis - Bidders List Method 5

PJM-1 5

PJM-2 9

VJM-1 13

Table B-3. Availability Analysis - Certified DBE List Method 17

PJM-1 17

PJM-2 21

VJM-1 25

Table B-4. Availability Analysis - Vendors List Method 29

PJM-1 29

PJM-2 33

VJM-1 37

Table B-5. Availability Analysis - Dun & Bradstreet Method 41

PJM-1 41

PJM-2 45

VJM-1 49

APPENDIX C: DISCRIMINATION ANALYSIS 1

Table C-1. Description of the Variables in the Residual Difference Decomposition 1

Table C-2. Summary Statistics for Prime Contracts 2

Table C-3. Discrimination Analysis-Residual Difference Decomposition: Natural Log of Award Amount, by DBE 3

Table C-4. Discrimination Analysis-Residual Difference Decomposition: Natural Log of Award Amount, by DBE_Star 5
APPENDIX D: PUBLIC COMMENT PERIOD 1
Announcement: Public Comment Period Open July 3 - July 31,2018 on Proposed Goals for Disadvantaged Business Enterprises 1

EXECUTIVE SUMMARY

This report provides proposed DBE goal and race neutral participation for the Minnesota Department of Transportation (MnDOT) for fiscal years 2019-2021 on Federal Highway Administration funded expenditures. The report was constructed based on the best available information received from MnDOT as well as the government-published secondary data[1] such as the Zip Codes Business Patterns from the US Census Bureau.

The analysis undertaken suggests a proposed agency-wide DBE goal of 12.23 percent for 2019-2021 on FHWA-funded projects.

This goal was derived in the following manner:

- A base goal of 9.40 percent was computed.
- An adjustment to the base goal was made to account for disparities in prime and subcontract awards that cannot be attributed to differences in industry, location, firm size, credit risk, or other characteristics of DBE versus non-DBE contracts. The adjustment was to increase the base goal by 30.13 percent, resulting in the adjusted goal of 12.23 percent (= 9.40 × 1.301).
- The maximum portion of the adjusted goal deemed to be achievable by race-neutral means was found to be equal to 31.17 percent. Therefore, the race neutral goal was computed to be equal to 3.81 percent (= 12.23 × 0.312) and the race-conscious goal was computed to be equal to 8.42 percent (= 12.23 × (1 – 0.312) = 12.23 × 0.688).

Table 1 provides the detailed breakdowns:

Table 1. Proposed MnDOT FHWA DBE Goals FY2019-2021

Base Goal	9.40%
Discrimination Gap for Adjustment	30.13%
Adjusted Goal	**12.23%**
Race-Neutral Portion	*31.17%*
Race-Neutral Goal	**3.81%**
Race-Conscious Portion	*68.83%*
Race-Conscious Goal	**8.42%**

Source: The research team's calculation using the compiled MnDOT data files

BACKGROUND

As a recipient of federal transportation dollars awarded through the U.S. Department of Transportation's Federal Highway Administration (FHWA), MnDOT is required to establish and

[1] The research team used County Business Patterns, Zip Codes Business Patterns and D&B Hoovers' in the analysis.

submit a three-year goal to the FHWA for review (Final Rule, 2014). This goal is to be established in compliance with the federal regulations governing the *Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs* (hereafter referred to as "USDOT regulations"). The USDOT regulations instruct state and local grant recipients to follow a two-step process to establish their annual DBE goal [*49 C.F.R. §26.45*]. The analysis conducted by the Roy Wilkins Center complies with these guidelines.

METHODOLOGY

In order for the MnDOT FHWA DBE goals to satisfy the requirements set forth in the USDOT regulations, availability rates of willing, able and qualified firms must be computed for well-defined geographic market areas. The research team established three different geographic market areas. Two were based on political jurisdictions and the other one was based on zip codes where there were substantial numbers of prime and subcontractors for MnDOT contracts between fiscal year 2015 and 2017. Relevant industries with MnDOT contracts were identified by examining the distribution of MnDOT contract dollars by industry classification for contracts awarded between October 1, 2014 and September 30, 2017. The research team then estimated the distribution of anticipated MnDOT contract dollars by industry classification for FY 2019-2021 from the information about future projects that was provided by MnDOT.

Availability rates were computed from multiple data sets and were appropriately weighted to produce a base goal. Base goals were then adjusted to account for disparities in prime contract and subcontract award amounts. The results were the proposed goal. The proposed goal was further partitioned between a race conscious and race neutral portion using a methodology upheld by the 3rd Circuit Federal Court in *GEOD v. New Jersey Transit* and published in the peer reviewed journal, *Applied Economics Letters.*

DATA

The research team obtained all prime contract and subcontract files from the Office of Civil Rights in the Minnesota Department of Transportation for the fiscal years 2015 to 2017. Obvious data entry errors, improbable measures, possible duplicates and related questionable items were flagged and forwarded to MnDOT staff for clarification and/or correction.

Contract files were supplemented with data obtained from Dun & Bradstreet (D&B). Other data used included: the Minnesota Unified Certification Program (MN UCP) Directory, AASHTOWare, Good Faith Efforts Consolidated Forms[2], and the County and ZIP codes Business Patterns (CBP and ZBP) data for 2016.

[2] The research team learned that the AASHTOWare system records zip codes, city, and addresses for every firm in PDF format, however the PDF format does not provide all subcontracts in a useable format for purposes of this project. There were 177 firms the research team could not extract address and/or zip codes to match those firms in the D&B database, and thereby obtain NAICS codes. This impacted both the number of DBE and non-DBE firms included in the analysis.

UTILIZATION

In Table 2, the utilization analysis shows that 99.53 percent of prime contract dollars were awarded to non-DBE prime contractors (equivalent to $2.82 billion dollars) while 0.47 percent of prime contract dollars were awarded to DBE prime contractors ($13.37 million dollars). Of the $1.15 billion dollars subcontracted by prime contractors, 18.16 percent went to DBE subcontractors and 81.84 percent to non-DBE subcontractors. In total, DBE prime contractors and subcontractors received 7.86 percent of total contract dollars awarded from 2015 to 2017.

Table 2. DBE Share of FHWA Contract Amount

		N	Contract Amount	Percent
Prime Contracts	Total	868	$ 2,837,833,701.76	
	DBE	21	$ 13,376,962.10	0.47%
	Non-DBE	847	$ 2,824,456,739.66	99.53%
Sub Contracts	Total	6,726	$1,154,172,673.67	
	DBE	1,496	$ 209,640,742.89	18.16%
	Non-DBE	5,230	$ 944531930.78	81.84%
Both Prime and Sub Contracts[3]				
	DBE	1,517	$223,017,704.98	7.86%

Source: MnDOT FHWA contracts: Oct. 1, 2014 - Sep. 30, 2017

Of the contract dollars awarded to 21 DBE prime contractors, 17.74 percent were awarded to Caucasian females, 2.33 percent to Asian and Pacific Islanders, 1.99 percent to Hispanics, and 77.94 percent to Native Americans. Among contract dollars awarded to DBE subcontracts, 81.77 percent were awarded to Caucasian females, 5.16 percent to Asian and Pacific Islander, 4.14 to African Americans, 4.17 percent to Hispanics, and 3.65 percent to Native Americans.

The vast majority of prime contract dollars were awarded to Minnesota firms (78.83%) followed by Wisconsin (15.13%). The bulk of contracts and contract dollars awarded were in the construction industry with a non-trivial share of contracts and contract dollars in various professional services.

GEOGRAPHIC MARKET AREAS

In order for the MnDOT FHWA DBE goal to satisfy the requirements set forth in the USDOT regulations as well as comply with the Supreme Court's narrowly-tailored standard, the DBE goal must be based on a narrowly-defined geographic market. In order to define the geographic market in such a manner that the vast majority of contract dollars awarded would be incorporated in the definition, the research team considered two broad methods: a) political jurisdiction method (PJM), based on the counties where contracts were awarded; and b) virtual jurisdiction method (VJM), based on the zip code location of contracts and/or contractors in the MnDOT's

[3] This figure includes DBEs in either prime or subcontracts.

database. All methods yield different counts or estimates of the numbers of firms within industry codes, and accordingly will yield alternative measures of availability. For this report, the following markets were used.

Table 3. MnDOT Geographic Market Areas (GMAs) for FHWA DBE Goals[4]

GMA	Definition	Total Amount	Share of Dollars
Political Jurisdiction Method (PJM)			
PJM-1	All Minnesota counties	$ 2,774,578,339.59	82.16%
PJM-2	Ranked Counties in USA where the total contract dollars for the sum of the counties exceeds 75% and the marginal contribution to the overall total is at least 1%	$ 2,905,314,124.95	86.03%
Virtual Jurisdiction Method (VJM)			
VJM-1	Ranked zip codes anywhere in the USA where the total contract dollars awarded for the sum of the zip codes exceeds 75% and the marginal contribution to the overall total is at least 0.25%	$ 2,910,608,935.58	86.19%
Total (Both Prime and Sub)		$ 3,377,099,098.19	

Source: FHWA contracts between Oct. 1, 2014 and Sept. 30, 2017

The first method, PJM-1, represents the State of Minnesota. The second method, PJM-2, defines those counties where there are enough contracts to represent the Minnesota counties where the total contract amount exceeds 75 percent and the marginal contribution of each county to the overall total contract amount is at least 1 percent. The other measure, VJM-1, is similar to PJM-2, but focuses on zip codes.

The distribution of dollars per GMA is presented in Table 3 as well. Each geographic market area has more than 80 percent of contract dollars.

[4] In Table 3, the total dollars included in each GMA is different from the total dollars in the utilization analysis due to the timing of the team's receipt of 645 additional contracts. The share of total dollars in the GMAs changed minutely once the team included these in the analysis, wherein the corresponding share of dollars for the GMAs in PJM-1, PJM-2 and VJM-1 are 81.28%, 86.78%, and 87.58% respectively.

DISCUSSION OF AVAILABILITY METHODS

The research team obtained from MnDOT a list of all firms that were in their various databases, which included prime contractors and subcontractors, certified DBEs, bidders and vendors. NAICS codes for the firms were obtained from the DBE list and Dun & Bradstreet (D&B). When no NAICS could be found[5], observations were not used in the weighted availability counts.

The research team also obtained from MnDOT the list of projects that MnDOT expects to undertake and identified 128 separate six-digit NAICS codes associated with comparable projects from the period of 2018-2021. Weights were obtained by using the projected expenditures[6] provided by MnDOT.[7]

Bidders List Method[8]

The bidders list includes firms that bid on a federal prime contract or subcontract. The research team obtained the list of bidders on each prime contract and associated subcontracts from the AASHTOWare system and Good Faith Efforts Consolidated Forms maintained by MnDOT. The prime contract and subcontract lists were matched with the certified DBE list database to identify the race/ethnicity and gender status of bidders.

The availability rate is the weighted share of certified DBEs within each NAICS code for a given geographic market area. The weights are based on the expected share of dollars MnDOT anticipates it will spend on different types of projects in 2018-2021. The numerator is the number of DBE bidders and the denominator is the total number of bidders. With the Bidders List method, the numerator and denominator come from the same source.

Information on NAICS codes is not available for all firms. NAICS codes associated with each firm came from two different sources: MnDOT information and D&B. When the research team was unable to obtain NAICS from the MnDOT information, the team used the D&B database. When the research team was unable to find a NAICS code for the firm, the firms were not included in this availability method. The research team excluded 177 firms[9] due to lack of information.

---

[5] The research team could not identify NAICS codes for 3.81% of the observations from the Bidders List and 25.08% of the observations from the Vendors list in the D&B database.

[6] State Transportation Improvement Program (STIP) 2018-2021, http://www.dot.state.mn.us/planning/program/stip.html.

[7] According to U.S. Department of Transportation regulations, the availability rate should be weighted by the "amount of money to be spent" in each industry. The research team requested a copy of MnDOT's estimated expenditures for the next three years, broken down by NAICS code. Projected expenditures for the next three years included in the State Transportation Improvement Program (STIP) 2018-2021 data files were provided and categorized by type of work. In order to calculate the weights for the availability analysis, the research team categorized projected expenditures by NAICS code. The result was 128 NAICS codes.

[8] The formula below was used to calculate the availability analysis using the Bidders List method.

$$Availability\ Rate = \sum_{j=1}^{n} \frac{(Number\ of\ DBE\ Bidders)_j}{(Total\ Number\ of\ Bidders)_j} \times weight_j, where\ j = industry$$

The numerator is the number of DBE bidders in a given industry j and the denominator is the total number of bidders with the same industry j. The weight j is the percent of contract amounts in each industry.

[9] The AASHTOWare system records zip codes, city, and addresses for every firm in PDF format. The PDF format does not provide all subcontracts in a useable format for purposes of this project. There were 177 firms the research team could not extract

Vendors List Method[10]

The vendors list method includes the list of firms that have done business with MnDOT. MnDOT updates the list continuously by identifying firms that are no longer in business. The research team used the most recently updated list.[11]

The availability rate is the weighted share of certified DBE vendors within each NAICS code for a given geographic market area. The counts for the numerator and the denominator come from the same data source – the vendors list. As is the case with the bidders list, when the research team were unable to match a firm with a NAICS code, that firm was not included in the count.

Dun & Bradstreet Method[12]

The research team obtained access to Hoover's database, a subsidiary of Dun & Bradstreet (D&B), to compute the number of firms in each relevant NAICS code within a specified geographic market area[13]. This research product covers more than 23 million U.S corporations and other entities (i.e. government agencies, partnerships, non-profits, and educational institutions). For the state of Minnesota, information included information on headquarters, branches, and single locations.[14]

The availability rate is computed by finding the weighted share of women- and minority-owned businesses within each NAICS code for a specified geographic market area. Unlike the other methods, the D&B method uses "self-reported" minority/gender designations. Thus, the D&B method can include firms that are not MnDOT certified DBEs. On the other hand, not every certified DBE is included in this database because a requirement of inclusion is the existence of a DUNS number. According to Hoover's customer service, D&B contacts firms directly to verify their gender or minority status and checks with third party sources and proprietary databases for further verification.

---

address and/or zip codes to match these firms with the D&B database, and thereby obtain NAICS codes. This impacted both the number of DBE and non-DBE firms included in the analysis.

[10] The formula below was used to calculate the availability using the Vendors List method:

$$Availability\ Rate = \sum_{j=1}^{n} \frac{(Number\ of\ DBE\ Vendors)_j}{(Total\ Number\ of\ Vendors\ )_j} \times weight_j, where\ j = industry$$

The numerator is the number of DBE vendors in a given industry *j* and the denominator is the total number of vendors with the same industry *j*. The weight *j* is the percent of contract amounts in each industry.

[11] The vendor list was provided on March 13, 2018.

[12] The formula below was used to the availability analysis using the D&B method.

$$Availability\ Rate = \sum_{j=1}^{n} \frac{(Number\ of\ WBEs\ or\ MBEs)_j}{(Total\ Number\ of\ Firms)_j} \times weight_j, where\ j = industry$$

The numerator is the number of WBE or MBW firms in a given industry *j* and the denominator is the total number of firms with the same industry *j*. The weight *j* is the percent of contract amounts in each industry.

[13] Due to system upgrades, D&B Hoover provides one main NAICS code for each business. The data limitation allowed the research team to calculate the availability rate based on the main NAICS code for the firm. In past MnDOT DBE goal projects, all NAICS codes for a firm were used to calculate the availability rate.

[14] Headquarter: indicates that the company has subsidiaries or branches; branch indicates a company location other than the headquarters; and single location indicates that the company does not have any subsidiaries or branches.

DBE List Method[15]

The research team obtained the list of certified DBEs from MnDOT. The numerator in the availability rate is the number of certified DBE firms for specified NAICS codes within a given geographic market area. The denominator is the number of firms in the County Business Patterns (CBP) or ZIP codes Business Patterns (ZBP) databases, depending on the definition of the geographic market area, for specified NAICS codes within a geographic market area. The numerator and denominator come from different sources. The numerator counts firms and the denominator counts establishments with paid employees.[16] The Census Bureau explains:

An establishment is a single physical location at which business is conducted or services or industrial operations are performed. An establishment is not necessarily equivalent to a company or enterprise, which may consist of one or more establishments. A single-unit company owns or operates only one establishment. A multi-unit company owns or operates two or more establishments. https://www.census.gov/programs-surveys/cbp/technical-documentation/methodology.html[17] (Census Bureau, County Business Patterns, "Technical Documentation: Methodology").

THE BASE GOAL

Depending on the method used to calculate availability rates, each geographic market area captures a different share of available contract dollars. As a result, each method also yields a different DBE availability goal for each geographic market.

In order to derive a single base goal for MnDOT that is based on all the goals calculated for each geographic market, it is necessary to weight each geographic market-specific goal according to the percentage of contract dollars awarded in that area (shown in Table 4).

The four different methods use data that report multiple industries for many of the firms in their databases. Table 4 presents the details of the weighted availability rate using main NAICS code level. When using the main NAICS code level computation, the base goal is found to be 9.40 percent. This base goal is used in subsequent analyses.

[15] The formula below was used to the availability analysis using the Certified DBE List method.

$$Availability\ Rate = \sum_{j=1}^{n} \frac{(Number\ of\ DBEs)_j}{(Number\ of\ Firms\ in\ ZBP/CBP)_j} \times weight_j, where\ j = industry$$

The numerator is the number of DBE firms in a given industry *j* and the denominator is the total number of firms with the same industry *j* from ZIP Codes Business Patterns dataset. The weight *j* is the percent of contract amounts in each industry.

[16] Note that the denominator may overstate the number of firms since it includes each establishment owned by a multi-unit firm.

[17] The denominator includes many establishments that might not normally contract with MnDOT.

Table 4. FHWA Availability Rates and Base Goal

Method	PJM-1	PJM-2	VJM-1	Weighted Base Goal
Bidders List Method	10.96%	11.59%	7.61%	9.40%[18]
DBE List Method	4.71%	12.43%	4.35%	
Vendors List Method	15.28%	16.15%	7.77%	
Dun & Bradstreet	7.49%	8.39%	6.18%	

Source: The research team's calculation used compiled MnDOT data files, D&B Hoover, and US Census Bureau data

ADJUSTMENTS TO THE BASE GOAL

According to the USDOT regulations, recipients of federal funds are required to adjust their base goals in light of other evidence regarding the market area [*49 C.F.R. §26.45(d)*]. One valid reason for adjusting the goal would be if the analysis showed discrimination, either in the overall market place or in the specific agency or governmental unit undertaking the procurement and contracting process.

Between the years 2015 to 2017, 16 DBE firms graduated[19] from the MnDOT DBE program and thereby were considered in the base goal adjustment. The graduated DBEs are no longer eligible to participate in the 2019-2021 DBE program. Table 5 presents the details of the DBE firms who have graduated from the DBE program. The graduated DBEs received 14.67 percent of the total dollars awarded to all DBE firms.

Table 5: 2015 -2017 MnDOT DBE Program Graduation

	Graduated DBEs	Active DBEs	All DBEs
Firms (N)	16	148	164
Percentage	9.76%	90.24%	100%
Awarded Contracts ($)	$32,351,330.74	$190,666,374.25	$223,017,704.98
Percentage	14.67%	85.33%	100%
Note: DBE here means DBE firms utilized in 2015-2017 MnDOT DBE program.			

The research team developed two methods to incorporate the DBEs who graduated in the base goal adjustment. The first method excludes the graduated DBEs in the analysis, while the second method treats the graduated DBEs as non-DBEs.

[18] Note that the weighted base goal is not a simple average of the measures shown in the table. It is the weighted average using the percent distribution of contract amounts by geographic market area. See Table 9 for details.

[19] DBE graduation here includes DBEs who were certified at the award of the contract, but who have since graduated, became de-certified, or based on the regulations were disqualified from participation in the MnDOT DBE program. The research team obtained this information from MNDOT.

The research team used the Blinder-Oaxaca-Duncan residual difference decomposition[20] [21] method to make the base goal adjustment. The residual difference decomposition estimates separately the log-transformed contract amounts to DBEs and non-DBEs and computes the amount that DBEs that would have received contracts had they been treated like equally situated non-DBEs. The difference between the actual contract amounts and the "equal-treatment" amounts defines the discriminatory portion of the gap between DBEs and non-DBEs.

Factors included in the control for relevant characteristics include year of contract, industry, whether the firm is located in Minnesota, credit rating, tenure of the firm, whether a firm was awarded both prime and subcontracts, and whether the firm had more than one contract. The research team estimated the measures of discrimination for prime contracts and subcontracts for different model specifications. The reasons for different specifications include the fact that there are missing values for some observations on the credit risk, tenure, and size of firms.

The base goal is adjusted using the average unexplained portion from the residual difference composition -- for prime and subcontractors contract disparities. This adjustment equals 30.13 percent.[22]

RACE NEUTRAL ANALYSIS

In compliance with federal regulations, state and local transportation authorities must identify the maximum feasible portion of the DBE goal that can be achieved through race-neutral measures and the percentage of the goal that can only be achieved through race-conscious measures [*49 C.F.R. §26.51(a)*]. Myers and Ha have pioneered the use of a detailed econometric procedure that maximizes the race-neutral component of the DBE goals.[23] This method has established a rigorous standard for maximizing the race neutral portion of the overall DBE goal.[24]

The logic of the analysis is that some share of DBE dollars awarded would have gone to DBEs without goals. One can compute the share of dollars that would have gone to DBEs without goals for contracts and firms that are comparable. This method requires the estimation of a regression model that controls for a list of relevant variables.

The race neutral analysis uses the best regression model for predicting DBE contract amounts with and without goals. Following this specification, our analysis shows that 31.17 percent of the goal can be achieved through race neutral measures and 68.83 percent can be achieved through race conscious goals.

---

[20] Many analysts reference the technique simply as the Oaxaca method, due to the continuing role that Ronald Oaxaca has played in developing and expanding the decomposition methodology.

[21] Blinder, Alan, (1973), Wage Discrimination: Reduced Form and Structural Estimates, *Journal of Human Resources*, 8, issue 4, p. 436-455; Oaxaca, Ronald, (1973), Male-Female Wage Differentials in Urban Labor Markets, *International Economic Review*, 14, issue 3, p. 693-709

[22] Standard regression and Oaxaca command in Stata 14 is used for the analysis.

[23] Myers, Samuel L. and Inhyuck "Steve" Ha. "Estimation of Race Neutral Goals in Public Procurement and Contracting," *Applied Economics Letters*, 2009, vol. 16, issue 3, pages 251-256.

[24] 2010-10-19, Civil Action No. 04-2425, GEOD CORPORATION, et al., Plaintiffs v. NEW JERSEY TRANSIT CORPORATION, et al., Defendants.

PUBLIC COMMENT PERIOD

In accordance with the USDOT regulations, as amended by the Final Rule effective November 3, 2014, to establish its overall goal, MnDOT provided a 30-day consultation process and publication of its goal [*49 C.F.R. §26.45(g)*].

MnDOT published its goal notice to solicit public comments (including information on how to submit comments) on its website from July 3 to July 31, 2018.

Additionally, MnDOT held four public comment meetings and directly contacted disadvantaged business enterprises, minority, women and general contractor groups for public input.[25] All comments were analyzed to assess their effect on the methodology.

[25] Public meetings were held on July 9th in Rochester, July 11th in St. Paul, July 13th in Duluth, and July 23rd in St. Paul.

CHAPTER 1: INTRODUCTION

Minnesota Department of Transportation (MnDOT) is a recipient of federal transportation dollars awarded through the U.S. Department of Transportation's Federal Highway Administration (FHWA). As such, MnDOT is required to establish a three-year goal and submit it to the FHWA for review (Final Rule, 2014). This goal must be in compliance with the federal regulations governing the *Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs* (hereafter referred to as "USDOT regulations"). The USDOT regulations instruct state and local federal grant recipients to follow a two-step process to establish their annual DBE goal [*49 C.F.R. §26.45*].

Step 1: Determine the base figure for the relative availability of DBEs in the specific industries and geographical market from which DBE and non-DBE contractors are drawn.

Step 2: Adjust the base figure in light of other evidence regarding the market area.

This two-step process is designed to satisfy several important objectives [*49 C.F.R. §26.1*]. According to USDOT regulations, DBE programs are designed to:

(a) Ensure ***non-discrimination in the award*** and administration of DOT-assisted contracts in the Department's highway, transit, and airport financial assistance programs.

(b) Create a ***level playing field*** on which DBEs can compete fairly for DOT-assisted contracts.

(c) Ensure that the Department's DBE program is ***narrowly tailored*** in accordance with applicable law.

(d) Ensure that only firms that fully meet this part's ***eligibility standards*** are permitted to participate as DBEs.

(e) Help ***remove barriers*** to the participation of DBEs in DOT-assisted contracts.

(f) Assist the development of firms that can ***compete successfully in the marketplace*** outside the DBE program.

(g) Provide appropriate ***flexibility to recipients*** of federal financial assistance in establishing and providing opportunities for DBEs (emphasis added).

The MnDOT DBE program and goal-setting process is designed to meet these objectives. On behalf of MnDOT, the Roy Wilkins Center from University of Minnesota completed the required two-step process outlined in the USDOT regulations. This report details the methodology used to

provide MnDOT with the information it needs to make its decision about the setting of the DBE goals for 2019-2021.

CHAPTER 2: DATA

Staff at the Office of Civil Rights, Minnesota Department of Transportation, provided the research team with electronic copies of all known prime contract and subcontract files for the years 2015 to 2017. Obvious data entry errors, improbable measures, possible duplicates and related questionable items were flagged and forwarded to MnDOT staff for clarification or correction.

Contract files were supplemented with data obtained from Dun & Bradstreet (D&B). Other data used included the Minnesota Unified Certification Program (MN UCP) Directory, MnDOT Vendors List, MnDOT Bidders list, the County Business Patterns and Zip codes Business Patterns (ZBP) data set for 2016.

CHAPTER 3: METHODOLOGY TO ESTABLISH OVERALL GOAL

The USDOT suggests rather than prescribes how the base figure of relative availability of DBEs is to be calculated [*49 C.F.R. § 26.45(c)*]. The base figure for the MnDOT goal was calculated using several variations of the availability methodology proposed in the USDOT regulations. The methodologies performed, and results produced are summarized here.

3.1 Defining the Geographic Marketplace

In order for the MnDOT FHWA DBE goal to satisfy the requirements set forth in the USDOT regulations as well as comply with the Supreme Court's narrowly-tailored standard, the DBE goal must be based on a narrowly-defined geographic market.

The Roy Wilkins Center analyzed contracts awarded between October 1, 2014 and September 30, 2017. Our analysis of contracts confirmed that most contracts (83.87 percent for prime contracts and 90.81 percent for sub-contracts) and contract dollars (78.83 percent for prime contracts and 87.31 percent for sub-contracts) were awarded to Minnesota-based firms. 15.13 percent of contract dollars were awarded to firms located in Wisconsin and 4.91 percent of contract dollars was awarded to firms located in Nebraska. Tables A-1 and A-2 of Appendix A show the complete distribution of contracts and contract dollars broken down by state.

In order to define the geographic market in such a manner that the vast majority of contract dollars awarded would be incorporated in the definition, the research team considered two broad methods: a) political jurisdictional method (PJM), based on the counties where contracts were awarded; and b) virtual jurisdictional method (VJM), based on the zip code location of contracts and/or contractors in MnDOT's database. All methods yield different counts or estimates of the numbers of firms within industry codes, and accordingly will yield alternative measures of availability. For this report, the following markets were used.

As shown in Table 6 below, the first method, PJM-1, represents the State of Minnesota. The second method, PJM-2, defines those counties where there are enough contracts to represent the Minnesota counties where the total contract amount exceeds 75 percent and the marginal contribution of each county to the overall total contract amount is at least 1 percent. The other measure, VJM-1, is similar to PJM-2, but focuses on zip codes.

Table 6. Geographic Market Areas (GMAs)

GMA	Definition
Political Jurisdiction Method (PJM)	
PJM-1	All Minnesota counties
PJM-2	Ranked Counties in USA where the total contract dollars for the sum of the counties exceeds 75% and the marginal contribution to the overall total is at least 1%
Virtual Jurisdiction Method (VJM)	
VJM-1	Ranked zip codes anywhere in the USA where the total contract dollars awarded for the sum of the zip codes exceeds 75% and the marginal contribution to the overall total is at least 0.25%

Source: FHWA contracts between Oct. 1, 2014 and Sept. 30, 2017

3.2 Utilization Analysis

In order to measure utilization, the research team computed the share of prime and subcontract dollars by DBE status, race/ethnicity, gender, funding source, and NAICS codes (see tables A-3 and A-4 in Appendix A, Utilization Analysis).

Table 7. Utilization Rates by DBE Status

		N	Contract Amount	Percent
Prime Contracts	Total	868	$ 2,837,833,701.76	
	DBE	21	$ 13,376,962.10	0.47%
	Non-DBE	847	$ 2,824,456,739.66	99.53%
Sub Contracts	Total	6,726	$1,154,172,673.67	
	DBE	1,496	$ 209,640,742.89	18.16%
	Non-DBE	5,230	$ 944531930.78	81.84%
Both Prime and Sub Contracts[26]				
	DBE	1,517	$223,017,704.98	7.86%

Source: MnDOT FHWA contracts: Oct. 1, 2014 - Sep. 30, 2017

Table 7 shows that DBEs received most of their contract dollars (18.16%) through subcontracts while a small percent (0.47%) of DBEs served as prime contractors. In total, DBEs received 7.86% of contract dollars awarded from 2015 to 2017. Although DBEs were able to obtain a

[26] This figure includes DBEs in either prime or subcontracts.

large number of contracts as subcontractors (1,496 contracts), this number was three times lower than the number of contracts obtained by non-DBEs (5,230 subcontracts) in the same period.

Table 8 shows that 71.43 percent (15 out of 21) of DBE prime contracts were awarded to Caucasian females. Among DBE subcontracts, 83.22 percent were awarded to Caucasian females, 3.81 percent to Asian and Pacific Islanders, 3.54 percent to African Americans, 5.61 percent to Hispanics, 2.94 percent to Native Americans.

Table 8. Utilization Rates by Race/Ethnicity - DBEs only

Type	Race/Ethnicity	N	Percent	Contract Amount	Percent
Prime	Asian & Pacific Islander	1	4.76%	$ 311,779.44	2.33%
	Caucasian (Female)	15	71.43%	$ 2,373,298.09	17.74%
	Hispanic	2	9.52%	$ 266,261.20	1.99%
	Native American	3	14.29%	$ 10,425,623.38	77.94%
	DBE total	21	100.00%	$ 13,376,962.11	100.00%
Sub Contracts	Asian & Pacific Islander	57	3.81%	$ 10,827,021.08	5.16%
	African American	53	3.54%	$ 8,679,099.09	4.14%
	Caucasian (Female)	1,245	83.22%	$ 171,418,930.49	81.77%
	Hispanic	84	5.61%	$ 8,748,321.41	4.17%
	Native American	44	2.94%	$ 7660670.257	3.65%
	Unknown	13	0.87%	$ 2306700.551	1.10%
	DBE total	1,496	100.00%	$ 209,640,742.89	100.00%

Source: MnDOT FHWA contracts Oct. 1, 2014 – Sep. 30, 2017

After analyzing the MnDOT Contract File, the research team calculated the distribution of dollars expended by NAICS code. The analysis revealed that Minnesota Department of Transportation's expenditures on prime contracts were distributed across 59 six-digit NAICS codes (Table A-3 in appendix A), and for subcontracts across 161 six-digit NAICS codes (Table A-4 in appendix A)[27]. The bulk of contracts and contract dollars awarded were in the construction industry with a non-trivial share of contracts and contract dollars awarded in various professional services.

3.3 Distribution of Estimated Expenditures by Industry Classification for FY 2019-2021

According to the Department of Transportation regulations, the availability rate should be weighted by the "amount of money to be spent" in each industry. The research team requested a copy of MnDOT's estimated expenditures for the next three years, broken down by NAICS code. Projected expenditures for the next three years, included in the State Transportation

[27] NAICS is a two- through six-digit hierarchical classification system, offering five levels of detail. Each digit in the code is part of a series of progressively narrower categories, and more digits in the code signifies greater classification detail. The first two digits designate the economic sector, the third digit designates the subsector, the fourth digit designates the industry group, the fifth digit designates the NAICS industry, and the sixth digit designates the national industry. The five-digit NAICS code is the level at which there is comparability in code and definitions for most of the NAICS sectors across the three countries participating in NAICS (the United States, Canada, and Mexico). The six-digit level allows for the United States, Canada, and Mexico each to have country-specific detail. A complete and valid NAICS code contains six digits. Refer to http://www.census.gov/eos/www/naics/

Improvement Program (STIP) 2018-2021 data files, were provided by MnDOT. Projected expenditures were categorized by type of work. However, in order to calculate the weights for the availability analysis, projected expenditures must be categorized by NAICS codes. In collaboration with construction engineers in MnDOT, NAICS codes were assigned to each of the relevant projects listed in the STIP data files.

Due to the importance of projecting expenditures in the calculation of the weights, NAICS codes from past contract files were assigned to each work type based on the description of the work type and the NAICS definition. There were 127 work types with MnDOT's expenditure projection in the STIP report, and 25 distinct 6-digit NAICS codes (7 distinct 2-digit NAICS code) that were matched to the 127 work types. These matched NAICS codes encompass 98.52% of the amount of past contract dollars at the 2-digit NAICS code level.

In order to calculate the weights, 7 distinct 2-digit NAICS codes from contract files were given weights according to the expenditure projection at the 2-digit NAICS codes level assigned in the previous step. Among 128 distinct 6-digit NAICS codes from the contract file, 83 were given weights, whereas 45 of them did not receive weights due to discrepancies between the NAICS codes in the contract and STIP data file(s). These 45 NAICS codes account for 1.48% of the total award amount in the contract file. In order to preserve the 45 NAICS codes, weights from the STIP were adjusted by factoring in the excluded NAICS. Then, final weights for each of the 128 distinct 6-digit NAICS codes were calculated by applying the award amount share by each 6-digit NAICS from the contract file. The following steps were used to compute the weights for the availability analysis.

<u>Step 1:</u> Obtained the projected expenditures for the next three years (STIP data).

<u>Step 2:</u> Identified six-digit NAICS codes for each projected contract based on its type of work or work types.

<u>Step 3:</u> Combined all existing NAICs codes according to their two-digit codes and computed the share of dollars allocated.

<u>Step 4:</u> Added in each of the six-digit NAICs codes from the existing contract files.

The weights by NAICS code are shown in Table B-1 in Appendix B.

3.4 Calculating the Weighted Availability Measure

The formula below, which was prescribed in the Final Rule (1999), was used to perform the availability analysis. This formula computes the weighted share of DBE firms within the geographic market area. The weights are the share of dollars DBEs can expect to be awarded within each industrial NAICS code.

$$Availability\ Rate = \left[\left(\frac{Number\ of\ DBEs\ in\ NAICS_1}{Number\ of\ Total\ Firms\ in\ NAICS_1}\right) \times weight_1 + \left(\frac{Number\ of\ DBEs\ in\ NAICS_2}{Number\ of\ Total\ Firms\ in\ NAICS_2}\right) \times weight_2 + \cdots\right]$$

To calculate the availability rates, the number of ready, willing, and able DBEs in the defined geographic market area were compared to the total number of ready, willing, and able firms in the same geographic market area. Although the U.S. Department of Transportation does not dictate a single method for calculating the DBE availability rate or the source of the base goal, it does suggest several methods for calculating the base goal. Moreover, the federal rule mandates that all available data be used. In order to produce the best estimate of the available number of women and minority-owned firms in MnDOT's geographic market areas, the research team used a combination of relevant methods suggested in the regulations.

The U.S. Department of Transportation recommends that grant recipients use 1) a DBE directory and census data, 2) a bidders list, 3) data from a disparity study, 4) the goal of another DOT recipient, or 5) alternative methods that are "rationally related to the relative availability of DBEs in your market" [*49 CFR §26.45(c)*]. The availability rates from the last statewide disparity study were deemed out of date. The availability rates from the most recent local disparity studies (e.g., Minneapolis) were deemed inapplicable. Accordingly, the research team adopted four different measures of availability, each of which meets the standards articulated in the federal regulations. These four methods use alternative data sources, each with different advantages and disadvantages.

1) MnDOT Bidders List
2) MnDOT Certified DBE Directory
3) MnDOT Vendors List
4) Dun & Bradstreet database

3.4.1 MnDOT Bidders List Method

Step 1: The bidders list includes firms that bid on a state or federal prime contract or subcontract. The research team obtained the list of bidders on each prime contract and associated subcontracts from the AASHTOWare system maintained by MnDOT. The prime contract and subcontract lists were merged into one database. The dataset was then used to calculate both the numerator and denominator of the availability rates.

Step 2: Narrowly defined the geographic market areas as PJM-1, PJM-2, and VJM-1.

Step 3: Merged the list with information on NAICS codes from Dun & Bradstreet Hoover. Obtained missing NAICS codes with the Dun & Bradstreet Hoover's database in order to reduce to a minimum level the number of firms dropped from

any of the calculations. When we were unable to match a firm with a NAICS code, that firm was not included in the count.

Step 4: Merged the Bidders List with the DBE list in order to identify the DBE firms.

Step 5: Calculated the numerator of the availability measure by summing the number of DBEs in the geographic market for each NAICS code that represents MnDOT's relevant industries.

Step 6: Calculated the denominator of the availability measure by summing the number of firms in the geographic market for each NAICS code that represents MnDOT's relevant industries.

Step 7: Calculated the share, or the un-weighted availability, of DBEs, which is the ratio of DBEs to total firms in the relevant industry and narrowly tailored geographic market.

Step 8: Calculated the weighted availability measure by multiplying the weights by the share of DBE firms for each of the relevant industries.

Step 9: Averaged availability results across geographic market areas to obtain the final availability rate for the Bidders List Method.

Please see Table B-2 in Appendix B for the availability rates for three different geographic market areas.

3.4.2 Certified DBE List Method

Step 1: The certified DBE directory includes the firms that are certified as DBEs by MnDOT. The research team obtained the list of DBEs. The directory contains detailed information on each DBE firm including NAICS codes.

Step 2: Obtained the 2016 ZIP Codes Business Patterns (ZBP) and County Business Patterns (CBP) from the Census Bureau website (most recent year available to prepare the availability ratios). This dataset provides, for each NAICS code, the total number of firms headquartered in a given zip code. This list is used for the denominator in the availability calculation, while the merged DBE list is used to determine the numerator.[28]

Step 3: Narrowly defined the geographic markets as PJM–1, PJM–2, and VJM–1.

[28] The Census Bureau explains: An establishment is a single physical location at which business is conducted or services or industrial operations are performed. An establishment is not necessarily equivalent to a company or enterprise, which may consist of one or more establishments. A single-unit company owns or operates only one establishment. A multi-unit company owns or operates two or more establishments. (Census Bureau, County Business Patters, "How the Data Are Collected http://www.census.gov/econ/cbp/methodology.htm, accessed, June 5, 2012). As a result, the denominator includes many establishments that may not normally contract with MnDOT.

Step 4: Derived, in each geographic market and for each relevant NAICS code, the total number of DBE firms (using the DBE list) and the total number of firms (using the ZBP or CBP list).

Step 5: Calculated the share, or the un-weighted availability, of DBEs, which is the ratio of DBEs to total firms in a given relevant industry (NAICS code) and narrowly tailored geographic market.

Step 6: Calculated, for each geographical area, the weighted availability rate of DBEs according to the prescribed availability formula.

Step 7: Averaged availability results across geographic market areas to obtain the final availability rate for the DBE List Method.

Please see Tables B-3 in Appendix B for the availability rates for three different geographic market areas.

3.4.3 MnDOT Vendors List Method

Step 1: Obtained a copy of the MnDOT vendors list from the Office of Civil Rights. The vendors list is the list of firms that have done business with MnDOT. MnDOT updates the list continuously by identifying firms that are no longer in business. We used the most recently updated list[29]. This dataset was used to calculate both the numerator and denominator of the availability rate.

Step 2: Narrowly defined the geographic markets as PJM–1, PJM–2, and VJM–1.

Step 3: Merged the MnDOT vendors list with the MN UCP DBE list in order to identify the DBE firms.

Step 4: Obtained missing NAICS codes or zip codes in the vendors list using the Dun & Bradstreet database, in order to minimize the number of firms dropped from any of the calculations. When we were unable to match a firm with a NAICS code, then that firm was not included in the count[30].

Step 5: Calculated the numerator of the availability measure by summing the number of DBEs in the geographic market area for each NAICS code that represents MnDOT's relevant industries.

Step 6: Calculated the denominator of the availability measure by summing the total number of vendors in the geographic market area for each NAICS code that represents MnDOT's relevant industries.

[29] The vendor list was provided on March 13, 2018.
[30] Among 3,994 vendors, 25.08% of the vendors were missing at least one key variable to match with a NAICS code. As a result, 2,992 vendors were included in the analysis.

Step 7: Calculated the share, or the un-weighted availability, of DBEs, which is the ratio of DBEs to total firms in the relevant industry and narrowly tailored geographic market.

Step 8: Calculated the weighted availability measure by multiplying the weights by the share of DBE vendors for each of the relevant industries.

Step 9: Averaged availability results across geographic market areas to obtain the final availability rate for the Vendors List Method.

Please see Tables B-4 in Appendix B for the availability rates for three different geographic market areas.

3.4.4 Dun & Bradstreet Method

Step 1: The research team obtained access to Hoover's database, a subsidiary of Dun & Bradstreet (D&B), to compute the number of firms in each relevant NAICS code within a specific geographic market area. This research product covers more than 23 million U.S corporations and other entities (i.e. government agencies, partnerships, non-profits, and educational institutions). For the state of Minnesota, Hoover's database included information on headquarters, branches and single locations[31].

Step 2: Queried the Hoover's database to obtain the list of all the firms, minority-owned firms, and women-owned firms from the relevant NAICS codes in the relevant market areas.[32] These lists have NAICS codes for each listed firm, along with the firm's zip code, minority ownership status, and women ownership status. This dataset was used to calculate both the numerator and denominator of the availability rate.

Step 3: Narrowly defined the geographic market as PJM-1, PJM-2, and VJM-1.

Step 4: Calculated the numerator of the D&B availability measure by summing the number of minority-owned business or women-owned enterprises in the geographic market area for each NAICS code.

Step 5: Calculated the denominator of the D&B availability measure by summing the number of total firms in in the geographic market area for each NAICS code.

[31] "Headquarters" indicates that the company has subsidiaries or branches; "branch" indicates a company location other than the headquarters and single Location indicates that the company does not have any subsidiaries or branches.

[32] Unlike the other methods, the D&B method uses "self-reported" minority/gender designations. Thus, the D&B method can include firms that are not MnDOT Certified DBEs. On the other hand, not every certified DBE is included in this database because a requirement of inclusion is the existence of a DUNS number. According to Hoover's customer service, D&B contacts firms directly to verify their gender or minority status and checks with third party sources and proprietary databases for further verification.

Step 6: Calculated the share, or the un-weighted availability, of women-owned business enterprises (WBEs) or minority-owned business enterprises (MBEs), which is the ratio of WBE or MBE firms to total firms in a given relevant industry and narrowly tailored geographic market.

Step 7: Calculated, for each geographic market area, the weighted availability rate of women-owned enterprises or minority-owned business according to the prescribed availability formula.

Step 8: Averaged availability results across geographic market areas to obtain the final availability rate for the D&B Method.

Please see Tables B-5 in Appendix B for the availability rates for three different geographic market areas.

3.4.5 The Base Goal

The base goal is the weighted average across the four availability methods: Bidders List method, Certified DBE List method, Vendors List method, and Dun & Bradstreet method. Depending on the method used to calculate availability, each defined market area captures a different share of available contract dollars. As a result, each method also yields a different DBE availability goal for each market. In order to derive a single base goal for MnDOT that is based on all the goals calculated for each geographical market, it is necessary to weight each geographic market-specific goal according to the percentage of contract dollars awarded in that area.

The four different methods use data that report multiple industries for many of the firms in their databases. We count the firms at the NAICS level. Table 9 presents the details of the calculation of the weighted availability rate at the NAICS code level. This base goal is used in subsequent analysis.

3.5 Adjustment to the Base Goal

According to the USDOT regulations, recipients of federal funds are required to adjust their base goals in light of other evidence regarding the market area [*49 C.F.R. §26.45(d)*]. One valid reason for adjusting the goal would be if the analysis showed discrimination, either in the overall market place or in the specific agency or governmental unit undertaking the procurement and contracting process.

Between the years 2015—2017, 16 DBE firms graduated[33] from the MnDOT DBE program and those graduated were considered in the base goal adjustment. The graduated DBEs were no longer eligible to participate in the 2019-21 DBE program. Table 10 presents the details of the graduated DBEs. The graduated DBEs received 14.67 percent of the total contract dollars awarded to all DBE firms.

[33] DBE graduation here includes DBE firms who were certified at the award of the contract, but who have since graduated, became de-certified, or based on the regulations were disqualified from participation in the MnDOT DBE program. The research team obtained this information from MNDOT.

Table 9. Computing Base Goal

Method	PJM-1	PJM-2	VJM-1	Un-weighted Average	Weighted average	Weighted Base Goal
Bidders List Method	10.96%	11.59%	7.61%	9.41%	10.04%	9.40%
DBE List Method	4.71%	12.43%	4.35%		7.20%	
Vendors List Method	15.28%	16.15%	7.77%		13.03%	
Dun & Bradstreet	7.49%	8.39%	6.18%		7.3%	
Distribution of Award Amount to compute weights for base goal						
Percent Distribution of Award Amount	82.16%	86.03%	86.19%			
	(a)	(b)	(c)			
Proportional Weight	32.3%	33.8%	33.9%			
	(d)	(e)	(f)			

(d) = (a)/[(a)+(b)+(c)]

(e) = (b)/[(a)+(b)+(c)]

(f) = (c)/[(a)+(b)+(c)]

Note 1: Weighted average is the sum of the availability rates of each GMA multiplied by its proportional weight (d, e, and f), respectively.

Note 2: Weighted base goal is the average of weighted averages of all four methods.

Table 10: 2015 -2017 MnDOT DBE Program Graduation

	Graduated DBEs	Active DBEs	All DBEs
Firms (N)	16	148	164
Percentage	9.76%	90.24%	100%
Awarded Contracts ($)	$32,351,330.74	$190,666,374.25	$223,017,704.98
Percentage	14.67%	85.33%	100%
Note: DBE here means DBE firms utilized in 2015-2017 MnDOT DBE program.			

The research team used the Blinder-Oaxaca-Duncan residual difference decomposition[34] [35] method to make the base goal adjustment. The residual difference decomposition estimates separately the log-transformed contract amounts to DBEs and non-DBEs and computes the amount that DBEs would have received had they been treated like equally situated non-DBEs. The difference between the actual contract amounts and the "equal-treatment" amounts defines the discriminatory portion of the gap between DBEs and non-DBEs.

[34] Many analysts reference the technique simply as the Oaxaca method, due to the continuing role that Ronald Oaxaca has played in developing and expanding the decomposition methodology.

[35] Blinder, Alan, (1973), Wage Discrimination: Reduced Form and Structural Estimates, *Journal of Human Resources*, 8, issue 4, p. 436-455; Oaxaca, Ronald, (1973), Male-Female Wage Differentials in Urban Labor Markets, *International Economic Review*, 14, issue 3, p. 693-709

3.5.1 Data Used for Adjustment to the Base Goal

The contract-level data, which was merged with D&B data that contained firm-specific characteristics, was utilized for the analysis. The dataset contains 868 prime contract observations and 6,726 sub-contract observations, although there are 7,580 sub-contract observations in the sample. The additional 854 observations (11.27% of the total sample) have dollar values equal to zero for the dependent variable, which is the contract award amount. These observations were dropped from the sample because they are undefined when log-transformed for the final analysis. There were some missing values in a couple of variables, such as credit risk and age of firm (missing variable percentages range from 10.56% to 12.88%). In order to account for the missing values, extra dummy variables were created for missing observations of the corresponding variables (coded 1 for the missing values and 0 otherwise). The description of the variables used in the analysis is shown in Table C-1 in Appendix C. The summary statistics of the dataset used in the analysis is shown in Tables C-2 for both primes and subcontracts. The research team developed two methods to incorporate the DBE graduation in the base goal adjustment. The first method excludes the graduated DBEs in the analysis, while the second method treats the graduated DBEs as non-DBEs. The first method excludes 159 DBE contracts in the analysis, while the second method treats the 159 contracts as the non-DBE contracts.

3.5.2 Residual Difference Method

The research team developed four models to run the residual difference method. The dependent variable is the logarithm of the contract amount. In moving from Model 1 through Model 4, the number of variables being controlled for increases. Model 1 controls for the year of contract, industry, whether the firm is located in Minnesota, credit rating, and tenure and of the firm. In Model 2, in addition to the independent variables included in Model 1, includes whether a firm was awarded both prime and subcontracts. Model 3 controls for the factors in Model 1 and whether the firm had more than one contract. Besides the factors controlled in Model 1, Model 4 includes both whether a firm was awarded both prime and subcontracts and whether the firm had more than one contract. The results are shown in Table C-3 and Table C-4 in Appendix C for DBE and DBE_star, respectively.

3.5.3 Adjustment

The base goal is adjusted using the average of unexplained portion of residual difference methods. The adjustment is 30.13% as shown in Table 11.

3.6 Race Neutral Analysis

In compliance with federal regulations, state and local authorities must identify the maximum feasible portion of the DBE goal that can be achieved through race-neutral measures and the percentage of the goal that can only be achieved through race-conscious measures [49 C.F.R. §26.51(a)]. Myers and Ha have pioneered the use of a detailed econometric procedure that maximizes the race-neutral component of the DBE goals.

Table 11. Discrimination Gap for Adjustment

Method	Model	Unexplained Coefficient	Percent Difference between DBEs and Non-DBEs
Residual Difference: by DBE status	1	0.107*	30.14%
	2	0.098	27.61%
	3	0.100*	28.17%
	4	0.085	23.94%
Residual Difference: by DBE_Star status	1	0.125**	34.82%
	2	0.117*	32.59%
	3	0.121**	33.70%
	4	0.108**	30.08%
Average		-	**30.13%**

Source: The research team's computation

This method has established a rigorous standard for maximizing the race neutral portion of the overall DBE goal. The logic of the analysis is that some share of DBE dollars awarded would have gone to DBEs without goals. The research team computed the ratio of predicted award dollar amounts without goals over predicted award dollar amounts with and without goals using the DBE subsample in the contract files to calculate the race neutral analysis.

Table 12 shows how the race-neutral portion of the goal was calculated. The race neutral analysis based on the above-mentioned method indicates the Race-Neutral Percent is 31.17%.

Table 12. Race Neutral Analysis

Method	**Total Amount**	**N**	**Race neutral percent**	**Note**
A. Method 1 (DBE prime and subcontractor)				
Actual DBE contract (a= b+c)	$ 2,457,528,270.00	1,134		
Actual DBE contract with goals (b)	$ 2,395,969,000.00	1,095		
Actual DBE contract without goals (c)	$ 61,559,270.00	39	2.5%	=c/a
B. Method 2: Dummy Variable Method				
Predicted DBE contract (d)	$ 56,365,659.90	993		
Estimated DBE contract setting 0% goal (e)	$ 28,859,525.34	993	51.20%	=e/d
C. Method 3: Residual Difference Decomposition				
Predicted DBE contract with goals (f)	$ 55,985,505.87	957		
Predicted DBE contract without goals (g)	$ 2,064,707.11	36		
Estimated DBE contract without goals (h)	$ 34,945,958.78	957	39.80%	=1-h/(f+g)
Average			**31.17%**	

Source: The research team's computation

3.7 Public Comment Period

49 C.F.R. 26 requires an opportunity for the public to participate in establishing an overall goal.

MnDOT provided several opportunities for the public to comment and provide input on the DBE goal setting methodology. MnDOT solicited public comments from the public through its website and through in-person meetings between July 3 to 31st.[36]

MnDOT held four public meetings throughout the state to solicit input.[37] During these public meetings, Dr. Samuel Myers, economist and Roy Wilkins professor from the University of Minnesota, provided an overview to the public on the DBE goal methodology. The following includes a summary of the public comments received by email[38], in-person meetings, or MnDOT website.

Table 13 below shows the places where the public meeting was announced and the publication dates.

Table 13. Public Meeting Announcement

Publication Outlet	Publication Date
MnDOT website	July 3, 2018
State Register	July 16, 2018

3.7.1 Comments Received on the FHWA DBE Goal:

MnDOT held a public meeting announcing the proposed goal on July 11, 2018 in St. Paul. At this time, MnDOT officials had an opportunity to consult with contractors, community organizations and other organizations who regularly associate or do business with MnDOT. These consultations were held in compliance with 49 C.F.R. 26(g)(1).

People attending the July 11 public meeting announcing the proposed DBE goals had the opportunity to provide oral comments on the DBE methodology. In total, 4 people gave their comments and input on the DBE goals. Below is a summary of those comments.

One person from the audience recommended the use of a mentor protégé program or guidance with details on how to fill out forms and expectations. Another member of the public sought clarification on whether veterans could obtain DBE certification status. Two comments recommended emphasis on training. One of the individuals recommended training focused on financials and engaging diverse firms to participate in the training. Another asked questions pertaining to the bidders list method.

At no time did any of the participants in the public meeting object or challenge the methodology used to establish the proposed goals or the proposed goals themselves.

[36] Public comments were submitted to https://www.dot.state.mn.us/civilrights/dbe-goal.html or recorded by court reporters.
[37] Public meetings were held on July 9th in Rochester, July 11th in St. Paul, July 13th in Duluth, and July 23rd in St. Paul.
[38] MnDOT's notice to the public allowing comments on the proposed goal methodology is in the Appendices as Appendix D.

On July 13th MnDOT held a public meeting in Duluth. One commenter sought clarification regarding a veteran's eligibility to become a certified DBE. Another person asked questions regarding how the goals were implemented and eligibility for certification.

None of the comments challenged the methodology used to establish the proposed goals or the proposed goals themselves.

On July 31, 2018, Tim Worke, CEO, Association of General Contractors (AGC) hand delivered a memorandum to Minnesota Department of Transportation Office of Civil Rights on the MnDOT proposed DBE Goals for FY 2019-2021. Mr. Worke's memo included eight types of comments. The comments pertained to the number of available firms in the methodology was too broad, the adjustment did not address the flaws made in the availability calculation, and the DBE goals create artificial value add for DBE firms in comparison to all firms. The commenter expressed concern that there were too few DBEs in particular areas of the state, resulting in DBE's charging higher rates. The commenter also indicated that the low-bid method prevents DBE recruitment. The commenter recommended MnDOT provide resources, so primes may find DBEs. Mr. Worke indicated DBE goals sometimes conflicted with non-union signatory DBEs.

MnDOT received three email comments. One email commented that DBE goals were challenging to meet, leading to higher prices, and location should be a factor in determining goals.

Another email commented on how some women owned firms were DBE fronts, other DBE's lacked equipment and knowledge of their work, and ultimately the program is supported by the prime who pays for these issues.

Another email commented on strategies MnDOT could use to implement the goals, including differentiating between professional and construction services. This commenter expressed concerns that MnDOT does not differentiate between professional and construction services nor does MnDOT connect professional services firms with opportunities.

CHAPTER 4: THE MnDOT PROPOSED DBE GOALS

In summary, the Roy Wilkins Center presented the following recommendation, as shown in Table 14, to the Office of Civil Rights of MnDOT for the proposed overall DBE Goal and race neutral participation.

Table 14. Proposed MnDOT FHWA DBE Goals FY2019-2021

Base Goal	9.40%
Discrimination Gap for Adjustment	30.13%
Adjusted Goal	**12.23%**
Race-Neutral Portion	*31.17%*
Race-Neutral Goal	**3.81%**
Race-Conscious Portion	*68.83%*
Race-Conscious Goal	**8.42%**

Source: The research team's calculation using the compiled MnDOT data files.

CHAPTER 5: APPENDICES

APPENDIX A: UTILIZATION ANALYSIS

Table A-1. Utilization Rates by State – Prime Contracts only

State	N	Percent	Contract Amount	Percent
AK	1	0.12%	$4,775.00	0.00%
CA	3	0.35%	$748,631.23	0.03%
DC	5	0.58%	$680,083.15	0.02%
IA	10	1.15%	$23,001,082.66	0.81%
IL	3	0.35%	$274,732.20	0.01%
MA	1	0.12%	$85,926.00	0.00%
MD	2	0.23%	$222,387.63	0.01%
MI	4	0.46%	$846,099.64	0.03%
MN	728	83.87%	$2,237,038,720.70	78.83%
MT	2	0.23%	$115,389.00	0.00%
ND	3	0.35%	$2,415,141.19	0.09%
NE	7	0.81%	$139,394,808.59	4.91%
NM	1	0.12%	$47,982.40	0.00%
OR	6	0.69%	$1,102,294.77	0.04%
PA	3	0.35%	$834,536.72	0.03%
TX	4	0.46%	$1,026,645.44	0.04%
UT	1	0.12%	$57,549.20	0.00%
VA	1	0.12%	$200,000.00	0.01%
VT	3	0.35%	$272,957.00	0.01%
WA	3	0.35%	$196,898.00	0.01%
WI	77	8.87%	$429,267,061.25	15.13%
Total	868	100.00%	$2,837,833,701.76	100.00%

Source: MnDOT FHWA contracts: Oct. 1, 2014 - Sep. 30, 2017

Table A-2. Utilization Rates by State - Subcontracts only

State	N	Percent	Contract Amount	Percent
CA	4	0.06%	$1,846,504.43	0.16%
CO	3	0.04%	$52,739.19	0.00%
FL	1	0.01%	$174,739.97	0.02%
GA	1	0.01%	$27,794.95	0.00%
IA	48	0.71%	$14,787,553.39	1.28%
IL	18	0.27%	$2,839,659.97	0.25%
IN	5	0.07%	$555,783.15	0.05%
LA	1	0.01%	$34,642.16	0.00%
MA	1	0.01%	$54,169.20	0.00%
MI	10	0.15%	$3,646,629.25	0.32%
MN	6108	90.81%	$1,007,736,856.95	87.31%
MO	17	0.25%	$7,383,230.35	0.64%
MT	2	0.03%	$73,345.05	0.01%
ND	120	1.78%	$13,516,622.87	1.17%
NE	3	0.04%	$258,736.00	0.02%
NY	2	0.03%	$343,838.19	0.03%
OH	7	0.10%	$756,858.00	0.07%
PA	15	0.22%	$6,641,317.90	0.58%
SD	16	0.24%	$1,114,273.35	0.10%
TX	13	0.19%	$1,159,656.96	0.10%
WA	1	0.01%	$1,070.00	0.00%
WI	324	4.82%	$90,974,237.93	7.88%
Unknown	6	0.09%	$192,414.47	0.02%
Total	6,726	100.00%	$1,154,172,673.67	100.00%

Source: MnDOT FHWA contracts: Oct. 1, 2014 - Sep. 30, 2017

Table A-3. Utilization Rates by NAICS Code - Primes only

NAICS	N	Contract Amount	Percent
212321	6	$5,937,134.06	0.21%
236115	3	$1,176,657.66	0.04%
236117	1	$348,200.00	0.01%
236210	11	$10,772,105.06	0.38%
236220	10	$163,992,442.00	5.78%
237110	22	$92,074,881.42	3.24%
237120	5	$6,183,585.50	0.22%
237310	371	$2,153,393,513.59	75.88%
237990	32	$90,163,125.34	3.18%
238110	24	$47,955,905.78	1.69%
238140	1	$305,768.00	0.01%
238210	36	$13,608,098.10	0.48%
238220	9	$8,047,043.02	0.28%
238320	41	$19,048,003.55	0.67%
238910	39	$121,461,565.41	4.28%
238990	34	$16,213,486.24	0.57%
325510	1	$237,000.00	0.01%
335999	2	$562,102.20	0.02%
339950	7	$1,107,973.38	0.04%
423320	3	$4,938,082.93	0.17%
454111	1	$30,000.00	0.00%
484110	1	$675,665.50	0.02%
484220	2	$38,533,372.14	1.36%
484230	1	$2,295,713.50	0.08%
488510	1	$1,111,611.88	0.04%
515210	1	$562.50	0.00%
541310	6	$699,155.02	0.02%
541320	1	$318,320.00	0.01%
541330	51	$16,082,024.93	0.57%
541350	2	$174,738.20	0.01%
541511	2	$103,895.00	0.00%
541611	8	$637,723.01	0.02%
541614	6	$1,551,350.38	0.05%
541618	13	$1,462,513.56	0.05%
541620	2	$351,764.59	0.01%
541690	3	$324,607.20	0.01%
541712	3	$342,682.04	0.01%
541720	1	$24,457.15	0.00%
541810	2	$570,000.00	0.02%

541910	10	$237,693.50	0.01%
541920	1	$2,725.53	0.00%
541990	12	$647,765.06	0.02%
561499	1	$33,263.02	0.00%
561730	7	$3,082,403.56	0.11%
561990	7	$498,210.00	0.02%
611310	42	$6,244,233.65	0.22%
611699	1	$48,594.00	0.00%
611710	2	$48,561.12	0.00%
621111	1	$200,000.00	0.01%
624120	2	$445,520.73	0.02%
624310	1	$694,590.00	0.02%
711320	1	$311,779.44	0.01%
712120	2	$108,621.00	0.00%
921110	4	$237,550.00	0.01%
921190	3	$566,966.38	0.02%
922190	2	$690,000.00	0.02%
923110	1	$329,000.00	0.01%
923120	1	$34,015.00	0.00%
924120	1	$100,000.00	0.00%
Unknown	1	455379.9375	0.02%
Total	868	$2,837,833,701.76	100.00%

Source: MnDOT FHWA contracts: Oct. 1, 2014 - Sep. 30, 2017

Table A-4. Utilization Rates by NAICS Code - Subcontracts only

NAICS	N	Contract Amount	Percent
111140	1	$71,185.76	0.01%
111150	15	$122,767.14	0.01%
111411	10	$1,263,735.10	0.11%
111422	7	$297,599.37	0.03%
111991	1	$8,240.00	0.00%
111998	4	$10,941.03	0.00%
112111	2	$159,119.66	0.01%
113310	3	$179,499.96	0.02%
212312	4	$177,546.21	0.02%
212321	29	$732,207.63	0.06%
213111	4	$1,149,837.19	0.10%
213112	1	$56,020.00	0.00%
221122	1	$63,277.41	0.01%
221320	1	$9,200.00	0.00%
236115	72	$5,909,902.18	0.51%
236116	2	$205,872.70	0.02%
236118	1	$4,600.00	0.00%
236210	50	$9,647,884.45	0.84%
236220	206	$43,859,683.20	3.80%
237110	128	$19,710,884.10	1.71%
237120	27	$5,302,919.67	0.46%
237130	1	$9,000.00	0.00%
237210	1	$20,000.00	0.00%
237310	888	$364,901,124.80	31.62%
237990	53	$11,983,747.75	1.04%
238110	211	$51,246,266.39	4.44%
238120	83	$51,068,217.08	4.42%
238140	35	$8,694,232.95	0.75%
238190	18	$30,086,997.26	2.61%
238210	205	$65,270,051.86	5.66%
238220	62	$14,983,125.67	1.30%
238310	2	$11,650.00	0.00%
238320	464	$92,911,458.59	8.05%
238340	1	$500.00	0.00%
238390	1	$122,320.27	0.01%
238910	258	$41,993,567.88	3.64%
238990	462	$43,847,783.34	3.80%
311119	1	$1,000.00	0.00%
311514	1	$104,545.77	0.01%
314994	4	$135,159.21	0.01%
324121	10	$265,672.09	0.02%
325212	2	$476,915.36	0.04%
325314	1	$124,111.98	0.01%

325510	19	$1,317,103.83	0.11%
327120	10	$550,034.06	0.05%
327215	12	$867,480.44	0.08%
327310	2	$867,246.88	0.08%
327320	25	$4,079,110.71	0.35%
327331	13	$981,970.51	0.09%
327332	4	$474,584.25	0.04%
327390	19	$3,604,851.41	0.31%
331110	1	$354,595.09	0.03%
331210	1	$126,759.72	0.01%
331511	1	$18,233.47	0.00%
332312	16	$3,186,329.72	0.28%
332313	3	$953,033.12	0.08%
332322	17	$2,429,979.45	0.21%
332618	9	$1,155,859.47	0.10%
332710	1	$133,471.16	0.01%
333120	10	$3,336,075.97	0.29%
333131	1	$335,798.34	0.03%
333318	20	$352,896.90	0.03%
333924	2	$930.00	0.00%
333997	4	$725,115.00	0.06%
333999	7	$1,109,201.27	0.10%
334290	1	$26,574.84	0.00%
335129	1	$391,300.00	0.03%
336212	1	$2,755.00	0.00%
339920	3	$36,146.25	0.00%
339950	151	$22,317,453.61	1.93%
339999	1	$354,595.09	0.03%
423310	1	$122,320.27	0.01%
423320	70	$9,476,462.13	0.82%
423330	1	$71,000.00	0.01%
423390	3	$287,923.30	0.02%
423420	1	$294,000.00	0.03%
423440	8	$662,824.18	0.06%
423510	41	$4,222,787.95	0.37%
423610	16	$2,210,792.30	0.19%
423720	6	$872,783.05	0.08%
423730	2	$29,373.00	0.00%
423810	45	$7,711,128.12	0.67%
423850	5	$152,801.63	0.01%
423990	30	$3,572,585.36	0.31%
424690	2	$228,815.91	0.02%
424910	2	$5,435.28	0.00%
424950	18	$3,893,159.03	0.34%
441110	4	$790,750.00	0.07%

444110	3	$327,121.06	0.03%
444130	1	$6,307.57	0.00%
444190	22	$3,644,530.34	0.32%
444220	2	$399,905.69	0.03%
452990	1	$58,015.20	0.01%
453110	4	$188,337.80	0.02%
482112	3	$271,247.50	0.02%
484110	447	$19,315,101.56	1.67%
484121	100	$2,678,399.90	0.23%
484210	4	$1,493,044.41	0.13%
484220	251	$16,628,823.77	1.44%
484230	25	$2,767,709.90	0.24%
488210	1	$59,560.00	0.01%
488410	1	$638.00	0.00%
488490	3	$325,489.35	0.03%
488510	52	$3,257,513.70	0.28%
488999	26	$66,016.09	0.01%
517210	2	$562,157.72	0.05%
517911	1	$23,199.00	0.00%
517919	1	$10,361.91	0.00%
531190	1	$30,643.85	0.00%
531210	4	$28,901.00	0.00%
531312	1	$140,726.78	0.01%
532299	251	$18,588,250.97	1.61%
532490	18	$117,033.18	0.01%
541310	3	$607,176.22	0.05%
541320	30	$1,777,162.72	0.15%
541330	174	$43,972,019.29	3.81%
541370	20	$392,919.43	0.03%
541380	8	$796,448.13	0.07%
541430	3	$292,016.94	0.03%
541511	1	$27,794.95	0.00%
541512	17	$3,609,602.01	0.31%
541519	1	$34,233.27	0.00%
541611	3	$369,131.39	0.03%
541612	1	$5,750.00	0.00%
541613	1	$27,600.00	0.00%
541618	16	$121,654.69	0.01%
541619	3	$1,242,763.92	0.11%
541620	6	$824,824.92	0.07%
541850	1	$6,617.01	0.00%
541910	2	$34,102.52	0.00%
541920	1	$224,491.39	0.02%
541990	6	$210,011.52	0.02%
561110	2	$14,046.25	0.00%

561311	9	$49,397.44	0.00%
561320	3	$995.08	0.00%
561422	32	$186,403.80	0.02%
561499	2	$4,590.00	0.00%
561612	3	$31,743.00	0.00%
561720	6	$651,447.54	0.06%
561730	316	$32,279,916.19	2.80%
561740	1	$1,395.00	0.00%
561990	137	$7,172,409.24	0.62%
562119	1	$682,628.56	0.06%
562212	1	$2,160.00	0.00%
562910	35	$532,321.13	0.05%
562920	97	$9,294,736.02	0.81%
562991	20	$2,575,475.82	0.22%
562998	5	$448,420.09	0.04%
621111	1	$34,642.16	0.00%
623220	5	$294,514.73	0.03%
712110	1	$4,573.33	0.00%
712120	1	$5,320.00	0.00%
722511	1	$32,326.86	0.00%
811111	4	$31,585.50	0.00%
811310	1	$28,000.00	0.00%
812930	2	$69,677.14	0.01%
813410	1	$58,957.53	0.01%
813910	4	$134,800.21	0.01%
813920	1	$456,157.72	0.04%
813930	2	$6,000.00	0.00%
Unknown	567	$21,627,878.69	1.87%
Total	6,726	$1,154,172,673.67	100.00%

Source: MnDOT FHWA contracts: Oct. 1, 2014 - Sep. 30, 2017

APPENDIX B: AVAILABILITY ANALYSIS

Table B-1. Weights used for the Availability Analysis

NAICS	Description	Weight
111140	Wheat farming, field and seed production	0.000001
111411	Mushroom farming	0.000180
111422	Floriculture Production	0.000077
111991	Sugar beet farming	0.000003
212312	Crushed and Broken Limestone Mining and Quarrying	0.000091
212321	Construction Sand and Gravel Mining	0.002264
213111	Drilling Oil and Gas Wells	0.000004
236115	New Single-Family Housing Construction (except For-Sale Builders)	0.002171
236117	New Housing For-Sale Builders	0.000110
236210	Industrial Building Construction	0.004553
236220	Commercial and Institutional Building Construction	0.053027
237110	Water and Sewer Line and Related Structures Construction	0.028044
237120	Oil and Gas Pipeline and Related Structures Construction	0.002235
237310	Highway, Street, and Bridge Construction	0.666035
237990	Other Heavy and Civil Engineering Construction	0.028776
238110	Poured Concrete Foundation and Structure Contractors	0.019820
238120	Structural Steel and Precast Concrete Contractors	0.004457
238140	Masonry Contractors	0.001753
238190	Other Foundation, Structure, and Building Exterior Contractors	0.001580
238210	Electrical Contractors and Other Wiring Installation Contractors	0.009729
238220	Plumbing, Heating, and Air-Conditioning Contractors	0.005834
238320	Painting and Wall Covering Contractors	0.015522
238390	Other Building Finishing Contractors	0.000006
238910	Site Preparation Contractors	0.043890
238990	All Other Specialty Trade Contractors	0.008855
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing	0.000004
314994	Rope, Cordage, Twine, Tire Cord, and Tire Fabric Mills	0.000016
325212	Synthetic Rubber Manufacturing	0.000067
325314	Fertilizer (Mixing Only) Manufacturing	0.000003
325510	Paint and Coating Manufacturing	0.000086
327120	Clay Building Material and Refractories Manufacturing	0.001307
327215	Glass Product Manufacturing Made of Purchased Glass	0.000000
327310	Cement Manufacturing	0.000546
327320	Ready-Mix Concrete Manufacturing	0.001264
327331	Concrete Block and Brick Manufacturing	0.000782
327332	Concrete Pipe Manufacturing	0.000141

327390	Other Concrete Product Manufacturing	0.003755
331210	Iron and Steel Pipe and Tube Manufacturing from Purchased Steel	0.000007
331511	Iron Foundries	0.000013
331513	Steel Foundries (except Investment)	0.000113
332312	Fabricated Structural Metal Manufacturing	0.001059
332313	Plate Work Manufacturing	0.000073
332322	Sheet Metal Work Manufacturing	0.000621
332618	Other Fabricated Wire Product Manufacturing	0.000046
333120	Construction Machinery Manufacturing	0.000106
333131	Mining Machinery and Equipment Manufacturing	0.000029
333997	Scale and Balance Manufacturing	0.000013
333999	All Other Miscellaneous General Purpose Machinery Manufacturing	0.000003
334290	Other Communications Equipment Manufacturing	0.000002
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing	0.000144
339950	Sign Manufacturing	0.002537
339999	All Other Miscellaneous Manufacturing	0.000017
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	0.000000
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	0.000941
423390	Other Construction Material Merchant Wholesalers	0.000005
423440	Other Commercial Equipment Merchant Wholesalers	0.000019
423510	Metal Service Centers and Other Metal Merchant Wholesalers	0.000517
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	0.000128
423720	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers	0.000079
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers	0.000086
423990	Other Miscellaneous Durable Goods Merchant Wholesalers	0.000151
424690	Other Chemical and Allied Products Merchant Wholesalers	0.000016
424910	Farm Supplies Merchant Wholesalers	0.000001
424950	Paint, Varnish, and Supplies Merchant Wholesalers	0.000177
444110	Home Centers	0.000290
444130	Hardware Stores	0.000003
444190	Other Building Material Dealers	0.000360
444220	Nursery, Garden Center, and Farm Supply Stores	0.000024
452990	All Other General Merchandise Stores	0.000000
454111	Electronic Shopping	0.000011
484110	General Freight Trucking, Local	0.004992

484121	General Freight Trucking, Long-Distance, Truckload	0.000896
484210	Used Household and Office Goods Moving	0.001423
484220	Specialized Freight (except Used Goods) Trucking, Local	0.058967
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	0.002712
488490	Other Support Activities for Road Transportation	0.000023
488510	Freight Transportation Arrangement	0.001830
515210	Cable and Other Subscription Programming	0.000000
517210	Wireless Telecommunications Carriers (except Satellite)	0.000008
517911	Telecommunications Resellers	0.000009
517919	All Other Telecommunications	0.000003
531190	Lessors of Other Real Estate Property	0.000072
531311	Residential Property Managers	0.000020
531312	Nonresidential Property Managers	0.000331
532120	Truck, Utility Trailer, and RV (Recreational Vehicle) Rental and Leasing	0.000001
532299	All Other Consumer Goods Rental	0.001973
541310	Architectural Services	0.000189
541320	Landscape Architectural Services	0.000105
541330	Engineering Services	0.003537
541350	Building Inspection Services	0.000021
541370	Surveying and Mapping (except Geophysical) Services	0.000012
541380	Testing Laboratories	0.000047
541430	Graphic Design Services	0.000002
541511	Custom Computer Programming Services	0.000014
541512	Computer Systems Design Services	0.000013
541519	Other Computer Related Services	0.000008
541611	Administrative Management and General Management Consulting Services	0.000080
541613	Marketing Consulting Services	0.000003
541614	Process, Physical Distribution, and Logistics Consulting Services	0.000183
541618	Other Management Consulting Services	0.000173
541620	Environmental Consulting Services	0.000146
541690	Other Scientific and Technical Consulting Services	0.000041
541712	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	0.000040
541720	Research and Development in the Social Sciences and Humanities	0.000003
541810	Advertising Agencies	0.000067
541850	Outdoor Advertising	0.000001
541910	Marketing Research and Public Opinion Polling	0.000048
541990	All Other Professional, Scientific, and Technical Services	0.000181
561499	All Other Business Support Services	0.000004
561720	Janitorial Services	0.000026
561730	Landscaping Services	0.001650

561990	All Other Support Services	0.000302
562910	Remediation Services	0.000008
562920	Materials Recovery Facilities	0.000327
562991	Septic Tank and Related Services	0.000010
562998	All Other Miscellaneous Waste Management Services	0.000002
611710	Educational Support Services	0.005184
621111	Offices of Physicians (except Mental Health Specialists)	0.000074
623220	Residential Intellectual and Developmental Disability Facilities	0.000069
624120	Services for the Elderly and Persons with Disabilities	0.000161
624310	Vocational Rehabilitation Services	0.000251
712110	Museums	0.000001
712120	Historical Sites	0.000041
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	0.000083
812930	Parking Lots and Garages	0.000001
813410	Civic and Social Organizations	0.000105
813910	Business Associations	0.000022
813920	Professional Organizations	0.000296
	Total	1.000000

Table B-2. Availability Analysis - Bidders List Method
PJM-1

NAICS	Weight	DBEs	Total Firms	Unweighted	Weighted
111140	0.00000	0	1	0.0000	0.0000
111411	0.00018	0	1	0.0000	0.0000
111422	0.00008	0	2	0.0000	0.0000
111991	0.00000	0	1	0.0000	0.0000
212312	0.00009	0	2	0.0000	0.0000
212321	0.00226	0	11	0.0000	0.0000
213111	0.00000	0	1	0.0000	0.0000
236115	0.00217	4	21	0.1905	0.0004
236117	0.00011	0	1	0.0000	0.0000
236210	0.00455	0	12	0.0000	0.0000
236220	0.05303	3	15	0.2000	0.0106
237110	0.02804	4	39	0.1026	0.0029
237120	0.00223	0	1	0.0000	0.0000
237310	0.66604	7	106	0.0660	0.0440
237990	0.02878	1	12	0.0833	0.0024
238110	0.01982	4	29	0.1379	0.0027
238120	0.00446	2	5	0.4000	0.0018
238140	0.00175	1	8	0.1250	0.0002
238190	0.00158	1	3	0.3333	0.0005
238210	0.00973	4	38	0.1053	0.0010
238220	0.00583	0	5	0.0000	0.0000
238320	0.01552	1	8	0.1250	0.0019
238390	0.00001	0	1	0.0000	0.0000
238910	0.04389	6	48	0.1250	0.0055
238990	0.00886	6	43	0.1395	0.0012
311514	0.00000	0	1	0.0000	0.0000
314994	0.00002	0	2	0.0000	0.0000
325212	0.00007				
325314	0.00000	0	1	0.0000	0.0000
325510	0.00009	0	1	0.0000	0.0000
327120	0.00131	0	1	0.0000	0.0000
327215	0.00000				
327310	0.00055	0	2	0.0000	0.0000
327320	0.00126	0	12	0.0000	0.0000
327331	0.00078	0	2	0.0000	0.0000
327332	0.00014	0	2	0.0000	0.0000
327390	0.00376	0	4	0.0000	0.0000
331210	0.00001				

331511	0.00001	0	1	0.0000	0.0000
331513	0.00011	0	1	0.0000	0.0000
332312	0.00106	1	6	0.1667	0.0002
332313	0.00007	0	1	0.0000	0.0000
332322	0.00062	1	4	0.2500	0.0002
332618	0.00005	0	1	0.0000	0.0000
333120	0.00011	1	3	0.3333	0.0000
333131	0.00003	0	1	0.0000	0.0000
333997	0.00001				
333999	0.00000	0	2	0.0000	0.0000
334290	0.00000	0	1	0.0000	0.0000
335999	0.00014	0	1	0.0000	0.0000
339950	0.00254	1	3	0.3333	0.0008
339999	0.00002	0	2		
423310	0.00000				
423320	0.00094	1	7	0.1429	0.0001
423390	0.00000	0	4	0.0000	0.0000
423440	0.00002	0	1	0.0000	0.0000
423510	0.00052	0	4	0.0000	0.0000
423610	0.00013	4	7	0.5714	0.0001
423720	0.00008	0	2	0.0000	0.0000
423810	0.00009	1	4	0.2500	0.0000
423990	0.00015	2	5	0.4000	0.0001
424690	0.00002				
424910	0.00000	1	1	1.0000	0.0000
424950	0.00018	1	1	1.0000	0.0002
444110	0.00029				
444130	0.00000				
444190	0.00036	1	4	0.2500	0.0001
444220	0.00002	0	5	0.0000	0.0000
452990	0.00000	0	1	0.0000	0.0000
454111	0.00001	0	1	0.0000	0.0000
484110	0.00499	11	23	0.4783	0.0024
484121	0.00090	2	5	0.4000	0.0004
484210	0.00142	0	1	0.0000	0.0000
484220	0.05897	5	13	0.3846	0.0227
484230	0.00271	1	6	0.1667	0.0005
488490	0.00002	1	3	0.3333	0.0000
488510	0.00183	2	5	0.4000	0.0007
515210	0.00000	0	1	0.0000	0.0000
517210	0.00001	1	1	1.0000	0.0000
517911	0.00001	0	1	0.0000	0.0000

517919	0.00000	0	1	0.0000	0.0000
531190	0.00007	0	1	0.0000	0.0000
531311	0.00002				
531312	0.00033	0	1	0.0000	0.0000
532120	0.00000	0	1	0.0000	0.0000
532299	0.00197	0	3	0.0000	0.0000
541310	0.00019	1	4	0.2500	0.0000
541320	0.00011	0	9	0.0000	0.0000
541330	0.00354	6	41	0.1463	0.0005
541350	0.00002	0	1	0.0000	0.0000
541370	0.00001	0	4	0.0000	0.0000
541380	0.00005	1	6	0.1667	0.0000
541430	0.00000				
541511	0.00001	0	1	0.0000	0.0000
541512	0.00001	1	1	1.0000	0.0000
541519	0.00001	1	1	1.0000	0.0000
541611	0.00008	1	3	0.3333	0.0000
541613	0.00000	0	1	0.0000	0.0000
541614	0.00018				
541618	0.00017	1	6	0.1667	0.0000
541620	0.00015	0	2	0.0000	0.0000
541690	0.00004	2	3	0.6667	0.0000
541712	0.00004	0	1	0.0000	0.0000
541720	0.00000	0	1	0.0000	0.0000
541810	0.00007	0	2	0.0000	0.0000
541850	0.00000				
541910	0.00005	0	4	0.0000	0.0000
541990	0.00018	0	2	0.0000	0.0000
561499	0.00000				
561720	0.00003	0	1	0.0000	0.0000
561730	0.00165	2	56	0.0357	0.0001
561990	0.00030	1	9	0.1111	0.0000
562910	0.00001	0	2	0.0000	0.0000
562920	0.00033	0	4	0.0000	0.0000
562991	0.00001	1	2	0.5000	0.0000
562998	0.00000	1	1	1.0000	0.0000
611710	0.00518	1	1	1.0000	0.0052
621111	0.00007				
623220	0.00007	0	1	0.0000	0.0000
624120	0.00016				
624310	0.00025	0	1	0.0000	0.0000
712110	0.00000	0	2	0.0000	0.0000

712120	0.00004	0	1	0.0000	0.0000
811310	0.00008				
812930	0.00000		1	0.0000	0.0000
813410	0.00010	0	2	0.0000	0.0000
813910	0.00002	0	3	0.0000	0.0000
813920	0.00030				
Total	1.00	102	762	13.39%	10.96%

PJM-2

NAICS	Weight	DBE	Total Firms	Unweighted	Weighted
111140	0.00000	0	1	0.0000	0.0000
111411	0.00018				
111422	0.00008				
111991	0.00000				
212312	0.00009	0	1	0.0000	0.0000
212321	0.00226	0	9	0.0000	0.0000
213111	0.00000	0	1	0.0000	0.0000
236115	0.00217	4	13	0.3077	0.0007
236117	0.00011	0	1	0.0000	0.0000
236210	0.00455	0	8	0.0000	0.0000
236220	0.05303	1	9	0.1111	0.0059
237110	0.02804	1	21	0.0476	0.0013
237120	0.00223	0	1	0.0000	0.0000
237310	0.66604	6	67	0.0896	0.0596
237990	0.02878	0	6	0.0000	0.0000
238110	0.01982	3	16	0.1875	0.0037
238120	0.00446	1	3	0.3333	0.0015
238140	0.00175	1	5	0.2000	0.0004
238190	0.00158	0	2	0.0000	0.0000
238210	0.00973	2	25	0.0800	0.0008
238220	0.00583	0	5	0.0000	0.0000
238320	0.01552	1	7	0.1429	0.0022
238390	0.00001	0	1	0.0000	0.0000
238910	0.04389	4	25	0.1600	0.0070
238990	0.00886	5	29	0.1724	0.0015
311514	0.00000	0	1	0.0000	0.0000
314994	0.00002	0	1	0.0000	0.0000
325212	0.00007				
325314	0.00000	0	1	0.0000	0.0000
325510	0.00009	0	1	0.0000	0.0000
327120	0.00131	0	1	0.0000	0.0000
327215	0.00000				
327310	0.00055	0	2	0.0000	0.0000
327320	0.00126	0	6	0.0000	0.0000
327331	0.00078	0	2	0.0000	0.0000
327332	0.00014	0	2	0.0000	0.0000
327390	0.00376	0	3	0.0000	0.0000
331210	0.00001				
331511	0.00001	0	1	0.0000	0.0000
331513	0.00011	0	1	0.0000	0.0000

332312	0.00106	1	5	0.2000	0.0002
332313	0.00007	0	1	0.0000	0.0000
332322	0.00062	1	4	0.2500	0.0002
332618	0.00005	0	1	0.0000	0.0000
333120	0.00011	1	2	0.5000	0.0001
333131	0.00003	0	1	0.0000	0.0000
333997	0.00001				
333999	0.00000	0	2	0.0000	0.0000
334290	0.00000	0	1	0.0000	0.0000
335999	0.00014	0	1	0.0000	0.0000
339950	0.00254	1	2	0.5000	0.0013
339999	0.00002	0	1	0.0000	0.0000
423310	0.00000				
423320	0.00094	0	3	0.0000	0.0000
423390	0.00000	0	3	0.0000	0.0000
423440	0.00002	0	1	0.0000	0.0000
423510	0.00052	0	3	0.0000	0.0000
423610	0.00013	4	7	0.5714	0.0001
423720	0.00008	0	2	0.0000	0.0000
423810	0.00009	1	3	0.3333	0.0000
423990	0.00015	2	4	0.5000	0.0001
424690	0.00002	0	1	0.0000	0.0000
424910	0.00000				
424950	0.00018	1	1	1.0000	0.0002
444110	0.00029				
444130	0.00000				
444190	0.00036	1	3	0.3333	0.0001
444220	0.00002	0	4	0.0000	0.0000
452990	0.00000	0	1	0.0000	0.0000
454111	0.00001	0	1	0.0000	0.0000
484110	0.00499	6	12	0.5000	0.0025
484121	0.00090	1	1	1.0000	0.0009
484210	0.00142	0	2	0.0000	0.0000
484220	0.05897	3	10	0.3000	0.0177
484230	0.00271	1	3	0.3333	0.0009
488490	0.00002	1	2	0.5000	0.0000
488510	0.00183	2	3	0.6667	0.0012
515210	0.00000	0	1	0.0000	0.0000
517210	0.00001	1	1	1.0000	0.0000
517911	0.00001	0	1	0.0000	0.0000
517919	0.00000				
531190	0.00007	0	1	0.0000	0.0000

531311	0.00002				
531312	0.00033	0	1	0.0000	0.0000
532120	0.00000	0	1	0.0000	0.0000
532299	0.00197	0	2	0.0000	0.0000
541310	0.00019	1	3	0.3333	0.0001
541320	0.00011	0	5	0.0000	0.0000
541330	0.00354	5	40	0.1250	0.0004
541350	0.00002	0	1	0.0000	0.0000
541370	0.00001	0	3	0.0000	0.0000
541380	0.00005	1	4	0.2500	0.0000
541430	0.00000				
541511	0.00001	0	1	0.0000	0.0000
541512	0.00001	1	1	1.0000	0.0000
541519	0.00001	1	1	1.0000	0.0000
541611	0.00008	1	4	0.2500	0.0000
541613	0.00000	0	1	0.0000	0.0000
541614	0.00018				
541618	0.00017	1	6	0.1667	0.0000
541620	0.00015	0	2	0.0000	0.0000
541690	0.00004	1	2	0.5000	0.0000
541712	0.00004	0	1	0.0000	0.0000
541720	0.00000	0	1	0.0000	0.0000
541810	0.00007	0	2	0.0000	0.0000
541850	0.00000				
541910	0.00005	0	3	0.0000	0.0000
541990	0.00018	0	2	0.0000	0.0000
561499	0.00000				
561720	0.00003				
561730	0.00165	0	28	0.0000	0.0000
561990	0.00030	1	4	0.2500	0.0001
562910	0.00001	0	1	0.0000	0.0000
562920	0.00033	0	4	0.0000	0.0000
562991	0.00001	1	2	0.5000	0.0000
562998	0.00000				
611710	0.00518	1	1	1.0000	0.0052
621111	0.00007				
623220	0.00007	0	1	0.0000	0.0000
624120	0.00016				
624310	0.00025	0	1	0.0000	0.0000
712110	0.00000	0	1	0.0000	0.0000
712120	0.00004	0	1	0.0000	0.0000
811310	0.00008				

812930	0.00000				
813410	0.00010				
813910	0.00002	0	3	0.0000	0.0000
813920	0.00030				
Total	1.00	72	507	14.20%	11.59%

VJM-1

NAICS	Weight	DBE	Total Firms	Unweighted	Weighted
111140	0.00000				
111411	0.00018				
111422	0.00008				
111991	0.00000				
212312	0.00009	0	1	0.0000	0.0000
212321	0.00226	0	3	0.0000	0.0000
213111	0.00000	0	1	0.0000	0.0000
236115	0.00217	1	6	0.1667	0.0004
236117	0.00011	0	1	0.0000	0.0000
236210	0.00455	0	7	0.0000	0.0000
236220	0.05303	3	7	0.4286	0.0227
237110	0.02804	1	17	0.0588	0.0016
237120	0.00223	0	1	0.0000	0.0000
237310	0.66604	1	54	0.0185	0.0123
237990	0.02878	0	4	0.0000	0.0000
238110	0.01982	2	15	0.1333	0.0026
238120	0.00446	2	4	0.5000	0.0022
238140	0.00175	1	2	0.5000	0.0009
238190	0.00158	0	1	0.0000	0.0000
238210	0.00973	1	13	0.0769	0.0007
238220	0.00583	0	2	0.0000	0.0000
238320	0.01552	0	4	0.0000	0.0000
238390	0.00001				
238910	0.04389	1	23	0.0435	0.0019
238990	0.00886	2	15	0.1333	0.0012
311514	0.00000				
314994	0.00002				
325212	0.00007				
325314	0.00000				
325510	0.00009				
327120	0.00131				
327215	0.00000				
327310	0.00055	0	1	0.0000	0.0000
327320	0.00126	0	4	0.0000	0.0000
327331	0.00078	0	1	0.0000	0.0000
327332	0.00014				
327390	0.00376				
331210	0.00001				
331511	0.00001	0	1	0.0000	0.0000

331513	0.00011	0	1	0.0000	0.0000
332312	0.00106				
332313	0.00007	0	1		
332322	0.00062	0	2		
332618	0.00005				
333120	0.00011	1	1	1.0000	0.0001
333131	0.00003				
333997	0.00001				
333999	0.00000	0	1	0.0000	0.0000
334290	0.00000	0	1	0.0000	0.0000
335999	0.00014	0	1	0.0000	0.0000
339950	0.00254	1	2	0.5000	0.0013
339999	0.00002				
423310	0.00000				
423320	0.00094	1	4	0.2500	0.0002
423390	0.00000				
423440	0.00002				
423510	0.00052	0	2	0.0000	0.0000
423610	0.00013	1	1	1.0000	0.0001
423720	0.00008				
423810	0.00009				
423990	0.00015	1	4	0.2500	0.0000
424690	0.00002	0	1	0.0000	0.0000
424910	0.00000				
424950	0.00018	1	1		
444110	0.00029				
444130	0.00000				
444190	0.00036	1	2	0.5000	0.0002
444220	0.00002	0	4	0.0000	0.0000
452990	0.00000				
454111	0.00001				
484110	0.00499	4	6	0.6667	0.0033
484121	0.00090	1	1	1.0000	0.0009
484210	0.00142				
484220	0.05897	2	6	0.3333	0.0197
484230	0.00271	1	2		
488490	0.00002	0	1	0.0000	0.0000
488510	0.00183	1	1	1.0000	0.0018
515210	0.00000				
517210	0.00001				
517911	0.00001				
517919	0.00000				

531190	0.00007				
531311	0.00002				
531312	0.00033				
532120	0.00000	0	1		
532299	0.00197	0	1	0.0000	0.0000
541310	0.00019				
541320	0.00011	0	2	0.0000	0.0000
541330	0.00354	2	4	0.5000	0.0018
541350	0.00002				
541370	0.00001				
541380	0.00005	0	1	0.0000	0.0000
541430	0.00000				
541511	0.00001				
541512	0.00001	1	1	1.0000	0.0000
541519	0.00001				
541611	0.00008				
541613	0.00000				
541614	0.00018				
541618	0.00017	0	1	0.0000	0.0000
541620	0.00015				
541690	0.00004				
541712	0.00004				
541720	0.00000				
541810	0.00007	0	1	0.0000	0.0000
541850	0.00000				
541910	0.00005	0	1	0.0000	0.0000
541990	0.00018				
561499	0.00000				
561720	0.00003				
561730	0.00165	0	14	0.0000	0.0000
561990	0.00030	0	3	0.0000	0.0000
562910	0.00001				
562920	0.00033	0	2	0.0000	0.0000
562991	0.00001				
562998	0.00000	1	1	1.0000	0.0000
611710	0.00518				
621111	0.00007				
623220	0.00007				
624120	0.00016				
624310	0.00025				
712110	0.00000	0	1	0.0000	0.0000
712120	0.00004				

811310	0.00008				
812930	0.00000				
813410	0.00010				
813910	0.00002	0	1	0.0000	0.0000
813920	0.00030				
Total	1.00	35	269	13.01%	7.61%

Table B-3. Availability Analysis - Certified DBE List Method
PJM-1

NAICS	Weight	DBEs	Total Firms	Unweighted	Weighted
111140	0.0000				
111411	0.0002				
111422	0.0001				
111991	0.0000				
212312	0.0001	0	16	0.0000	0.0000
212321	0.0023	2	61	0.0328	0.0001
213111	0.0000	0	9	0.0000	0.0000
236115	0.0022	0	1105	0.0000	0.0000
236117	0.0001	0	267	0.0000	0.0000
236210	0.0046	1	61	0.0164	0.0001
236220	0.0530	12	706	0.0170	0.0009
237110	0.0280	5	285	0.0175	0.0005
237120	0.0022	0	15	0.0000	0.0000
237310	0.6660	16	278	0.0576	0.0383
237990	0.0288	3	123	0.0244	0.0007
238110	0.0198	6	555	0.0108	0.0002
238120	0.0045	2	53	0.0377	0.0002
238140	0.0018	6	517	0.0116	0.0000
238190	0.0016	5	120	0.0417	0.0001
238210	0.0097	16	1536	0.0104	0.0001
238220	0.0058	11	1772	0.0062	0.0000
238320	0.0155	11	746	0.0147	0.0002
238390	0.0000	7	201	0.0348	0.0000
238910	0.0439	18	878	0.0205	0.0009
238990	0.0089	17	1359	0.0125	0.0001
311514	0.0000	0	10	0.0000	0.0000
314994	0.0000	0	3	0.0000	0.0000
325212	0.0001	0	3	0.0000	0.0000
325314	0.0000	0	9	0.0000	0.0000
325510	0.0001	0	27	0.0000	0.0000
327120	0.0013	0	7	0.0000	0.0000
327215	0.0000	0	18	0.0000	0.0000
327310	0.0005	0	2	0.0000	0.0000
327320	0.0013	0	146	0.0000	0.0000
327331	0.0008	0	19	0.0000	0.0000
327332	0.0001	0	10	0.0000	0.0000
327390	0.0038	0	39	0.0000	0.0000
331210	0.0000	0	9	0.0000	0.0000

331511	0.0000	0	13	0.0000	0.0000
331513	0.0001	0	4	0.0000	0.0000
332312	0.0011	2	69	0.0290	0.0000
332313	0.0001	1	42	0.0238	0.0000
332322	0.0006	1	97	0.0103	0.0000
332618	0.0000	0	19	0.0000	0.0000
333120	0.0001	0	33	0.0000	0.0000
333131	0.0000	0	6	0.0000	0.0000
333997	0.0000	0	3	0.0000	0.0000
333999	0.0000	0	61	0.0000	0.0000
334290	0.0000	1	6	0.1667	0.0000
335999	0.0001	0	24	0.0000	0.0000
339950	0.0025	2	124	0.0161	0.0000
339999	0.0000	0	170	0.0000	0.0000
423310	0.0000	1	134	0.0075	0.0000
423320	0.0009	1	41	0.0244	0.0000
423390	0.0000	2	63	0.0317	0.0000
423440	0.0000	0	65	0.0000	0.0000
423510	0.0005	0	121	0.0000	0.0000
423610	0.0001	6	234	0.0256	0.0000
423720	0.0001	1	98	0.0102	0.0000
423810	0.0001	0	99	0.0000	0.0000
423990	0.0002	0	217	0.0000	0.0000
424690	0.0000	1	175	0.0057	0.0000
424910	0.0000	2	320	0.0063	0.0000
424950	0.0002	1	23	0.0435	0.0000
444110	0.0003	0	122	0.0000	0.0000
444130	0.0000	0	481	0.0000	0.0000
444190	0.0004	2	618	0.0032	0.0000
444220	0.0000	3	306	0.0098	0.0000
452990	0.0000	0	543	0.0000	0.0000
454111	0.0000	1	518	0.0019	0.0000
484110	0.0050	3	754	0.0040	0.0000
484121	0.0009	1	928	0.0011	0.0000
484210	0.0014	1	108	0.0093	0.0000
484220	0.0590	56	772	0.0725	0.0043
484230	0.0027	1	231	0.0043	0.0000
488490	0.0000	4	48	0.0833	0.0000
488510	0.0018	2	311	0.0064	0.0000
515210	0.0000	0	11	0.0000	0.0000
517210	0.0000	0	226	0.0000	0.0000
517911	0.0000	0	36	0.0000	0.0000

517919	0.0000	2	61	0.0328	0.0000
531190	0.0001	0	137	0.0000	0.0000
531311	0.0000	1	779	0.0013	0.0000
531312	0.0003	0	310	0.0000	0.0000
532120	0.0000	1	86	0.0116	0.0000
532299	0.0020	0	65	0.0000	0.0000
541310	0.0002	12	358	0.0335	0.0000
541320	0.0001	11	76	0.1447	0.0000
541330	0.0035	19	916	0.0207	0.0001
541350	0.0000	1	123	0.0081	0.0000
541370	0.0000	3	94	0.0319	0.0000
541380	0.0000	2	117	0.0171	0.0000
541430	0.0000	6	436	0.0138	0.0000
541511	0.0000	7	1659	0.0042	0.0000
541512	0.0000	9	1033	0.0087	0.0000
541519	0.0000	0	463	0.0000	0.0000
541611	0.0001	20	1390	0.0144	0.0000
541613	0.0000	4	790	0.0051	0.0000
541614	0.0002	6	138	0.0435	0.0000
541618	0.0002	10	189	0.0529	0.0000
541620	0.0001	4	121	0.0331	0.0000
541690	0.0000	9	408	0.0221	0.0000
541712	0.0000	0	214	0.0000	0.0000
541720	0.0000	5	32	0.1563	0.0000
541810	0.0001	1	306	0.0033	0.0000
541850	0.0000	1	60	0.0167	0.0000
541910	0.0000	4	127	0.0315	0.0000
541990	0.0002	1	676	0.0015	0.0000
561499	0.0000	1	95	0.0105	0.0000
561720	0.0000	7	1223	0.0057	0.0000
561730	0.0017	19	2087	0.0091	0.0000
561990	0.0003	1	336	0.0030	0.0000
562910	0.0000	3	65	0.0462	0.0000
562920	0.0003	1	32	0.0313	0.0000
562991	0.0000	3	91	0.0330	0.0000
562998	0.0000	1	41	0.0244	0.0000
611710	0.0052	1	191	0.0052	0.0000
621111	0.0001	0	1489	0.0000	0.0000
623220	0.0001	0	322	0.0000	0.0000
624120	0.0002	0	674	0.0000	0.0000
624310	0.0003	0	330	0.0000	0.0000
712110	0.0000	0	144	0.0000	0.0000

712120	0.0000	0	38	0.0000	0.0000
811310	0.0001	1	548	0.0018	0.0000
812930	0.0000	0	178	0.0000	0.0000
813410	0.0001	0	1046	0.0000	0.0000
813910	0.0000	0	391	0.0000	0.0000
813920	0.0003	0	150	0.0000	0.0000
Total	1.0000	411	39874	1.03%	4.71%

PJM-2

NAICS	Weight	DBEs	Total Firms	Unweighted	Weighted
111140	0.0000			0.0000	0.0000
111411	0.0002			0.0000	0.0000
111422	0.0001			0.0000	0.0000
111991	0.0000			0.0000	0.0000
212312	0.0001	0	12	0.0000	0.0000
212321	0.0023	1	21	0.0476	0.0001
213111	0.0000	0	4	0.0000	0.0000
236115	0.0022	0	347	0.0000	0.0000
236117	0.0001	0	88	0.0000	0.0000
236210	0.0046	0	22	0.0000	0.0000
236220	0.0530	10	264	0.0379	0.0020
237110	0.0280	4	110	0.0364	0.0010
237120	0.0022	0	4	0.0000	0.0000
237310	0.6660	13	84	0.1548	0.1031
237990	0.0288	3	28	0.1071	0.0031
238110	0.0198	5	215	0.0233	0.0005
238120	0.0045	2	25	0.0800	0.0004
238140	0.0018	6	186	0.0323	0.0001
238190	0.0016	5	43	0.1163	0.0002
238210	0.0097	15	531	0.0282	0.0003
238220	0.0058	9	682	0.0132	0.0001
238320	0.0155	10	287	0.0348	0.0005
238390	0.0000	7	79	0.0886	0.0000
238910	0.0439	16	316	0.0506	0.0022
238990	0.0089	15	430	0.0349	0.0003
311514	0.0000	0	3	0.0000	0.0000
314994	0.0000	0	1	0.0000	0.0000
325212	0.0001	0	2	0.0000	0.0000
325314	0.0000	0	5	0.0000	0.0000
325510	0.0001	0	14	0.0000	0.0000
327120	0.0013			0.0000	0.0000
327215	0.0000	0	11	0.0000	0.0000
327310	0.0005	0	1	0.0000	0.0000
327320	0.0013	0	45	0.0000	0.0000
327331	0.0008	0	10	0.0000	0.0000
327332	0.0001	0	3	0.0000	0.0000
327390	0.0038	0	10	0.0000	0.0000
331210	0.0000	0	1	0.0000	0.0000
331511	0.0000	0	8	0.0000	0.0000

331513	0.0001	0	4	0.0000	0.0000
332312	0.0011	2	32	0.0625	0.0001
332313	0.0001	1	17	0.0588	0.0000
332322	0.0006	1	38	0.0263	0.0000
332618	0.0000	0	10	0.0000	0.0000
333120	0.0001	0	11	0.0000	0.0000
333131	0.0000	0	5	0.0000	0.0000
333997	0.0000	0	2	0.0000	0.0000
333999	0.0000	0	23	0.0000	0.0000
334290	0.0000	1	3	0.3333	0.0000
335999	0.0001	0	12	0.0000	0.0000
339950	0.0025	2	55	0.0364	0.0001
339999	0.0000	0	42	0.0000	0.0000
423310	0.0000	1	53	0.0189	0.0000
423320	0.0009	1	22	0.0455	0.0000
423390	0.0000	0	31	0.0000	0.0000
423440	0.0000	0	26	0.0000	0.0000
423510	0.0005	0	59	0.0000	0.0000
423610	0.0001	6	112	0.0536	0.0000
423720	0.0001	1	45	0.0222	0.0000
423810	0.0001	0	53	0.0000	0.0000
423990	0.0002	0	81	0.0000	0.0000
424690	0.0000	1	70	0.0143	0.0000
424910	0.0000	0	52	0.0000	0.0000
424950	0.0002	1	13	0.0769	0.0000
444110	0.0003	0	43	0.0000	0.0000
444130	0.0000	0	135	0.0000	0.0000
444190	0.0004	2	204	0.0098	0.0000
444220	0.0000	1	96	0.0104	0.0000
452990	0.0000	0	152	0.0000	0.0000
454111	0.0000	1	189	0.0053	0.0000
484110	0.0050	2	218	0.0092	0.0000
484121	0.0009	1	261	0.0038	0.0000
484210	0.0014	1	45	0.0222	0.0000
484220	0.0590	41	248	0.1653	0.0097
484230	0.0027	0	70	0.0000	0.0000
488490	0.0000	2	17	0.1176	0.0000
488510	0.0018	1	111	0.0090	0.0000
515210	0.0000	0	4	0.0000	0.0000
517210	0.0000	0	105	0.0000	0.0000
517911	0.0000	0	19	0.0000	0.0000
517919	0.0000	2	24	0.0833	0.0000

531190	0.0001	0	53	0.0000	0.0000
531311	0.0000	1	290	0.0034	0.0000
531312	0.0003	0	120	0.0000	0.0000
532120	0.0000	1	28	0.0357	0.0000
532299	0.0020	0	23	0.0000	0.0000
541310	0.0002	12	137	0.0876	0.0000
541320	0.0001	8	29	0.2759	0.0000
541330	0.0035	19	430	0.0442	0.0002
541350	0.0000	1	63	0.0159	0.0000
541370	0.0000	3	38	0.0789	0.0000
541380	0.0000	2	55	0.0364	0.0000
541430	0.0000	6	129	0.0465	0.0000
541511	0.0000	6	533	0.0113	0.0000
541512	0.0000	9	349	0.0258	0.0000
541519	0.0000	0	154	0.0000	0.0000
541611	0.0001	19	477	0.0398	0.0000
541613	0.0000	4	258	0.0155	0.0000
541614	0.0002	6	52	0.1154	0.0000
541618	0.0002	10	65	0.1538	0.0000
541620	0.0001	4	50	0.0800	0.0000
541690	0.0000	9	139	0.0647	0.0000
541712	0.0000	0	73	0.0000	0.0000
541720	0.0000	5	11	0.4545	0.0000
541810	0.0001	1	90	0.0111	0.0000
541850	0.0000	1	27	0.0370	0.0000
541910	0.0000	4	32	0.1250	0.0000
541990	0.0002	1	205	0.0049	0.0000
561499	0.0000	1	30	0.0333	0.0000
561720	0.0000	7	459	0.0153	0.0000
561730	0.0017	17	843	0.0202	0.0000
561990	0.0003	1	104	0.0096	0.0000
562910	0.0000	2	38	0.0526	0.0000
562920	0.0003	1	8	0.1250	0.0000
562991	0.0000	2	30	0.0667	0.0000
562998	0.0000	1	15	0.0667	0.0000
611710	0.0052	1	61	0.0164	0.0001
621111	0.0001	0	812	0.0000	0.0000
623220	0.0001	0	118	0.0000	0.0000
624120	0.0002	0	288	0.0000	0.0000
624310	0.0003	0	113	0.0000	0.0000
712110	0.0000	0	49	0.0000	0.0000
712120	0.0000	0	8	0.0000	0.0000

811310	0.0001	1	196	0.0051	0.0000
812930	0.0000	0	46	0.0000	0.0000
813410	0.0001	0	301	0.0000	0.0000
813910	0.0000	0	172	0.0000	0.0000
813920	0.0003	0	71	0.0000	0.0000
Total	1.0000	359	14376	2.50%	12.43%

VJM-1

NAICS	Weight	DBEs	Total Firms	Unweighted	Weighted
111140	0.0000			0.0000	0.0000
111411	0.0002			0.0000	0.0000
111422	0.0001			0.0000	0.0000
111991	0.0000			0.0000	0.0000
212312	0.0001	0	5	0.0000	0.0000
212321	0.0023	1	19	0.0526	0.0001
213111	0.0000	0	1	0.0000	0.0000
236115	0.0022	0	203	0.0000	0.0000
236117	0.0001	0	77	0.0000	0.0000
236210	0.0046	0	13	0.0000	0.0000
236220	0.0530	2	178	0.0112	0.0006
237110	0.0280	1	73	0.0137	0.0004
237120	0.0022	0	5	0.0000	0.0000
237310	0.6660	5	101	0.0495	0.0330
237990	0.0288	1	15	0.0667	0.0019
238110	0.0198	1	122	0.0082	0.0002
238120	0.0045	1	20	0.0500	0.0002
238140	0.0018	4	122	0.0328	0.0001
238190	0.0016	2	21	0.0952	0.0002
238210	0.0097	2	356	0.0056	0.0001
238220	0.0058	3	422	0.0071	0.0000
238320	0.0155	3	164	0.0183	0.0003
238390	0.0000	1	32	0.0313	0.0000
238910	0.0439	4	189	0.0212	0.0009
238990	0.0089	3	286	0.0105	0.0001
311514	0.0000	0	4	0.0000	0.0000
314994	0.0000	0	1	0.0000	0.0000
325212	0.0001	0	1	0.0000	0.0000
325314	0.0000	0	1	0.0000	0.0000
325510	0.0001	0	9	0.0000	0.0000
327120	0.0013			0.0000	0.0000
327215	0.0000	0	5	0.0000	0.0000
327310	0.0005			0.0000	0.0000
327320	0.0013	0	36	0.0000	0.0000
327331	0.0008	0	10	0.0000	0.0000
327332	0.0001	0	3	0.0000	0.0000
327390	0.0038	0	12	0.0000	0.0000
331210	0.0000	0	2	0.0000	0.0000
331511	0.0000	0	3	0.0000	0.0000

331513	0.0001	0	2	0.0000	0.0000
332312	0.0011	0	23	0.0000	0.0000
332313	0.0001	0	10	0.0000	0.0000
332322	0.0006	0	27	0.0000	0.0000
332618	0.0000	0	8	0.0000	0.0000
333120	0.0001	0	12	0.0000	0.0000
333131	0.0000	0	2	0.0000	0.0000
333997	0.0000	0	1	0.0000	0.0000
333999	0.0000	0	17	0.0000	0.0000
334290	0.0000			0.0000	0.0000
335999	0.0001	0	5	0.0000	0.0000
339950	0.0025	2	36	0.0556	0.0001
339999	0.0000	0	33	0.0000	0.0000
423310	0.0000	0	41	0.0000	0.0000
423320	0.0009	1	13	0.0769	0.0001
423390	0.0000	0	16	0.0000	0.0000
423440	0.0000	0	20	0.0000	0.0000
423510	0.0005	0	33	0.0000	0.0000
423610	0.0001	2	54	0.0370	0.0000
423720	0.0001	0	34	0.0000	0.0000
423810	0.0001	0	27	0.0000	0.0000
423990	0.0002	0	37	0.0000	0.0000
424690	0.0000	0	32	0.0000	0.0000
424910	0.0000	0	41	0.0000	0.0000
424950	0.0002	0	7	0.0000	0.0000
444110	0.0003	0	34	0.0000	0.0000
444130	0.0000	0	79	0.0000	0.0000
444190	0.0004	0	133	0.0000	0.0000
444220	0.0000	1	51	0.0196	0.0000
452990	0.0000	0	111	0.0000	0.0000
454111	0.0000	0	98	0.0000	0.0000
484110	0.0050	0	166	0.0000	0.0000
484121	0.0009	0	199	0.0000	0.0000
484210	0.0014	1	25	0.0400	0.0001
484220	0.0590	10	116	0.0862	0.0051
484230	0.0027	0	44	0.0000	0.0000
488490	0.0000	2	9	0.2222	0.0000
488510	0.0018	0	95	0.0000	0.0000
515210	0.0000	0	2	0.0000	0.0000
517210	0.0000	0	79	0.0000	0.0000
517911	0.0000	0	6	0.0000	0.0000
517919	0.0000	1	12	0.0833	0.0000

531190	0.0001	0	31	0.0000	0.0000
531311	0.0000	0	134	0.0000	0.0000
531312	0.0003	0	41	0.0000	0.0000
532120	0.0000	0	19	0.0000	0.0000
532299	0.0020	0	11	0.0000	0.0000
541310	0.0002	0	42	0.0000	0.0000
541320	0.0001	1	12	0.0833	0.0000
541330	0.0035	5	181	0.0276	0.0001
541350	0.0000	0	28	0.0000	0.0000
541370	0.0000	1	26	0.0385	0.0000
541380	0.0000	0	23	0.0000	0.0000
541430	0.0000	0	52	0.0000	0.0000
541511	0.0000	2	246	0.0081	0.0000
541512	0.0000	1	166	0.0060	0.0000
541519	0.0000	0	68	0.0000	0.0000
541611	0.0001	1	172	0.0058	0.0000
541613	0.0000	0	123	0.0000	0.0000
541614	0.0002	1	32	0.0313	0.0000
541618	0.0002	0	29	0.0000	0.0000
541620	0.0001	2	26	0.0769	0.0000
541690	0.0000	0	72	0.0000	0.0000
541712	0.0000	0	34	0.0000	0.0000
541720	0.0000	0	3	0.0000	0.0000
541810	0.0001	0	36	0.0000	0.0000
541850	0.0000	0	11	0.0000	0.0000
541910	0.0000	1	15	0.0667	0.0000
541990	0.0002	0	98	0.0000	0.0000
561499	0.0000	0	20	0.0000	0.0000
561720	0.0000	0	235	0.0000	0.0000
561730	0.0017	4	466	0.0086	0.0000
561990	0.0003	0	62	0.0000	0.0000
562910	0.0000	0	12	0.0000	0.0000
562920	0.0003	1	13	0.0769	0.0000
562991	0.0000	2	27	0.0741	0.0000
562998	0.0000	1	9	0.1111	0.0000
611710	0.0052	0	25	0.0000	0.0000
621111	0.0001	0	248	0.0000	0.0000
623220	0.0001	0	58	0.0000	0.0000
624120	0.0002	0	121	0.0000	0.0000
624310	0.0003	0	68	0.0000	0.0000
712110	0.0000	0	33	0.0000	0.0000
712120	0.0000	0	11	0.0000	0.0000

811310	0.0001	1	119	0.0084	0.0000
812930	0.0000	0	8	0.0000	0.0000
813410	0.0001	0	170	0.0000	0.0000
813910	0.0000	0	69	0.0000	0.0000
813920	0.0003	0	24	0.0000	0.0000
Total	1.0000	78	7830	1.00%	4.35%

Table B-4. Availability Analysis - Vendors List Method
PJM-1

NAICS	Weight	DBEs	Total Firms	Unweighted	Weighted
111140	0.00000				
111411	0.00018	0	1	0.0000	0.0000
111422	0.00008	0	1	0.0000	0.0000
111991	0.00000	0	2	0.0000	0.0000
212312	0.00009	0	1	0.0000	0.0000
212321	0.00226	8	30	0.2667	0.0006
213111	0.00000	0	1	0.0000	0.0000
236115	0.00217	4	55	0.0727	0.0002
236117	0.00011				
236210	0.00455	4	25	0.1600	0.0007
236220	0.05303	3	62	0.0484	0.0026
237110	0.02804	13	98	0.1327	0.0037
237120	0.00223	0	3	0.0000	0.0000
237310	0.66604	24	162	0.1481	0.0987
237990	0.02878	2	19	0.1053	0.0030
238110	0.01982	3	55	0.0545	0.0011
238120	0.00446	5	14	0.3571	0.0016
238140	0.00175	5	29	0.1724	0.0003
238190	0.00158	2	7	0.2857	0.0005
238210	0.00973	15	82	0.1829	0.0018
238220	0.00583	8	46	0.1739	0.0010
238320	0.01552	2	24	0.0833	0.0013
238390	0.00001	3	7	0.4286	0.0000
238910	0.04389	6	145	0.0414	0.0018
238990	0.00886	7	95	0.0737	0.0007
311514	0.00000				
314994	0.00002				
325212	0.00007				
325314	0.00000				
325510	0.00009	0	2	0.0000	0.0000
327120	0.00131	0	1	0.0000	0.0000
327215	0.00000				
327310	0.00055				
327320	0.00126	0	7	0.0000	0.0000
327331	0.00078	0	3	0.0000	0.0000
327332	0.00014				
327390	0.00376	0	4	0.0000	0.0000
331210	0.00001				
331511	0.00001				

331513	0.00011				
332312	0.00106	0	1	0.0000	0.0000
332313	0.00007	1	2	0.5000	0.0000
332322	0.00062	2	9	0.2222	0.0001
332618	0.00005	0	2	0.0000	0.0000
333120	0.00011	0	4	0.0000	0.0000
333131	0.00003				
333997	0.00001				
333999	0.00000	0	1	0.0000	0.0000
334290	0.00000	1	1	1.0000	0.0000
335999	0.00014	0	2	0.0000	0.0000
339950	0.00254	1	8	0.1250	0.0003
339999	0.00002	0	2	0.0000	0.0000
423310	0.00000	1	6	0.1667	0.0000
423320	0.00094	3	11	0.2727	0.0003
423390	0.00000	3	8	0.3750	0.0000
423440	0.00002	0	2	0.0000	0.0000
423510	0.00052	1	2	0.5000	0.0003
423610	0.00013	4	4	1.0000	0.0001
423720	0.00008				
423810	0.00009	0	4	0.0000	0.0000
423990	0.00015	0	3	0.0000	0.0000
424690	0.00002	0	2	0.0000	0.0000
424910	0.00000	1	6	0.1667	0.0000
424950	0.00018	1	1	1.0000	0.0002
444110	0.00029	0	6	0.0000	0.0000
444130	0.00000				
444190	0.00036	1	3	0.3333	0.0001
444220	0.00002	2	11	0.1818	0.0000
452990	0.00000				
454111	0.00001	0	1	0.0000	0.0000
484110	0.00499	6	269	0.0223	0.0001
484121	0.00090	0	30	0.0000	0.0000
484210	0.00142	1	2	0.5000	0.0007
484220	0.05897	32	66	0.4848	0.0286
484230	0.00271	0	3	0.0000	0.0000
488490	0.00002	3	7	0.4286	0.0000
488510	0.00183	3	8	0.3750	0.0007
515210	0.00000				
517210	0.00001				
517911	0.00001	1	1	1.0000	0.0000
517919	0.00000	0	1	0.0000	0.0000

531190	0.00007				
531311	0.00002				
531312	0.00033	0	1	0.0000	0.0000
532120	0.00000	1	1	1.0000	0.0000
532299	0.00197	0	5	0.0000	0.0000
541310	0.00019	11	18	0.6111	0.0001
541320	0.00011	3	32	0.0938	0.0000
541330	0.00354	25	69	0.3623	0.0013
541350	0.00002				
541370	0.00001	1	13	0.0769	0.0000
541380	0.00005	2	6	0.3333	0.0000
541430	0.00000	5	8	0.6250	0.0000
541511	0.00001	4	9	0.4444	0.0000
541512	0.00001	2	7	0.2857	0.0000
541519	0.00001	1	2	0.5000	0.0000
541611	0.00008	6	17	0.3529	0.0000
541613	0.00000	3	5	0.6000	0.0000
541614	0.00018	1	2	0.5000	0.0001
541618	0.00017	5	17	0.2941	0.0001
541620	0.00015	0	9	0.0000	0.0000
541690	0.00004	2	4	0.5000	0.0000
541712	0.00004	0	1	0.0000	0.0000
541720	0.00000	0	1	0.0000	0.0000
541810	0.00007				
541850	0.00000				
541910	0.00005	0	1	0.0000	0.0000
541990	0.00018	1	7	0.1429	0.0000
561499	0.00000	0	13	0.0000	0.0000
561720	0.00003	5	11	0.4545	0.0000
561730	0.00165	5	116	0.0431	0.0001
561990	0.00030	0	45	0.0000	0.0000
562910	0.00001	0	12	0.0000	0.0000
562920	0.00033	0	6	0.0000	0.0000
562991	0.00001	2	9	0.2222	0.0000
562998	0.00000				
611710	0.00518				
621111	0.00007	0	2	0.0000	0.0000
623220	0.00007				
624120	0.00016				
624310	0.00025				
712110	0.00000				
712120	0.00004				

811310	0.00008	0	4	0.0000	0.0000
812930	0.00000				
813410	0.00010	0	2	0.0000	0.0000
813910	0.00002	0	1	0.0000	0.0000
813920	0.00030				
Total	1.00	267	1926	13.86%	15.28%

PJM-2

NAICS	Weight	DBEs	Total Firms	Unweighted	Weighted
111140	0.00000				
111411	0.00018				
111422	0.00008				
111991	0.00000				
212312	0.00009	0	1	0.0000	0.0000
212321	0.00226	5	15	0.3333	0.0008
213111	0.00000				
236115	0.00217	2	29	0.0690	0.0001
236117	0.00011				
236210	0.00455	4	16	0.2500	0.0011
236220	0.05303	1	36	0.0278	0.0015
237110	0.02804	7	59	0.1186	0.0033
237120	0.00223	0	3	0.0000	0.0000
237310	0.66604	13	84	0.1548	0.1031
237990	0.02878	2	12	0.1667	0.0048
238110	0.01982	1	34	0.0294	0.0006
238120	0.00446	2	12	0.1667	0.0007
238140	0.00175	4	18	0.2222	0.0004
238190	0.00158	1	5	0.2000	0.0003
238210	0.00973	10	40	0.2500	0.0024
238220	0.00583	3	27	0.1111	0.0006
238320	0.01552	1	20	0.0500	0.0008
238390	0.00001	0	3	0.0000	0.0000
238910	0.04389	5	66	0.0758	0.0033
238990	0.00886	4	45	0.0889	0.0008
311514	0.00000				
314994	0.00002				
325212	0.00007				
325314	0.00000				
325510	0.00009	0	2	0.0000	0.0000
327120	0.00131	0	1	0.0000	0.0000
327215	0.00000				
327310	0.00055				
327320	0.00126	0	5	0.0000	0.0000
327331	0.00078	0	3	0.0000	0.0000
327332	0.00014				
327390	0.00376	0	3	0.0000	0.0000
331210	0.00001				
331511	0.00001				
331513	0.00011				

332312	0.00106	0	1	0.0000	0.0000
332313	0.00007	1	1	1.0000	0.0001
332322	0.00062	2	5	0.4000	0.0002
332618	0.00005	0	2	0.0000	0.0000
333120	0.00011	0	2	0.0000	0.0000
333131	0.00003				
333997	0.00001				
333999	0.00000	0	1	0.0000	0.0000
334290	0.00000	1	1	1.0000	0.0000
335999	0.00014	0	1	0.0000	0.0000
339950	0.00254	1	6	0.1667	0.0004
339999	0.00002				
423310	0.00000	0	4	0.0000	0.0000
423320	0.00094	2	7	0.2857	0.0003
423390	0.00000	1	5	0.2000	0.0000
423440	0.00002	0	1	0.0000	0.0000
423510	0.00052	1	2	0.5000	0.0003
423610	0.00013	3	3	1.0000	0.0001
423720	0.00008				
423810	0.00009	0	1	0.0000	0.0000
423990	0.00015	0	3	0.0000	0.0000
424690	0.00002	0	2	0.0000	0.0000
424910	0.00000	0	2	0.0000	0.0000
424950	0.00018	1	1	1.0000	0.0002
444110	0.00029	0	5	0.0000	0.0000
444130	0.00000				
444190	0.00036	0	1	0.0000	0.0000
444220	0.00002	0	5	0.0000	0.0000
452990	0.00000				
454111	0.00001	0	1	0.0000	0.0000
484110	0.00499	3	141	0.0213	0.0001
484121	0.00090	0	15	0.0000	0.0000
484210	0.00142	1	1	1.0000	0.0014
484220	0.05897	20	38	0.5263	0.0310
484230	0.00271	0	1	0.0000	0.0000
488490	0.00002	1	2	0.5000	0.0000
488510	0.00183	2	4	0.5000	0.0009
515210	0.00000				
517210	0.00001				
517911	0.00001				
517919	0.00000	0	1	0.0000	0.0000
531190	0.00007				

531311	0.00002				
531312	0.00033	0	1	0.0000	0.0000
532120	0.00000	1	1	1.0000	0.0000
532299	0.00197	0	3	0.0000	0.0000
541310	0.00019	10	14	0.7143	0.0001
541320	0.00011	1	19	0.0526	0.0000
541330	0.00354	14	47	0.2979	0.0011
541350	0.00002				
541370	0.00001	0	8	0.0000	0.0000
541380	0.00005	2	3	0.6667	0.0000
541430	0.00000	2	4	0.5000	0.0000
541511	0.00001	3	7	0.4286	0.0000
541512	0.00001	2	6	0.3333	0.0000
541519	0.00001	1	2	0.5000	0.0000
541611	0.00008	4	11	0.3636	0.0000
541613	0.00000	3	5	0.6000	0.0000
541614	0.00018	1	1	1.0000	0.0002
541618	0.00017	4	7	0.5714	0.0001
541620	0.00015	0	5	0.0000	0.0000
541690	0.00004	3	3	1.0000	0.0000
541712	0.00004				
541720	0.00000	0	1	0.0000	0.0000
541810	0.00007				
541850	0.00000				
541910	0.00005				
541990	0.00018	1	5	0.2000	0.0000
561499	0.00000	0	8	0.0000	0.0000
561720	0.00003	5	7	0.7143	0.0000
561730	0.00165	4	63	0.0635	0.0001
561990	0.00030	0	22	0.0000	0.0000
562910	0.00001	0	9	0.0000	0.0000
562920	0.00033	0	4	0.0000	0.0000
562991	0.00001	2	5	0.4000	0.0000
562998	0.00000				
611710	0.00518				
621111	0.00007	0	2	0.0000	0.0000
623220	0.00007				
624120	0.00016				
624310	0.00025				
712110	0.00000				
712120	0.00004				
811310	0.00008	0	2	0.0000	0.0000

812930	0.00000				
813410	0.00010				
813910	0.00002	0	1	0.0000	0.0000
813920	0.00030				
Total	1.00000	168	1081	15.54%	16.15%

VJM-1

NAICS	Weight	DBEs	Total Firms	Unweighted	Weighted
111140	0.00000				
111411	0.00018				
111422	0.00008				
111991	0.00000				
212312	0.00009	0	1	0.0000	0.0000
212321	0.00226	3	6	0.5000	0.0011
213111	0.00000				
236115	0.00217	0	8	0.0000	0.0000
236117	0.00011				
236210	0.00455	0	4	0.0000	0.0000
236220	0.05303	0	16	0.0000	0.0000
237110	0.02804	1	19	0.0526	0.0015
237120	0.00223	0	3	0.0000	0.0000
237310	0.66604	2	59	0.0339	0.0226
237990	0.02878	1	6	0.1667	0.0048
238110	0.01982	0	13	0.0000	0.0000
238120	0.00446	1	7	0.1429	0.0006
238140	0.00175	3	6	0.5000	0.0009
238190	0.00158	0	2	0.0000	0.0000
238210	0.00973	1	19	0.0526	0.0005
238220	0.00583	0	7	0.0000	0.0000
238320	0.01552	0	3	0.0000	0.0000
238390	0.00001				
238910	0.04389	0	38	0.0000	0.0000
238990	0.00886	3	16	0.1875	0.0017
311514	0.00000				
314994	0.00002				
325212	0.00007				
325314	0.00000				
325510	0.00009				
327120	0.00131				
327215	0.00000				
327310	0.00055				
327320	0.00126	0	3	0.0000	0.0000
327331	0.00078	0	2	0.0000	0.0000
327332	0.00014				
327390	0.00376				
331210	0.00001				
331511	0.00001				

331513	0.00011				
332312	0.00106				
332313	0.00007				
332322	0.00062	1	2	0.5000	0.0003
332618	0.00005				
333120	0.00011				
333131	0.00003				
333997	0.00001				
333999	0.00000				
334290	0.00000				
335999	0.00014	0	1	0.0000	0.0000
339950	0.00254	1	2	0.5000	0.0013
339999	0.00002				
423310	0.00000	0	1	0.0000	0.0000
423320	0.00094	0	1	0.0000	0.0000
423390	0.00000	0	1	0.0000	0.0000
423440	0.00002				
423510	0.00052				
423610	0.00013	1	1	1.0000	0.0001
423720	0.00008				
423810	0.00009				
423990	0.00015	0	2	0.0000	0.0000
424690	0.00002	0	1	0.0000	0.0000
424910	0.00000	0	1	0.0000	0.0000
424950	0.00018				
444110	0.00029	0	4	0.0000	0.0000
444130	0.00000				
444190	0.00036				
444220	0.00002	0	2	0.0000	0.0000
452990	0.00000				
454111	0.00001				
484110	0.00499	0	30	0.0000	0.0000
484121	0.00090	0	1	0.0000	0.0000
484210	0.00142	1	1	1.0000	0.0014
484220	0.05897	6	9	0.6667	0.0393
484230	0.00271	0	1	0.0000	0.0000
488490	0.00002	1	2	0.5000	0.0000
488510	0.00183				
515210	0.00000				
517210	0.00001				
517911	0.00001				
517919	0.00000				

531190	0.00007				
531311	0.00002				
531312	0.00033	0	1	0.0000	0.0000
532120	0.00000				
532299	0.00197	0	2	0.0000	0.0000
541310	0.00019				
541320	0.00011	0	6	0.0000	0.0000
541330	0.00354	3	7	0.4286	0.0015
541350	0.00002				
541370	0.00001	0	2	0.0000	0.0000
541380	0.00005				
541430	0.00000				
541511	0.00001	1	1	1.0000	0.0000
541512	0.00001	0	1	0.0000	0.0000
541519	0.00001				
541611	0.00008				
541613	0.00000	0	1	0.0000	0.0000
541614	0.00018				
541618	0.00017	0	1	0.0000	0.0000
541620	0.00015				
541690	0.00004				
541712	0.00004				
541720	0.00000				
541810	0.00007				
541850	0.00000				
541910	0.00005				
541990	0.00018	0	1	0.0000	0.0000
561499	0.00000	0	1	0.0000	0.0000
561720	0.00003				
561730	0.00165	0	21	0.0000	0.0000
561990	0.00030	0	5	0.0000	0.0000
562910	0.00001	0	2	0.0000	0.0000
562920	0.00033	0	2	0.0000	0.0000
562991	0.00001	1	1	1.0000	0.0000
562998	0.00000				
611710	0.00518				
621111	0.00007				
623220	0.00007				
624120	0.00016				
624310	0.00025				
712110	0.00000				
712120	0.00004				

811310	0.00008	0	1	0.0000	0.0000
812930	0.00000				
813410	0.00010				
813910	0.00002	0	1	0.0000	0.0000
813920	0.00030				
Total	1.00137	31	358	8.66%	7.77%

Table B-5. Availability Analysis - Dun & Bradstreet Method
PJM-1

NAICS	Weights	Minority/Women Firms	Total	Unweighted	Weighted
111140	0.00000	15	409	0.0367	0.0000
111411	0.00018	0	6	0.0000	0.0000
111422	0.00008	30	167	0.1796	0.0000
111991	0.00000	1	177	0.0056	0.0000
212312	0.00009	0	5	0.0000	0.0000
212321	0.00226	8	138	0.0580	0.0001
213111	0.00000	1	17	0.0588	0.0000
236115	0.00217	200	9961	0.0201	0.0000
236117	0.00011	4	143	0.0280	0.0000
236210	0.00455	9	124	0.0726	0.0003
236220	0.05303	121	1145	0.1057	0.0056
237110	0.02804	32	448	0.0714	0.0020
237120	0.00223	4	38	0.1053	0.0002
237310	0.66604	38	533	0.0713	0.0475
237990	0.02878	9	176	0.0511	0.0015
238110	0.01982	43	1067	0.0403	0.0008
238120	0.00446	10	49	0.2041	0.0009
238140	0.00175	33	774	0.0426	0.0001
238190	0.00158	7	22	0.3182	0.0005
238210	0.00973	153	2497	0.0613	0.0006
238220	0.00583	142	3585	0.0396	0.0002
238320	0.01552	109	2495	0.0437	0.0007
238390	0.00001	6	266	0.0226	0.0000
238910	0.04389	83	1306	0.0636	0.0028
238990	0.00886	142	2587	0.0549	0.0005
311514	0.00000	1	32	0.0313	0.0000
314994	0.00002	1	6	0.1667	0.0000
325212	0.00007	1	2	0.5000	0.0000
325314	0.00000	0	21	0.0000	0.0000
325510	0.00009	5	52	0.0962	0.0000
327120	0.00131	4	22	0.1818	0.0002
327215	0.00000	7	58	0.1207	0.0000
327310	0.00055	0	7	0.0000	0.0000
327320	0.00126	1	123	0.0081	0.0000
327331	0.00078	0	26	0.0000	0.0000
327332	0.00014	0	5	0.0000	0.0000
327390	0.00376	6	95	0.0632	0.0002

331210	0.00001	0	8	0.0000	0.0000
331511	0.00001	1	20	0.0500	0.0000
331513	0.00011	0	10	0.0000	0.0000
332312	0.00106	18	166	0.1084	0.0001
332313	0.00007	2	46	0.0435	0.0000
332322	0.00062	12	156	0.0769	0.0000
332618	0.00005	6	51	0.1176	0.0000
333120	0.00011	10	117	0.0855	0.0000
333131	0.00003	0	9	0.0000	0.0000
333997	0.00001	1	14	0.0714	0.0000
333999	0.00000	10	172	0.0581	0.0000
334290	0.00000	3	24	0.1250	0.0000
335999	0.00014	10	132	0.0758	0.0000
339950	0.00254	61	464	0.1315	0.0003
339999	0.00002	40	682	0.0587	0.0000
423310	0.00000	18	452	0.0398	0.0000
423320	0.00094	10	247	0.0405	0.0000
423390	0.00000	12	72	0.1667	0.0000
423440	0.00002	23	372	0.0618	0.0000
423510	0.00052	13	232	0.0560	0.0000
423610	0.00013	32	367	0.0872	0.0000
423720	0.00008	17	229	0.0742	0.0000
423810	0.00009	7	198	0.0354	0.0000
423990	0.00015	65	894	0.0727	0.0000
424690	0.00002	29	213	0.1362	0.0000
424910	0.00000	17	661	0.0257	0.0000
424950	0.00018	3	80	0.0375	0.0000
444110	0.00029	29	906	0.0320	0.0000
444130	0.00000	44	728	0.0604	0.0000
444190	0.00036	30	491	0.0611	0.0000
444220	0.00002	29	350	0.0829	0.0000
452990	0.00000	37	521	0.0710	0.0000
454111	0.00001	16	83	0.1928	0.0000
484110	0.00499	132	3842	0.0344	0.0002
484121	0.00090	54	1039	0.0520	0.0000
484210	0.00142	7	122	0.0574	0.0001
484220	0.05897	28	258	0.1085	0.0064
484230	0.00271	12	113	0.1062	0.0003
488490	0.00002	12	219	0.0548	0.0000
488510	0.00183	71	572	0.1241	0.0002
515210	0.00000	3	129	0.0233	0.0000
517210	0.00001	10	362	0.0276	0.0000

517911	0.00001	14	333	0.0420	0.0000
517919	0.00000	46	982	0.0468	0.0000
531190	0.00007	46	740	0.0622	0.0000
531311	0.00002	6	96	0.0625	0.0000
531312	0.00033	92	4739	0.0194	0.0000
532120	0.00000	13	312	0.0417	0.0000
532299	0.00197	27	230	0.1174	0.0002
541310	0.00019	64	694	0.0922	0.0000
541320	0.00011	64	1462	0.0438	0.0000
541330	0.00354	121	1582	0.0765	0.0003
541350	0.00002	6	166	0.0361	0.0000
541370	0.00001	15	179	0.0838	0.0000
541380	0.00005	22	185	0.1189	0.0000
541430	0.00000	196	888	0.2207	0.0000
541511	0.00001	159	1722	0.0923	0.0000
541512	0.00001	224	1660	0.1349	0.0000
541519	0.00001	16	74	0.2162	0.0000
541611	0.00008	431	3841	0.1122	0.0000
541613	0.00000	136	1354	0.1004	0.0000
541614	0.00018	6	52	0.1154	0.0000
541618	0.00017	500	8441	0.0592	0.0000
541620	0.00015	46	315	0.1460	0.0000
541690	0.00004	99	808	0.1225	0.0000
541712	0.00004	57	404	0.1411	0.0000
541720	0.00000	30	243	0.1235	0.0000
541810	0.00007	70	514	0.1362	0.0000
541850	0.00000	6	62	0.0968	0.0000
541910	0.00005	51	320	0.1594	0.0000
541990	0.00018	338	5280	0.0640	0.0000
561499	0.00000	177	4455	0.0397	0.0000
561720	0.00003	209	1799	0.1162	0.0000
561730	0.00165	123	3171	0.0388	0.0001
561990	0.00030	581	26238	0.0221	0.0000
562910	0.00001	11	52	0.2115	0.0000
562920	0.00033	10	283	0.0353	0.0000
562991	0.00001	28	344	0.0814	0.0000
562998	0.00000	4	29	0.1379	0.0000
611710	0.00518	46	184	0.2500	0.0013
621111	0.00007	143	4182	0.0342	0.0000
623220	0.00007	10	292	0.0342	0.0000
624120	0.00016	1	565	0.0018	0.0000
624310	0.00025	26	349	0.0745	0.0000

712110	0.00000	0	377	0.0000	0.0000
712120	0.00004	0	66	0.0000	0.0000
811310	0.00008	33	1142	0.0289	0.0000
812930	0.00000	2	75	0.0267	0.0000
813410	0.00010	0	3408	0.0000	0.0000
813910	0.00002	2	782	0.0026	0.0000
813920	0.00030	0	412	0.0000	0.0000
Total	1.00	6,467	130,290	4.96%	7.49%

PJM-2

NAICS	Weights	Minority/Women Firms	Total	Unweighted	Weighted
111140	0.00000	2	49	0.0408	0.0000
111411	0.00018	0	4	0.0000	0.0000
111422	0.00008	16	96	0.1667	0.0000
111991	0.00000	0	8	0.0000	0.0000
212312	0.00009	0	4	0.0000	0.0000
212321	0.00226	7	87	0.0805	0.0002
213111	0.00000	1	8	0.1250	0.0000
236115	0.00217	184	7395	0.0249	0.0001
236117	0.00011	6	124	0.0484	0.0000
236210	0.00455	8	89	0.0899	0.0004
236220	0.05303	125	985	0.1269	0.0067
237110	0.02804	25	323	0.0774	0.0022
237120	0.00223	4	22	0.1818	0.0004
237310	0.66604	31	407	0.0762	0.0507
237990	0.02878	9	118	0.0763	0.0022
238110	0.01982	39	777	0.0502	0.0010
238120	0.00446	8	42	0.1905	0.0008
238140	0.00175	27	595	0.0454	0.0001
238190	0.00158	4	16	0.2500	0.0004
238210	0.00973	137	1846	0.0742	0.0007
238220	0.00583	127	2756	0.0461	0.0003
238320	0.01552	97	2203	0.0440	0.0007
238390	0.00001	7	227	0.0308	0.0000
238910	0.04389	42	781	0.0538	0.0024
238990	0.00886	141	2149	0.0656	0.0006
311514	0.00000	1	19	0.0526	0.0000
314994	0.00002	1	5	0.2000	0.0000
325212	0.00007	1	3	0.3333	0.0000
325314	0.00000	0	12	0.0000	0.0000
325510	0.00009	4	47	0.0851	0.0000
327120	0.00131	3	16	0.1875	0.0002
327215	0.00000	6	57	0.1053	0.0000
327310	0.00055	0	9	0.0000	0.0000
327320	0.00126	3	75	0.0400	0.0001
327331	0.00078	0	21	0.0000	0.0000
327332	0.00014	0	4	0.0000	0.0000
327390	0.00376	8	75	0.1067	0.0004

331210	0.00001	1	7	0.1429	0.0000
331511	0.00001	1	18	0.0556	0.0000
331513	0.00011	0	11	0.0000	0.0000
332312	0.00106	12	133	0.0902	0.0001
332313	0.00007	2	42	0.0476	0.0000
332322	0.00062	9	119	0.0756	0.0000
332618	0.00005	6	44	0.1364	0.0000
333120	0.00011	5	81	0.0617	0.0000
333131	0.00003	0	7	0.0000	0.0000
333997	0.00001	0	12	0.0000	0.0000
333999	0.00000	10	140	0.0714	0.0000
334290	0.00000	2	24	0.0833	0.0000
335999	0.00014	10	127	0.0787	0.0000
339950	0.00254	51	391	0.1304	0.0003
339999	0.00002	32	564	0.0567	0.0000
423310	0.00000	15	411	0.0365	0.0000
423320	0.00094	9	194	0.0464	0.0000
423390	0.00000	10	60	0.1667	0.0000
423440	0.00002	27	347	0.0778	0.0000
423510	0.00052	15	200	0.0750	0.0000
423610	0.00013	33	426	0.0775	0.0000
423720	0.00008	14	214	0.0654	0.0000
423810	0.00009	9	181	0.0497	0.0000
423990	0.00015	46	791	0.0582	0.0000
424690	0.00002	28	219	0.1279	0.0000
424910	0.00000	10	275	0.0364	0.0000
424950	0.00018	2	73	0.0274	0.0000
444110	0.00029	24	653	0.0368	0.0000
444130	0.00000	24	439	0.0547	0.0000
444190	0.00036	27	429	0.0629	0.0000
444220	0.00002	15	220	0.0682	0.0000
452990	0.00000	29	397	0.0730	0.0000
454111	0.00001	16	73	0.2192	0.0000
484110	0.00499	111	2356	0.0471	0.0002
484121	0.00090	41	625	0.0656	0.0001
484210	0.00142	10	118	0.0847	0.0001
484220	0.05897	26	161	0.1615	0.0095
484230	0.00271	9	69	0.1304	0.0004
488490	0.00002	11	184	0.0598	0.0000
488510	0.00183	70	520	0.1346	0.0002
515210	0.00000	3	105	0.0286	0.0000
517210	0.00001	10	350	0.0286	0.0000

517911	0.00001	14	279	0.0502	0.0000
517919	0.00000	43	928	0.0463	0.0000
531190	0.00007	23	464	0.0496	0.0000
531311	0.00002	4	90	0.0444	0.0000
531312	0.00033	81	4031	0.0201	0.0000
532120	0.00000	8	256	0.0313	0.0000
532299	0.00197	24	206	0.1165	0.0002
541310	0.00019	75	752	0.0997	0.0000
541320	0.00011	60	1280	0.0469	0.0000
541330	0.00354	136	1655	0.0822	0.0003
541350	0.00002	8	160	0.0500	0.0000
541370	0.00001	13	128	0.1016	0.0000
541380	0.00005	21	165	0.1273	0.0000
541430	0.00000	175	830	0.2108	0.0000
541511	0.00001	173	1795	0.0964	0.0000
541512	0.00001	244	1692	0.1442	0.0000
541519	0.00001	19	85	0.2235	0.0000
541611	0.00008	438	3852	0.1137	0.0000
541613	0.00000	148	1358	0.1090	0.0000
541614	0.00018	6	47	0.1277	0.0000
541618	0.00017	489	7821	0.0625	0.0000
541620	0.00015	47	286	0.1643	0.0000
541690	0.00004	97	766	0.1266	0.0000
541712	0.00004	59	375	0.1573	0.0000
541720	0.00000	26	248	0.1048	0.0000
541810	0.00007	94	599	0.1569	0.0000
541850	0.00000	5	68	0.0735	0.0000
541910	0.00005	59	331	0.1782	0.0000
541990	0.00018	296	4603	0.0643	0.0000
561499	0.00000	169	3954	0.0427	0.0000
561720	0.00003	219	1727	0.1268	0.0000
561730	0.00165	113	2668	0.0424	0.0001
561990	0.00030	527	20338	0.0259	0.0000
562910	0.00001	12	50	0.2400	0.0000
562920	0.00033	9	227	0.0396	0.0000
562991	0.00001	19	209	0.0909	0.0000
562998	0.00000	2	73	0.0274	0.0000
611710	0.00518	42	169	0.2485	0.0013
621111	0.00007	185	4888	0.0378	0.0000
623220	0.00007	7	209	0.0335	0.0000
624120	0.00016	0	430	0.0000	0.0000
624310	0.00025	27	287	0.0941	0.0000

712110	0.00000	0	314	0.0000	0.0000
712120	0.00004	0	46	0.0000	0.0000
811310	0.00008	23	674	0.0341	0.0000
812930	0.00000	2	82	0.0244	0.0000
813410	0.00010	0	3213	0.0000	0.0000
813910	0.00002	2	636	0.0031	0.0000
813920	0.00030	0	457	0.0000	0.0000
Total	1.00	6,102	109,065	5.59%	8.39%

VJM-1

NAICS	Weights	Minority/Women Firms	Total	Unweighted	Weighted
111140	0.00000	0	34	0.0000	0.0000
111411	0.00018	0	2	0.0000	0.0000
111422	0.00008	5	28	0.1786	0.0000
111991	0.00000	0	1	0.0000	0.0000
212312	0.00009	0	1	0.0000	0.0000
212321	0.00226	0	30	0.0000	0.0000
213111	0.00000	0	1	0.0000	0.0000
236115	0.00217	35	1892	0.0185	0.0000
236117	0.00011	1	33	0.0303	0.0000
236210	0.00455	4	28	0.1429	0.0007
236220	0.05303	33	267	0.1236	0.0066
237110	0.02804	6	118	0.0508	0.0014
237120	0.00223	1	10	0.1000	0.0002
237310	0.66604	7	159	0.0440	0.0293
237990	0.02878	1	24	0.0417	0.0012
238110	0.01982	12	233	0.0515	0.0010
238120	0.00446	5	11	0.4545	0.0020
238140	0.00175	7	169	0.0414	0.0001
238190	0.00158	3	9	0.3333	0.0005
238210	0.00973	36	529	0.0681	0.0007
238220	0.00583	25	816	0.0306	0.0002
238320	0.01552	25	516	0.0484	0.0008
238390	0.00001	0	56	0.0000	0.0000
238910	0.04389	16	303	0.0528	0.0023
238990	0.00886	41	577	0.0711	0.0006
311514	0.00000	0	4	0.0000	0.0000
314994	0.00002				
325212	0.00007				
325314	0.00000	0	4	0.0000	0.0000
325510	0.00009	0	11	0.0000	0.0000
327120	0.00131	1	3	0.3333	0.0004
327215	0.00000	1	14	0.0714	0.0000
327310	0.00055	0	1	0.0000	0.0000
327320	0.00126	0	31	0.0000	0.0000
327331	0.00078	0	8	0.0000	0.0000
327332	0.00014				
327390	0.00376	1	31	0.0323	0.0001

331210	0.00001	0	4	0.0000	0.0000
331511	0.00001	0	7	0.0000	0.0000
331513	0.00011	0	2	0.0000	0.0000
332312	0.00106	5	49	0.1020	0.0001
332313	0.00007	0	8	0.0000	0.0000
332322	0.00062	5	52	0.0962	0.0001
332618	0.00005	1	19	0.0526	0.0000
333120	0.00011	1	21	0.0476	0.0000
333131	0.00003	0	2	0.0000	0.0000
333997	0.00001	0	3	0.0000	0.0000
333999	0.00000	3	45	0.0667	0.0000
334290	0.00000	0	5	0.0000	0.0000
335999	0.00014	2	33	0.0606	0.0000
339950	0.00254	15	129	0.1163	0.0003
339999	0.00002	4	126	0.0317	0.0000
423310	0.00000	3	94	0.0319	0.0000
423320	0.00094	3	61	0.0492	0.0000
423390	0.00000	1	12	0.0833	0.0000
423440	0.00002	4	84	0.0476	0.0000
423510	0.00052	3	52	0.0577	0.0000
423610	0.00013	6	92	0.0652	0.0000
423720	0.00008	7	71	0.0986	0.0000
423810	0.00009	1	49	0.0204	0.0000
423990	0.00015	12	202	0.0594	0.0000
424690	0.00002	7	50	0.1400	0.0000
424910	0.00000	2	95	0.0211	0.0000
424950	0.00018	2	16	0.1250	0.0000
444110	0.00029	8	199	0.0402	0.0000
444130	0.00000	9	113	0.0796	0.0000
444190	0.00036	6	130	0.0462	0.0000
444220	0.00002	3	70	0.0429	0.0000
452990	0.00000	7	105	0.0667	0.0000
454111	0.00001	3	19	0.1579	0.0000
484110	0.00499	33	674	0.0490	0.0002
484121	0.00090	14	201	0.0697	0.0001
484210	0.00142	0	28	0.0000	0.0000
484220	0.05897	7	39	0.1795	0.0106
484230	0.00271	3	30	0.1000	0.0003
488490	0.00002	2	46	0.0435	0.0000
488510	0.00183	20	166	0.1205	0.0002
515210	0.00000	1	15	0.0667	0.0000
517210	0.00001	3	96	0.0313	0.0000

517911	0.00001	4	76	0.0526	0.0000
517919	0.00000	8	151	0.0530	0.0000
531190	0.00007	13	146	0.0890	0.0000
531311	0.00002	0	15	0.0000	0.0000
531312	0.00033	18	943	0.0191	0.0000
532120	0.00000	4	84	0.0476	0.0000
532299	0.00197	6	55	0.1091	0.0002
541310	0.00019	2	91	0.0220	0.0000
541320	0.00011	12	273	0.0440	0.0000
541330	0.00354	29	301	0.0963	0.0003
541350	0.00002	3	38	0.0789	0.0000
541370	0.00001	4	48	0.0833	0.0000
541380	0.00005	4	31	0.1290	0.0000
541430	0.00000	29	135	0.2148	0.0000
541511	0.00001	16	255	0.0627	0.0000
541512	0.00001	38	269	0.1413	0.0000
541519	0.00001	2	15	0.1333	0.0000
541611	0.00008	52	578	0.0900	0.0000
541613	0.00000	10	190	0.0526	0.0000
541614	0.00018	1	14	0.0714	0.0000
541618	0.00017	76	1385	0.0549	0.0000
541620	0.00015	7	69	0.1014	0.0000
541690	0.00004	13	140	0.0929	0.0000
541712	0.00004	3	63	0.0476	0.0000
541720	0.00000	5	35	0.1429	0.0000
541810	0.00007	12	79	0.1519	0.0000
541850	0.00000	0	8	0.0000	0.0000
541910	0.00005	5	53	0.0943	0.0000
541990	0.00018	66	876	0.0753	0.0000
561499	0.00000	39	866	0.0450	0.0000
561720	0.00003	40	354	0.1130	0.0000
561730	0.00165	18	736	0.0245	0.0000
561990	0.00030	107	4455	0.0240	0.0000
562910	0.00001	2	12	0.1667	0.0000
562920	0.00033	1	67	0.0149	0.0000
562991	0.00001	7	72	0.0972	0.0000
562998	0.00000	1	5	0.2000	0.0000
611710	0.00518	5	30	0.1667	0.0009
621111	0.00007	30	798	0.0376	0.0000
623220	0.00007	3	70	0.0429	0.0000
624120	0.00016	0	108	0.0000	0.0000
624310	0.00025	4	74	0.0541	0.0000

712110	0.00000	0	50	0.0000	0.0000
712120	0.00004	0	7	0.0000	0.0000
811310	0.00008	7	235	0.0298	0.0000
812930	0.00000	0	7	0.0000	0.0000
813410	0.00010	0	561	0.0000	0.0000
813910	0.00002	0	129	0.0000	0.0000
813920	0.00030	0	53	0.0000	0.0000
Total	1.00	1,178	24,373	4.83%	6.18%

APPENDIX C: DISCRIMINATION ANALYSIS

Table C-1. Description of the Variables in the Residual Difference Decomposition

Variable	Description
DBE	Dummy variable to indicate DBE status, graduated DBEs are excluded
DBE_Star	Dummy variable to indicate DBE status, graduated DBEs are treated as non-DBE
FFY2015	Dummy variable for federal fiscal year 2015
FFY2016	Dummy variable for federal fiscal year 2016
FFY2017	Dummy variable for federal fiscal year 2017
LowRisk	Dummy variable for low credit (from D&B)
MediumRisk	Dummy variable for medium credit (from D&B)
HighRisk	Dummy variable for high credit (from D&B)
Missing_credit_risk	Dummy for missing credit risk
Minnesota	Dummy variable for location in Minnesota
Firm_year_of_found	Continuous variable for found year of firm
Missing_firm_year_of_found	Dummy for missing found year of firm
industry_const_building	Dummy: NAICS defined industry for construction building (Two-digit NAICS:23)
industry_const_Trade	Dummy: NAICS defined industry for wholesale and retail trade (Two-digit NAICS:42, 44, and 45)
industry_professional	Dummy: NAICS defined industry for professional, scientific and technical services(Two-digit NAICS:54)
Prime_sub	Dummy variable to indicate a firm was awarded both prime and sub contracts
More_than_onecon	Dummy variable to indicate a firm was awarded more than one contracts

Source: MnDOT FHWA contracts: Oct. 1, 2014 - Sep. 30, 2017

Table C-2. Summary Statistics for Prime Contracts

	Mean	Std. Dev.	Min	Max	N
AwardAmount	524,055.10	4,133,786	62	239,029,840	7,594
ln_AwardAmount	10.476	2.346	4.127	19.292	7,594
DBE	0.183	0.386	0	1	7,435
DBE_Star	0.179	0.383	0	1	7,594
FFY2015	0.304	0.460	0	1	7,594
FFY2016	0.301	0.459	0	1	7,594
FFY2017	0.395	0.489	0	1	7,594
LowRisk	0.750	0.433	0	1	7,594
MediumRisk	0.041	0.197	0	1	7,594
HighRisk	0.106	0.308	0	1	7,594
Missing_credit_risk	0.103	0.304	0	1	7,594
Minnesota	0.898	0.302	0	1	7,594
Firm_year_of_found	1,991.56	21.680	1,791	2,017	6,639
Missing_firm_year_of_found	0.126	0.332	0	1	7,594
industry_const_building	0.510	0.500	0	1	7,594
industry_const_Trade	0.055	0.229	0	1	7,594
industry_professional	0.038	0.192	0	1	7,594
Prime_sub	0.196	0.397	0	1	7,594
More_than_onecon	0.930	0.256	0	1	7,594

Source: MnDOT FHWA contracts: Oct. 1, 2014 - Sep. 30, 2017

Table C-3. Discrimination Analysis-Residual Difference Decomposition: Natural Log of Award Amount, by DBE

	Model (1)		Model (2)		Model (3)		Model (4)	
	explained	unexplained	explained	unexplained	explained	unexplained	explained	unexplained
DBE	0.2482***	0.1073*	0.2575***	0.0980	0.2556***	0.0998*	0.2702***	0.0852
	(0.0319)	(0.0611)	(0.0322)	(0.0609)	(0.0295)	(0.0588)	(0.0298)	(0.0586)
year_2015	-0.0039	-0.0550	-0.0038	-0.0572	-0.0038	-0.0389	-0.0037	-0.0417
	(0.0092)	(0.0447)	(0.0091)	(0.0446)	(0.0090)	(0.0443)	(0.0089)	(0.0441)
year_2016	-0.0004	-0.0280	-0.0004	-0.0349	-0.0004	-0.0185	-0.0004	-0.0267
	(0.0056)	(0.0449)	(0.0056)	(0.0448)	(0.0058)	(0.0445)	(0.0057)	(0.0444)
lowrisk	0.0186***	-0.8668***	0.0186***	-0.8756***	0.0221***	-0.7731***	0.0222***	-0.7785***
	(0.0062)	(0.1704)	(0.0062)	(0.1671)	(0.0063)	(0.1679)	(0.0063)	(0.1643)
mrisk	-0.0271***	-0.0341***	-0.0266***	-0.0339***	-0.0441***	-0.0361***	-0.0438***	-0.0358***
	(0.0068)	(0.0088)	(0.0067)	(0.0088)	(0.0078)	(0.0095)	(0.0078)	(0.0096)
riskmiss	-0.0127***	-0.0046**	-0.0128***	-0.0038***	-0.0121***	-0.0045**	-0.0122***	-0.0036**
	(0.0038)	(0.0019)	(0.0038)	(0.0013)	(0.0035)	(0.0021)	(0.0035)	(0.0014)
mn	0.0084	0.2330	0.0069	0.1812	0.0178***	0.1705	0.0157**	0.1239
	(0.0062)	(0.2725)	(0.0061)	(0.2737)	(0.0063)	(0.2724)	(0.0062)	(0.2738)
yearfound	0.1435***	-67.8742***	0.1424***	-68.1515***	0.1180***	-47.5288***	0.1158***	-46.9053***
	(0.0150)	(9.3828)	(0.0150)	(9.4137)	(0.0143)	(9.7090)	(0.0143)	(9.7565)
construction	0.1921***	0.4101***	0.1929***	0.4060***	0.1676***	0.1223	0.1683***	0.1091
	(0.0252)	(0.0688)	(0.0252)	(0.0684)	(0.0222)	(0.0769)	(0.0223)	(0.0762)
service	0.0024	-0.0399***	0.0024	-0.0341**	0.0023	-0.0584***	0.0022	-0.0529***
	(0.0057)	(0.0140)	(0.0056)	(0.0142)	(0.0053)	(0.0149)	(0.0051)	(0.0150)
trade	-0.0729***	-0.0266*	-0.0726***	-0.0267*	-0.0805***	-0.0417***	-0.0802***	-0.0431***
	(0.0118)	(0.0138)	(0.0118)	(0.0138)	(0.0126)	(0.0150)	(0.0126)	(0.0150)
morethanonecon			0.0105**	0.7025**			0.0163***	0.6619**
			(0.0044)	(0.2885)			(0.0048)	(0.2958)
Prime_sub					0.0686***	0.0271	0.0701***	0.0234
					(0.0140)	(0.0336)	(0.0143)	(0.0335)

	Model (1)		Model (2)		Model (3)		Model (4)	
	explained	unexplained	explained	unexplained	explained	unexplained	explained	unexplained
Constant	68.3934***		68.0259***		48.2800***		47.0545***	68.3934***
	(9.4482)		(9.4798)		(9.7571)		(9.8132)	(9.4482)
N	6,484	6,484	6,484	6,484	6,484	6,484	6,484	6,484

Note: Robust standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Table C-4. Discrimination Analysis-Residual Difference Decomposition: Natural Log of Award Amount, by DBE_Star

	Model (1)		Model (2)		Model (3)		Model (4)	
	explained	unexplained	explained	unexplained	explained	unexplained	explained	unexplained
DBE_Star	0.2342***	0.1249**	0.2426***	0.1165*	0.2381***	0.1210**	0.2514***	0.1078*
	(0.0313)	(0.0610)	(0.0315)	(0.0609)	(0.0288)	(0.0588)	(0.0290)	(0.0586)
year_2015	-0.0009	-0.0477	-0.0009	-0.0496	-0.0008	-0.0316	-0.0008	-0.0340
	(0.0094)	(0.0447)	(0.0093)	(0.0445)	(0.0092)	(0.0442)	(0.0091)	(0.0440)
year_2016	-0.0002	-0.0163	-0.0002	-0.0232	-0.0002	-0.0069	-0.0002	-0.0151
	(0.0060)	(0.0448)	(0.0060)	(0.0447)	(0.0062)	(0.0444)	(0.0061)	(0.0442)
lowrisk	0.0177***	-0.8615***	0.0178***	-0.8700***	0.0206***	-0.7638***	0.0208***	-0.7687***
	(0.0059)	(0.1700)	(0.0059)	(0.1667)	(0.0060)	(0.1675)	(0.0060)	(0.1639)
mrisk	-0.0264***	-0.0335***	-0.0261***	-0.0333***	-0.0426***	-0.0357***	-0.0424***	-0.0354***
	(0.0066)	(0.0087)	(0.0065)	(0.0088)	(0.0076)	(0.0095)	(0.0076)	(0.0096)
riskmiss	-0.0125***	-0.0045**	-0.0126***	-0.0038***	-0.0119***	-0.0044**	-0.0120***	-0.0035**
	(0.0037)	(0.0019)	(0.0037)	(0.0013)	(0.0034)	(0.0021)	(0.0034)	(0.0014)
mn	0.0078	0.2482	0.0064	0.1952	0.0167***	0.1850	0.0147**	0.1374
	(0.0059)	(0.2723)	(0.0059)	(0.2734)	(0.0060)	(0.2722)	(0.0059)	(0.2736)
yearfound	0.1461***	-68.3556***	0.1451***	-68.6422***	0.1209***	-47.9456***	0.1189***	-47.3393***
	(0.0150)	(9.3909)	(0.0150)	(9.4218)	(0.0143)	(9.7153)	(0.0143)	(9.7628)
construction	0.1706***	0.3838***	0.1712***	0.3793***	0.1478***	0.0966	0.1483***	0.0831
	(0.0244)	(0.0681)	(0.0245)	(0.0677)	(0.0214)	(0.0763)	(0.0215)	(0.0756)
service	0.0012	-0.0425***	0.0011	-0.0367***	0.0011	-0.0610***	0.0010	-0.0556***
	(0.0054)	(0.0140)	(0.0053)	(0.0142)	(0.0050)	(0.0149)	(0.0048)	(0.0150)
trade	-0.0690***	-0.0225	-0.0689***	-0.0223	-0.0756***	-0.0384**	-0.0756***	-0.0394***
	(0.0116)	(0.0141)	(0.0116)	(0.0141)	(0.0123)	(0.0153)	(0.0123)	(0.0153)
morethanonecon			0.0097**	0.7200**			0.0153***	0.6802**
			(0.0042)	(0.2882)			(0.0046)	(0.2955)
Prime_sub					0.0623***	0.0291	0.0636***	0.0253
					(0.0138)	(0.0335)	(0.0141)	(0.0333)

	Model (1)		Model (2)		Model (3)		Model (4)	
	explained	unexplained	explained	unexplained	explained	unexplained	explained	unexplained
Constant		68.8771***		68.5030***		48.6978***		47.4729***
		(9.4560)		(9.4878)		(9.7631)		(9.8192)
N	6,640	6,640	6,640	6,640	6,640	6,640	6,640	6,640

Note: Robust standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

APPENDIX D: PUBLIC COMMENT PERIOD

Announcement: Public Comment Period Open July 3 - July 31,2018 on Proposed Goals for Disadvantaged Business Enterprises

As a condition of receiving federal money, MnDOT is required by the Federal Highway Administration and Federal Transit Administration (FTA) to establish an annual statewide goal for DBEs to perform on federally-funded contracts over the next three years. The annual goal is a percentage of the federal contracting dollars that are targeted for certified DBE firms to perform based on the availability of ready, willing, and able firms in Minnesota. MnDOT's annual goal is 12.23 percent of the sum of all FHWA-funded contracts to be performed by DBEs and 9.12 percent of the sum of all FTA-funded contracts to be performed by DBEs.

- Proposed Disadvantaged Enterprise Goals
  - FHWA-funded contracts: 12.23 percent of the sum of all to be performed by DBEs.
  - FTA-funded contracts: 9.12 percent of the sum of all to be performed by DBEs.
- Goal time period
  - The goals will be in effect for Federal Fiscal Year 2019-2021.
- Public comment period
  - Public comments will be accepted from July 3 to July 31, 2018

The public may view documents of the proposed goals and goal-setting methodologies at MnDOT's website: https://www.dot.state.mn.us/civilrights/dbe-goal.html

Four public meetings are scheduled to discuss the goal methodology and receive public comment:

- **July 9, 2018**
  9 a.m. to noon
  Rochester MnDOT District Office
  2900 48th St. NW
  Rochester MN, 55901-5848
  507-286-7500
- **July 11, 2018**
  9 a.m. to noon
  Hiway Federal Credit Union
  840 Westminster St.
  St. Paul, MN 55130
  651-291-2550
- **July 13, 2018**
  9 a.m. to noon
  Duluth MnDOT District Office
  1123 Mesaba Ave

Duluth, MN 55811
218-725-2700

- **July 23, 2018**
  1 p.m to 3 p.m.
  Ewald Conference Center
  1000 Westgate Drive Room A and B
  St. Paul, MN 55114

Written comments can be submitted to https://www.dot.state.mn.us/civilrights/dbe-goal.html