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The preparation of this report was financed in part through funds provided by the Iowa Department of Transportation through its “Second Revised Agreement for the Management of Research Conducted by Iowa State University for the Iowa Department of Transportation” and its amendments.

The opinions, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the Iowa Department of Transportation.
InTrans Project 16-589

2. Government Accession No.  

3. Recipient’s Catalog No.  

4. Title and Subtitle  
Disadvantaged Business Enterprises (DBE) Supportive Services

5. Report Date  
November 2020

6. Performing Organization Code  

7. Author(s)  
Jennifer Shane (orcid.org/0000-0002-2612-4269) and Hongtao Dang (orcid.org/0000-0001-7332-5648)

InTrans Project 16-589

9. Performing Organization Name and Address  
Construction Management and Technology Program  
Institute for Transportation  
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10. Work Unit No. (TRAIS)  

11. Contract or Grant No.  

12. Sponsoring Organization Name and Address  
Iowa Department of Transportation  
800 Lincoln Way  
Ames, IA 50010

13. Type of Report and Period Covered  
Final Report


15. Supplementary Notes  
Visit [https://intrans.iastate.edu/](https://intrans.iastate.edu/) for color pdfs of this and other research reports.

16. Abstract  
The Federal Highway Administration (FHWA) distributes funds to help state transportation agencies (STAs), including the Iowa Department of Transportation (DOT), carry out the activities of the Disadvantaged Business Enterprise Supportive Services (DBE/SS) program. Under the program, the Civil Rights team within the Office of Employee Services at the Iowa DOT provides supportive services to Iowa-based DBEs in collaboration with CPMI, Inc. and the Construction Management and Technology (CMAT) Program at Iowa State University’s Institute for Transportation (InTrans).

This report synthesizes information about the supportive services that CMAT developed by (1) conducting a needs analysis, (2) exploring the state of the practice, and (3) developing and delivering those supportive services to Iowa-certified DBE firms. These supportive services included but were not limited to website development support, short-take videos, networking events, and training and workshop offerings.

This work uncovered DBE characteristics nationwide and in Iowa, revealed challenges in offering DBE supportive services, and identified useful supportive services for DBE firms. In summary, the DBE supportive services program provides a wide range of supportive services in various modes such as networking events, workshops, and training.

17. Key Words  
DBE supportive services—disadvantaged business enterprises—Iowa DOT support

18. Distribution Statement  
No restrictions.

19. Security Classification (of this report)  
Unclassified.

20. Security Classification (of this page)  
Unclassified.

21. No. of Pages  
40

22. Price  
NA

Form DOT F 1700.7 (8-72)  
Reproduction of completed page authorized
DISADVANTAGED BUSINESS ENTERPRISE SUPPORTIVE SERVICES

Final Report
November 2020

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Sponsored by
Iowa Department of Transportation
(InTrans Project 16-589)

Preparation of this report was financed in part through funds provided by the Iowa Department of Transportation through its Research Management Agreement with the Institute for Transportation

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# TABLE OF CONTENTS

ACKNOWLEDGMENTS .................................................................................................................... vii  
EXECUTIVE SUMMARY ............................................................................................................... ix  
INTRODUCTION .......................................................................................................................... 1  
  Background ................................................................................................................................. 1  
  Objectives and Scope of the Report .......................................................................................... 1  
  Legislation Related to Disadvantaged Business Enterprises and Supportive Services .......... 2  
  Literature Related to Disadvantaged Business Enterprises and Supportive Services ........ 3  
METHODS OF INFORMATION COLLECTION ............................................................................. 6  
  Summary of Database Information Collection ........................................................................ 6  
  Summary of Survey Information Collection .......................................................................... 6  
  Summary of Interview Information Collection ....................................................................... 7  
  Summary of Data Collection through Informal Means .......................................................... 7  
NEEDS ANALYSIS OF CERTIFIED DBE FIRMS IN IOWA ....................................................... 8  
SUPPORTIVE SERVICES STATE OF THE PRACTICE ............................................................... 17  
  DBE Orientation ....................................................................................................................... 19  
  Workshops ............................................................................................................................... 19  
  One-on-One Consulting .......................................................................................................... 19  
  Financial Guidance ................................................................................................................. 20  
  Mentor-Protégé Program ....................................................................................................... 20  
DEVELOPMENT AND DELIVERY PROCESS OF SUPPORTIVE SERVICES ......................... 21  
  Sample Networking Events ..................................................................................................... 21  
  Cost-Based Estimator Training .............................................................................................. 23  
  Training Videos: Accounting and Financial Training .......................................................... 24  
  Short-Take Videos ................................................................................................................. 25  
  Sample Workshop Offerings ................................................................................................. 26  
  Examples of Additional Resources Provided to DBE Firms ............................................... 28  
CONCLUSIONS ........................................................................................................................... 29  
REFERENCES .............................................................................................................................. 30
LIST OF FIGURES

Figure 1. Numbers of certified DBEs in the 50 states and Washington, DC, as of 2018 ............9
Figure 2. Geographic distribution of Iowa-certified DBE firms in the US .................................12
Figure 3. Ethnicity distribution of certified DBEs in Iowa ..........................................................14

LIST OF TABLES

Table 1. Top 20 NAICS codes from 16 states .................................................................................10
Table 2. Rating of business challenges by survey respondents .....................................................11
Table 3. NAICS codes (with counts higher than 10) under which DBEs are registered in Iowa .................................................................................................................................13
Table 4. Iowa DBE commitments (with 10 or more bids) between April 6, 2014 and
January 17, 2018 ............................................................................................................................14
Table 5. Iowa DBE commitments (with 1% or more of the total contract dollar volume)
between April 6, 2014 and January 17, 2018 ..................................................................................15
Table 6. Supportive services offered by Iowa’s neighboring states ................................................18
ACKNOWLEDGMENTS

The authors would like to thank the Iowa Department of Transportation (DOT) Civil Rights team within the Office of Employee Services for sponsoring this project. They would also like to thank the Iowa DOT leaders on this project (in order of service over time), Jacqueline Miskimins, Karen Kienast, Kim VanCleave, and Tonnette Harris, and the other technical advisory committee (TAC) members, Danny Wagener, Nikita Rainey, Luis Leon, and Krista Thier.
EXECUTIVE SUMMARY

The Federal Highway Administration (FHWA) distributes funds to help state transportation agencies (STAs), including the Iowa Department of Transportation (DOT), carry out the activities of the Disadvantaged Business Enterprise Supportive Services (DBE/SS) program. Under the program, the Civil Rights team within the Office of Employee Services at the Iowa DOT provides supportive services to Iowa-based DBEs in collaboration with CPMI, Inc. and the Construction Management and Technology (CMAT) Program at Iowa State University’s Institute for Transportation (InTrans).

This report synthesizes information about the supportive services that CMAT developed by (1) conducting a needs analysis, (2) exploring the state of the practice, and (3) developing and delivering those supportive services to Iowa-certified DBE firms. These supportive services included but were not limited to website development support, short-take videos, networking events, and training and workshop offerings.

The work uncovered DBE characteristics nationwide and in Iowa, revealed challenges in offering DBE supportive services, and identified useful supportive services for DBE firms. In summary, the DBE supportive services program provides a wide range of supportive services in various modes such as networking events, workshops, and training.
INTRODUCTION

Background

The Federal Highway Administration (FHWA) allocates about $10 million in funds every year to help state transportation agencies (STAs) perform the activities of the Disadvantaged Business Enterprise Supportive Services (DBE/SS) program in their respective states. STAs operate the DBE/SS program in conjunction with the FHWA’s Disadvantaged Business Enterprise (DBE) program. The primary purpose of the DBE/SS program is to “provide training, assistance, and services to minority, disadvantaged, and women business enterprises so as to increase their activities in the [DBE] program, and to facilitate the firms’ development into viable, self-sufficient organizations capable of competing for and performing on federally assisted highway projects” (FHWA 2018).

Typically, an organization helping to facilitate an agency’s DBE/SS program prepares a statement of work and provides some supportive services to assist in the development of certified DBEs through identifiable and metric-based results. Supportive services can include, among other activities, on-the-job training, mentor-protégé programs (MPPs), and business development programs (BDPs). Depending on the agency, MPPs and BDPs are sometimes independent of and sometimes a part of the DBE/SS program. Some agencies also define administrative practices such as removing barriers to the participation of DBEs as part of their DBE/SS programs. These administrative practices include, but are not limited to, unbundling large contracts and waiving bonding requirements.

In Iowa, the Civil Rights Team within the Office of Employee Services at the Iowa Department of Transportation (DOT) manages and oversees both the DBE and DBE/SS programs. The Iowa DOT provides supportive services in collaboration with CPMI, Inc. and the Construction Management and Technology (CMAT) Program at Iowa State University’s (ISU’s) Institute for Transportation (InTrans). The supportive services offered under the program include but are not limited to technical assistance, access to self-paced courses, and bonding assistance.

As outlined in its statement of work, CMAT provides certain supportive services to assist in the development of certified DBEs in Iowa. To develop its services, CMAT analyzes the needs of certified DBEs in Iowa, explores the state of the practice in terms of the supportive services offered in Iowa’s neighboring states, consults with a technical advisory committee (TAC), formulates a development process, and delivers several supportive services. These supportive services have identifiable and metric-based results and include, among other services, website development support, short-take videos, networking events, and training and workshops.

Objectives and Scope of the Report

This report synthesizes information about the supportive services that CMAT developed by (1) conducting a needs analysis, (2) exploring the state of the practice, and (3) developing and delivering those supportive services to Iowa-certified DBE firms.
The project described in this report focuses on the supportive services that CMAT developed to assist in the development of DBEs by creating contracting opportunities, providing informative workshops and technical training, and facilitating programs that focus on building capabilities and capacity. This report summarizes only those supportive services offered through CMAT; the Iowa DOT organizes the annual DBE Workshop, and CPMI, Inc. provides additional supportive services through Iowa’s DBE/SS program, which are not directly addressed in this report.

Legislation Related to Disadvantaged Business Enterprises and Supportive Services

In 1980, under the authority of Title VI of the Civil Rights Act of 1964, the United States Department of Transportation (U.S. DOT) established a program to assist minority-owned business enterprises. The name of the program was changed to the DBE program in 1983 under the Surface Transportation Assistance Act (STAA). The STAA requires that “not less than 10 per centum of the amounts authorized to be appropriated under this Act shall be expended with small business concerns owned and controlled by socially and economically disadvantaged individuals” (Public Law 97-424, Sec. 105[f]).

Since its inception, Congress has reauthorized the DBE program five times through the following legislation (FHWA 2018):

- Transportation Equity Act for the 21st Century (TEA-21), 1998 (Public Law 105–178, Sec. 1101)
- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), 2005 (Public Law 109–59, Sec. 1101)
- Moving Ahead for Progress in the 21st Century Act (MAP-21), 2012 (Public Law 112–141, Sec. 1101)
- Fixing America’s Surface Transportation (FAST) Act, 2015 (Public Law 114-94, Sec. 1101)

According to Title 49, Subtitle A, Part 26 of the Code of Federal Regulations (CFR), a DBE is a for-profit small business “that is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged” or, “[i]n the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals” and “whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it” (49 C.F.R. §26.5). Socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent Asian Americans, women, or any other individual determined to be socially and economically disadvantaged on a case-by-case basis.

Disadvantaged individuals are “subjected to racial or ethnic prejudice and culture bias in American society because of their identities as members of groups without regard to their individual qualities,” and their “ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities” (49 C.F.R. §26.5). The U.S. DOT
established the DBE program to remedy such situations and to create a level playing field for all contractors competing on federally assisted contracts.

The eight objectives of the U.S. DOT’s DBE program are listed under 49 C.F.R. §26.1 as follows:

- To ensure nondiscrimination in the award and administration of DOT-assisted contracts in the department's highway, transit, and airport financial assistance programs
- To create a level playing field on which DBEs can compete fairly for DOT-assisted contracts
- To ensure that the department's DBE program is narrowly tailored in accordance with applicable law
- To ensure that only firms that fully meet this part’s eligibility standards are permitted to participate as DBEs
- To help remove barriers to the participation of DBEs in DOT-assisted contracts
- To promote the use of DBEs in all types of federally assisted contracts and procurement activities conducted by recipients
- To assist the development of firms that can compete successfully in the marketplace outside the DBE program
- To provide appropriate flexibility to recipients of federal financial assistance in establishing and providing opportunities for DBEs

Literature Related to Disadvantaged Business Enterprises and Supportive Services

For National Cooperative Highway Research Program (NCHRP) Synthesis 343: Management of Disadvantaged Business Enterprise Issues in Construction Contracting, 36 STAs were surveyed about the organization, function, and size of their DBE programs (Smith 2005). The results showed that states managed their DBE programs in different ways. Most STAs placed the DBE program in their civil rights office, while a few STAs managed the DBE program in their construction contract administration groups.

STAs experienced an increase in new DBE certifications on average, and the number of ready, willing, and able DBEs increased in 13 states and remained the same in 14 states. Most STAs used both race-neutral and race-conscious approaches in administering their DBE programs. In the race-neutral approach, DBEs are encouraged to participate in federally assisted contracts without setting DBE participation goals for individual contracts. In the race-conscious approach, specific DBE participation goals are determined and mandated in federally assisted contracts. Smith (2005) stressed the need for future research in four areas: “program effectiveness and performance measures, technical and administrative issues, best practices, and resource issues.”

La Noue (2008) collected 5,385 contracts awarded to 432 recipients totaling $1.94 billion in fiscal year 2004. La Noue (2008) found that white women were the primary beneficiary of the awards. The race-conscious goals did not remedy possible discrimination against DBE firms, and especially minority firms.
Kim and Arditi (2010) compared the performance of DBE and non-DBE construction firms in transportation projects. The authors first reviewed contemporary performance measurement tools in the literature. Then, they developed a performance assessment model that covered seven areas: finances, customer satisfaction, internal business, learning and growth, safety, technological innovativeness, and quality management. These seven areas consisted of 13 performance factors, in which each factor was a question rated on a five-point Likert scale. Kim and Arditi (2010) collected 82 responses from DBE firms and 50 from non-DBE firms. Large companies reported similar performance regardless of DBE status. However, small DBE firms struggled in terms of finances, customer relationships, learning and growth, and technological support compared to peer non-DBE firms.

For *NCHRP Synthesis 416: Implementing Race-Neutral Measures in State DBE Programs*, Casey et al. (2011) surveyed 47 out of 50 states, evaluated 22 race-neutral measures, described 17 strategies for implementing race-neutral measures, and discussed 11 challenges and solutions for state DBE programs. The authors classified race-neutral measures into four categories, including supportive services and training, administrative support, marketing and outreach, and financial assistance.

The survey responses indicated the different interpretations of race-neutral measures among states; the authors noted that “a measure viewed as race-neutral by one state may not be considered race-neutral in another” and that “the same measure may be implemented differently” in different states. The most used race-neutral measures on average were supportive services and training. On average, the least used race-neutral measure was financial assistance. The top five race-neutral measures, in terms of those rated as effective, very effective, or extremely effective, were as follows:

- Branding, marketing, and publicizing the state’s DBE programs, creating a DBE directory, and/or providing information through outreach events, publications, websites, and other vehicles
- Providing firms with one-on-one business reviews and/or technical assistance
- Providing training classes and technical education
- Assisting firms in using technology, such as electronic bidding, website development, and conducting business over the internet
- Providing firms with business development assistance, such as marketing and training assistance or help with business management, business plans, or financial statements

Shrestha et al. (2015) compared the performance of and impediments faced by DBEs that provide construction and professional services in transportation. The authors collected 259 survey responses from DBEs nationwide to assess factors in five categories: performance, internal impediments, external impediments, advantages, and disadvantages. Each category contained five to nine factors based on previous literature.

The authors calculated a relative importance index to compare these factors and performed binary logistic regression on the survey data. The analyzed data distinguished the needs of construction and professional DBEs. Significant impediments identified for construction DBEs
were expensive manpower, lack of technology, unskilled manpower, and bid shopping. Construction DBEs needed financial assistance and safe work practices to improve business performance. However, DBEs providing professional services needed marketing assistance more than construction DBEs did.
METHODS OF INFORMATION COLLECTION

A variety of data collection methods were used to develop CMAT’s DBE/SS program. Data were collected from national databases, local databases, surveys, interviews, and informal discussions with DBEs, the TAC, and other interested parties.

Summary of Database Information Collection

In 2018 and 2019, national and local databases pertaining to DBE registration, including information on ethnicity, gender, disadvantaged group(s), and North American Industry Classification System (NAICS) codes, were mined to determine the profiles of DBE firms in order to evaluate the firms’ needs. It was found that DBEs tend to register their businesses in the top 10 most commonly used NAICS codes. The NAICS codes for DBEs in 16 states were counted and ranked from the most to the least common. The data indicate that DBEs most frequently register their services in two major industrial sectors, including sector 23 (construction) and sector 54 (professional, scientific, and technical services). Another frequently identified industrial service among DBEs is subsector 484 (truck transportation), specifically services “providing local, specialized trucking.”

Summary of Survey Information Collection

A comprehensive survey was developed to collect information nationally and locally regarding DBE supportive services. The survey included 26 questions. Below is a breakdown of the survey’s four sections:

- Questions 1 to 8 ask for demographic information.
- Questions 9 to 16 ask for information about the business.
- Questions 17 to 23 ask specifically about DBEs and DBE programs.
- Questions 24 to 26 ask respondents to rate the effectiveness of supportive services.

Contact information for DBEs was obtained from the DBE program websites of state DOTs. All duplicates (e.g., DBE firms certified in multiple states) were removed, so a DBE would only get one request to complete the survey. The survey was sent to 35,178 unique DBEs (i.e., in terms of the email address and owner’s name), and 1,384 responses were collected between June and July 2019. Although the response rate was low (about 3.4%), the number of responses is significant.

In addition, a survey was developed and sent to the DBE liaison offices of 50 state DOTs. The survey included 24 questions in three sections: DBE program practices, DBE characteristics, and effective supportive services. Because of the low response rate, the survey data were excluded from statistical analysis and are used as supplementary validation for results obtained by other means.
Summary of Interview Information Collection

In February 2017, the Iowa DOT hosted a two-day “DBE Essentials Workshop.” All Iowa DBEs were invited to attend. Multiple workshops were held over the two days for DBEs to choose from depending on their needs. Iowa State University representatives attended to interview some of the DBEs. The goal of the interviews was to decide what type of supportive services are needed for DBEs and which areas of business DBEs would like to improve.

The DBEs that attended the workshop varied widely in terms of size. Interview results came from three specific companies. The first was a small company of one employee who had just started her business in traffic counting. The second was a medium-sized company that had multiple employees but was still mostly family owned and operated; the company worked on laying pavement in northwestern Iowa. The last was a large company with over 60 employees that mostly worked in engineering design in Illinois.

When the company representatives were asked about how they had learned about the DBE program, they had very similar responses: they were referred to the program by friends or business associates. None of them found the program on their own or saw information about the program during the process of developing their business. They acknowledged that they were not aware of everything the program had to offer when they first joined the DBE program. Outreach and publicity about the program are services that seemed to be missing from the current DBE program.

In addition to the interviews with the three companies, more than 100 DBEs were interested in participating in semi-structured interviews pertaining to different topics: business development models, effective supportive services, and leadership competencies. Below is a list of the semi-structured interviews conducted:

- Business development model topic, 17 interviews
- Effective supportive service topic, 11 interviews
- Leadership competency topic, 12 interviews

Summary of Data Collection through Informal Means

Occasionally, DBEs or other parties would provide unsolicited ideas to Iowa State University personnel for DBE supportive service offerings. Additionally, supportive service offerings were solicited through the TAC. Through the TAC, CMAT participated in multiple DBE workshops conducted by the Iowa DOT to talk about the supportive service offerings, to develop relationships with DBEs, and to capture ideas directly from DBEs through conversations about supportive service needs. One example of this is that after participating in the first cost estimate training event, a DBE mentioned this training at an Iowa DOT DBE workshop to the entire group and suggested that if it were offered again everyone should attend. Based on this positive feedback and interest, the training was offered a second time.
NEEDS ANALYSIS OF CERTIFIED DBE FIRMS IN IOWA

As shown in Figure 1, an examination of DBE directories from across the US found 56,064 DBEs in the 50 states and 2,071 in Washington, DC (and 218 in Puerto Rico, not shown in the figure).
Figure 1. Numbers of certified DBEs in the 50 states and Washington, DC, as of 2018
One DBE might be certified in multiple states. Therefore, the total number of DBEs includes duplications, and the actual total number remains unknown. Figure 1 shows the number of DBEs according to each state’s DBE directory. The states with the highest number of certified DBEs are Maryland, Texas, California, Georgia, Virginia, New York, Indiana, Illinois, and the District of Columbia.

The DBE program requires certified DBE firms to provide their registered NAICS codes in a publicly available DBE directory. Non-DBE contractors can identify potential DBEs as subcontractors based on registered NAICS codes. The top 20 most common NAICS codes of certified DBEs in 16 states are listed in Table 1.

<table>
<thead>
<tr>
<th>NAICS Code</th>
<th>Count</th>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>541611</td>
<td>2,287</td>
<td>4.38%</td>
<td>Administrative Management and General Management Consulting Services</td>
</tr>
<tr>
<td>541330</td>
<td>1,981</td>
<td>3.79%</td>
<td>Engineering Services</td>
</tr>
<tr>
<td>237310</td>
<td>1,820</td>
<td>3.48%</td>
<td>Highway, Street, and Bridge Construction</td>
</tr>
<tr>
<td>484220</td>
<td>1,351</td>
<td>2.59%</td>
<td>Specialized Freight (except Used Goods) Trucking, Local</td>
</tr>
<tr>
<td>541618</td>
<td>1,295</td>
<td>2.48%</td>
<td>Other Management Consulting Services</td>
</tr>
<tr>
<td>238910</td>
<td>1,191</td>
<td>2.28%</td>
<td>Site Preparation Contractors</td>
</tr>
<tr>
<td>238990</td>
<td>1,146</td>
<td>2.19%</td>
<td>All Other Specialty Trade Contractors</td>
</tr>
<tr>
<td>541512</td>
<td>1,027</td>
<td>1.97%</td>
<td>Computer System Design Services</td>
</tr>
<tr>
<td>236220</td>
<td>1,012</td>
<td>1.94%</td>
<td>Commercial and Institutional Building Construction</td>
</tr>
<tr>
<td>541620</td>
<td>979</td>
<td>1.87%</td>
<td>Environmental Consulting Services</td>
</tr>
<tr>
<td>541690</td>
<td>902</td>
<td>1.73%</td>
<td>Other Specific and Technical Consulting Services</td>
</tr>
<tr>
<td>541511</td>
<td>844</td>
<td>1.62%</td>
<td>Custom Computer Programming Services</td>
</tr>
<tr>
<td>541613</td>
<td>762</td>
<td>1.46%</td>
<td>Marketing Consulting Services</td>
</tr>
<tr>
<td>238210</td>
<td>671</td>
<td>1.28%</td>
<td>Electrical Contractors and Other Wiring Installation Contractors</td>
</tr>
<tr>
<td>237990</td>
<td>656</td>
<td>1.26%</td>
<td>Other Heavy and Civil Engineering Construction</td>
</tr>
<tr>
<td>541519</td>
<td>595</td>
<td>1.14%</td>
<td>Other Computer Related Services</td>
</tr>
<tr>
<td>541990</td>
<td>568</td>
<td>1.09%</td>
<td>All Other Professional, Scientific, and Technical Services</td>
</tr>
<tr>
<td>541614</td>
<td>540</td>
<td>1.03%</td>
<td>Process, Physical Distribution, and Logistic Consulting Services</td>
</tr>
</tbody>
</table>

16 states: Arkansas, California, Colorado, Florida, Georgia, Indiana, Iowa, Kentucky, Louisiana, Massachusetts, Minnesota, Ohio, Pennsylvania, Rhode Island, South Dakota, and Wisconsin

The table ranks the NAICS codes from the most to the least common. The weighted percentage for each NAICS code is the count for that code versus the total number of counted NAICS codes. The data indicate that DBEs most frequently register their services in two major industrial sectors: sector 23 (construction) and sector 54 (professional, scientific, and technical services). Another well-represented industrial service for DBEs is subsector 484 (truck transportation), specifically services “providing local, specialized trucking.” The next 10 NAICS codes consisted.
of seven industries in sector 54, two industries in sector 23, and one industry providing landscaping services.

A national survey of DBE firms regarding 16 business challenges resulted in 1,384 responses. Of the 1,384 survey responses, the number of responses for each of the challenges range between 458 and 465. Table 2 shows the rating of business challenges by survey respondents.

Table 2. Rating of business challenges by survey respondents

<table>
<thead>
<tr>
<th>Description</th>
<th>ID#</th>
<th>Not Applicable</th>
<th>No challenge</th>
<th>Minor challenge</th>
<th>Somewhat challenge</th>
<th>Major challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding contracting opportunities in general</td>
<td>BC_1</td>
<td>16</td>
<td>160</td>
<td>210</td>
<td>51</td>
<td>28</td>
</tr>
<tr>
<td>Diminished opportunities because of my race or gender</td>
<td>BC_2</td>
<td>51</td>
<td>192</td>
<td>170</td>
<td>31</td>
<td>15</td>
</tr>
<tr>
<td>Marketing my business and networking with others</td>
<td>BC_3</td>
<td>16</td>
<td>194</td>
<td>206</td>
<td>37</td>
<td>10</td>
</tr>
<tr>
<td>Finding capital such as loans and credits</td>
<td>BC_4</td>
<td>92</td>
<td>128</td>
<td>175</td>
<td>32</td>
<td>37</td>
</tr>
<tr>
<td>Getting surety bonds or increasing bonding capacity</td>
<td>BC_5</td>
<td>252</td>
<td>87</td>
<td>86</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>Managing cash flows and preparing financial statements</td>
<td>BC_6</td>
<td>21</td>
<td>188</td>
<td>196</td>
<td>33</td>
<td>26</td>
</tr>
<tr>
<td>Using electronic bidding systems or technology</td>
<td>BC_7</td>
<td>89</td>
<td>232</td>
<td>118</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td>Navigating project letting and bidding processes</td>
<td>BC_8</td>
<td>71</td>
<td>215</td>
<td>140</td>
<td>30</td>
<td>8</td>
</tr>
<tr>
<td>Finding new or retaining existing skilled workers</td>
<td>BC_9</td>
<td>66</td>
<td>75</td>
<td>240</td>
<td>42</td>
<td>40</td>
</tr>
<tr>
<td>Having or working with someone who has language barriers</td>
<td>BC_10</td>
<td>144</td>
<td>217</td>
<td>84</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Bias and/or discrimination from prime contractors</td>
<td>BC_11</td>
<td>50</td>
<td>162</td>
<td>194</td>
<td>34</td>
<td>21</td>
</tr>
<tr>
<td>Bias and/or discrimination from DOT staff</td>
<td>BC_12</td>
<td>71</td>
<td>240</td>
<td>117</td>
<td>22</td>
<td>13</td>
</tr>
<tr>
<td>Strong competition as a result of DBE overconcentration</td>
<td>BC_13</td>
<td>47</td>
<td>213</td>
<td>156</td>
<td>34</td>
<td>12</td>
</tr>
<tr>
<td>Delayed payments or withheld retainages</td>
<td>BC_14</td>
<td>39</td>
<td>120</td>
<td>209</td>
<td>45</td>
<td>50</td>
</tr>
<tr>
<td>Bid shopping by primes after contract award</td>
<td>BC_15</td>
<td>110</td>
<td>114</td>
<td>178</td>
<td>27</td>
<td>29</td>
</tr>
<tr>
<td>Managing and maintaining relationship with others</td>
<td>BC_16</td>
<td>18</td>
<td>233</td>
<td>165</td>
<td>35</td>
<td>7</td>
</tr>
<tr>
<td>Other, please explain</td>
<td>BC_17</td>
<td>64</td>
<td>18</td>
<td>35</td>
<td>3</td>
<td>16</td>
</tr>
</tbody>
</table>

Most DBE firms experience no business challenges or minor challenges, with some experiencing somewhat or major challenges. The top five business challenges that respondents deemed not applicable are as follows:

- Getting surety bonds or increasing bonding capacity
- Having or working with someone who has language barriers
- Bid shopping by primes after contract award
- Finding capital such as loans and credits
- Using electronic bidding systems or technology

A large number of DBE firms indicate that getting surety bonds or increasing bonding capacity is not applicable to them as a business challenge. Some DBE firms may be small and do not need bonding. Other DBE firms may not operate in a sector that requires bonding.

The top five business challenges that respondents deemed to be major are as follows:
- Delayed payments or withheld retainages
- Finding new or retaining existing skilled workers
- Finding capital such as loans and credits
- Bid shopping by primes after contract award
- Finding contracting opportunities in general

An analysis of the responses showed that twice as many DBE firms in other fields have rated finding contracting opportunities as a minor, somewhat, or major challenge compared to DBEs in either engineering or construction. One reason for this difference may be that state DOTs offer more contracting opportunities in either engineering or construction than any other business area.

Conducting a needs analysis requires a comprehensive understanding of the regulations governing the DBE program and the characteristics of Iowa-certified DBEs.

The Iowa DOT lists 287 certified DBE firms, of which 74 are in highway construction, with 26 consistently performing work on Iowa DOT-let projects. Figure 2 illustrates the geographic locations of DBEs certified in Iowa.

![Figure 2. Geographic distribution of Iowa-certified DBE firms in the US](image)

The majority of the DBE firms shown on the map are in Iowa or neighboring states. Some DBE firms are in the eastern and southeastern states, with a few Iowa-certified DBE firms in western states. DBEs may have branch offices in Iowa or work remotely on engineering or planning services for federally assisted projects in Iowa.
Table 3 illustrates the NAICS codes (with counts higher than 10) under which DBEs are registered in Iowa.

Table 3. NAICS codes (with counts higher than 10) under which DBEs are registered in Iowa

<table>
<thead>
<tr>
<th>NAICS Code</th>
<th>Count</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>237310</td>
<td>65</td>
<td>Highway, Street, and Bridge Construction</td>
</tr>
<tr>
<td>541330</td>
<td>50</td>
<td>Engineering Services</td>
</tr>
<tr>
<td>484220</td>
<td>36</td>
<td>Specialized Freight (except Used Goods) Trucking, Local</td>
</tr>
<tr>
<td>238990</td>
<td>34</td>
<td>All Other Specialty Trade Contractors</td>
</tr>
<tr>
<td>238910</td>
<td>28</td>
<td>Site Preparation Contractors</td>
</tr>
<tr>
<td>541611</td>
<td>27</td>
<td>Administrative Management and General Management Consulting Services</td>
</tr>
<tr>
<td>237990</td>
<td>25</td>
<td>Other Heavy and Civil Engineering Construction</td>
</tr>
<tr>
<td>541512</td>
<td>25</td>
<td>Computer Systems Design Services</td>
</tr>
<tr>
<td>237110</td>
<td>22</td>
<td>Water and Sewer Line and Related Structures Construction</td>
</tr>
<tr>
<td>541620</td>
<td>17</td>
<td>Environmental Consulting Services</td>
</tr>
<tr>
<td>238120</td>
<td>16</td>
<td>Structural Steel and Precast Concrete Contractors</td>
</tr>
<tr>
<td>541370</td>
<td>16</td>
<td>Surveying and Mapping (except Geophysical) Services</td>
</tr>
<tr>
<td>561730</td>
<td>16</td>
<td>Landscaping Services</td>
</tr>
<tr>
<td>541613</td>
<td>15</td>
<td>Marketing Consulting Services</td>
</tr>
<tr>
<td>541690</td>
<td>15</td>
<td>Other Scientific and Technical Consulting Services</td>
</tr>
<tr>
<td>541820</td>
<td>15</td>
<td>Public Relations Agencies</td>
</tr>
<tr>
<td>238110</td>
<td>14</td>
<td>Poured Concrete Foundation and Structure Contractors</td>
</tr>
<tr>
<td>541511</td>
<td>14</td>
<td>Custom Computer Programming Services</td>
</tr>
<tr>
<td>541614</td>
<td>13</td>
<td>Process, Physical Distribution, and Logistics Consulting Services</td>
</tr>
<tr>
<td>541618</td>
<td>13</td>
<td>Other Management Consulting Services</td>
</tr>
<tr>
<td>236220</td>
<td>12</td>
<td>Commercial and Institutional Building Construction</td>
</tr>
<tr>
<td>541519</td>
<td>11</td>
<td>Other Computer Related Services</td>
</tr>
</tbody>
</table>

The data indicate that Iowa-certified DBEs register their services in two major industrial sectors: sector 23 (construction) and sector 54 (professional, scientific, and technical services). Another well-represented industrial service for DBEs is subsector 484 (truck transportation), specifically services “providing local, specialized trucking.” The top three registered NAICS codes are 237310 (highway, street, and bridge construction), 541330 (engineering services), and 484220 (specialized freight [except used goods] trucking in local areas).

The DBE regulations define seven presumed socially and economically disadvantaged groups, including Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent Asian Americans, Women, and Others designated by the U.S. Small Business Administration. Figure 3 depicts the ethnicity distribution of certified DBE firms in Iowa.
The largest DBE group in Iowa is women (white), followed by Black, Hispanic, Subcontinent Asian, Asian-Pacific, and Native Americans.

The DBE commitment data show that 48 DBE firms were awarded a total contract value of $122,079,651 between April 6, 2014 and January 17, 2018. Table 4 shows the DBE commitments of companies with 10 or more bids between 2014 and 2018.

Table 4. Iowa DBE commitments (with 10 or more bids) between April 6, 2014 and January 17, 2018

<table>
<thead>
<tr>
<th>DBE Contractor</th>
<th># of Bids</th>
<th>Commitment</th>
<th>Commit %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dormark Construction</td>
<td>252</td>
<td>$21,785,841</td>
<td>17.85%</td>
</tr>
<tr>
<td>Advanced Traffic Control</td>
<td>84</td>
<td>$4,355,190</td>
<td>3.57%</td>
</tr>
<tr>
<td>Duffield, Anne; Const</td>
<td>78</td>
<td>$5,034,636</td>
<td>4.12%</td>
</tr>
<tr>
<td>Rockette Trucking</td>
<td>66</td>
<td>$7,249,014</td>
<td>5.94%</td>
</tr>
<tr>
<td>Midwest Contractors</td>
<td>54</td>
<td>$6,849,909</td>
<td>5.61%</td>
</tr>
<tr>
<td>Mid-States Rebar</td>
<td>49</td>
<td>$2,626,293</td>
<td>2.15%</td>
</tr>
<tr>
<td>Taylor Const</td>
<td>47</td>
<td>$11,791,741</td>
<td>9.66%</td>
</tr>
<tr>
<td>Iron Works Rebar</td>
<td>46</td>
<td>$16,243,564</td>
<td>13.31%</td>
</tr>
<tr>
<td>OEL Const</td>
<td>37</td>
<td>$3,430,125</td>
<td>2.81%</td>
</tr>
<tr>
<td>Delong Const.</td>
<td>35</td>
<td>$5,244,964</td>
<td>4.30%</td>
</tr>
<tr>
<td>Paco Const</td>
<td>26</td>
<td>$1,294,922</td>
<td>1.06%</td>
</tr>
<tr>
<td>Donovan, JD.</td>
<td>22</td>
<td>$2,544,070</td>
<td>2.08%</td>
</tr>
<tr>
<td>JC Supply &amp; Manufacturing</td>
<td>19</td>
<td>$2,666,544</td>
<td>2.18%</td>
</tr>
<tr>
<td>DBE Contractor</td>
<td># of Bids</td>
<td>Commitment</td>
<td>Commit %</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>Wilson; CH, Transport</td>
<td>18</td>
<td>$406,483</td>
<td>0.33%</td>
</tr>
<tr>
<td>Leader Const</td>
<td>16</td>
<td>$1,974,013</td>
<td>1.62%</td>
</tr>
<tr>
<td>Curtis Contracting</td>
<td>14</td>
<td>$801,237</td>
<td>0.66%</td>
</tr>
<tr>
<td>Tara Erosion Control</td>
<td>13</td>
<td>$404,623</td>
<td>0.33%</td>
</tr>
<tr>
<td>Tiedt Nursery</td>
<td>13</td>
<td>$338,725</td>
<td>0.28%</td>
</tr>
<tr>
<td>Bonnie's Barricades</td>
<td>12</td>
<td>$160,668</td>
<td>0.13%</td>
</tr>
<tr>
<td>I&amp;A Construction</td>
<td>12</td>
<td>$1,875,639</td>
<td>1.54%</td>
</tr>
<tr>
<td>A&amp;D Contracting</td>
<td>10</td>
<td>$414,547</td>
<td>0.34%</td>
</tr>
<tr>
<td>Dan Ash Trucking</td>
<td>10</td>
<td>$1,588,200</td>
<td>1.30%</td>
</tr>
</tbody>
</table>

Some large and active DBE firms are Dormark Construction, Advanced Traffic Control, Duffield Anne Construction, Rockette Trucking, Midwest Contractors, Mid-States Rebar, and Taylor Construction.

Table 5 shows the DBE commitments of companies that had 1% or more of the total contract dollar volume between April 6, 2014 and January 17, 2018.

**Table 5. Iowa DBE commitments (with 1% or more of the total contract dollar volume) between April 6, 2014 and January 17, 2018**

<table>
<thead>
<tr>
<th>DBE Contractor</th>
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<th>Commitment</th>
<th>Commit %</th>
</tr>
</thead>
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</tr>
<tr>
<td>Iron Works Rebar</td>
<td>46</td>
<td>$16,243,564</td>
<td>13.31%</td>
</tr>
<tr>
<td>R.J.R. &amp; Assoc</td>
<td>1</td>
<td>$14,600,000</td>
<td>11.96%</td>
</tr>
<tr>
<td>Taylor Const</td>
<td>47</td>
<td>$11,791,741</td>
<td>9.66%</td>
</tr>
<tr>
<td>Rockette Trucking</td>
<td>66</td>
<td>$7,249,014</td>
<td>5.94%</td>
</tr>
<tr>
<td>Midwest Contractors</td>
<td>54</td>
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<td>35</td>
<td>$5,244,964</td>
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</tr>
<tr>
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<td>12</td>
<td>$1,875,639</td>
<td>1.54%</td>
</tr>
<tr>
<td>DND Electric</td>
<td>1</td>
<td>$1,800,000</td>
<td>1.47%</td>
</tr>
<tr>
<td>Dan Ash Trucking</td>
<td>10</td>
<td>$1,588,200</td>
<td>1.30%</td>
</tr>
<tr>
<td>Paco Const</td>
<td>26</td>
<td>$1,294,922</td>
<td>1.06%</td>
</tr>
</tbody>
</table>
SUPPORTIVE SERVICES STATE OF THE PRACTICE

Scholars have provided suggestions and recommendations related to supportive services. After the inception of the DBE program, Chang (1987) provided 33 suggestions in four categories to train DBE firms. These four categories were finance, bonding, training and education, and others. Later, the NCHRP published a synthesis for implementing race-neutral measures in state DBE programs (Casey et al. 2011). Supportive services and training were one of the measures identified in the synthesis. The report summarized the following five strategies:

- Provide firms with one-on-one business reviews and/or technical assistance
- Provide firms with bidding assistance, such as holding mock workshops on the bidding process or providing assistance with plan reading, bidding and estimating, job costing, and writing/designing statements of qualifications
- Assist firms in using technology, such as electronic bidding, website development, and conducting business over the internet
- Provide training classes and technical education
- Provide firms with business development assistance, such as marketing and training assistance or help with business management, business plans, or financial statements

Shrestha et al. (2015) pointed out that different DBE firms needed different types of assistance. DBE firms providing professional services needed support in marketing. DBE firms in construction needed financial assistance, training on safe work practices, technology support, and technical training.

Keen et al. (2019) proposed the following 11 forms of state DOT assistance to encourage the success of DBE firms:

- DBE recruitment and effective DBE certification
- Relationship building
- Information about contract opportunities
- Enforcement of prompt payment requirements
- General training
- Individualized training and assistance
- Individualized assistance tiled to successful DBEs
- Providing access to capital
- Contract goals
- Unbundling contracts and selection of prime contractors and consultants that are friendly to small businesses
- Sheltered market bidding for small contracts

The national survey conducted as part of the present research asked 448 respondents about their use of supportive services. Of the 448 respondents to this question, 42% reported having used some supportive services and an interest in continuing to use more, 33% had never used any supportive services but were interested, 14% had used some supportive services in the past and
had no intention of using any in the future, and the remainder had never used any supportive services and had no intuition of using any in the future.

In this survey, respondents from all business areas indicated that tuition reimbursement is very or extremely useful. Tuition reimbursement allows DBE firms to identify and choose courses, training, or conferences that are useful to them and provides cost reimbursement for a degree. The next most useful supportive service is collaboration with other organizations, followed by accounting, DBE program support, contract administration, quality assurance and control, safety, and bidding. DBE program support includes outreach and networking, email blasts and newsletters, certification assistance, an introduction to the DBE program, information about financial assistance programs, unbundling of large contracts, prompt pay provisions, and release of retainage. The least useful supportive services were found to be temporary support structures, followed by investment, business administration, insurance, design by material types, and one-on-one assistance.

In addition to tuition reimbursement, respondents from DBE firms in construction rated the most useful supportive services as collaboration with other organizations, DBE program support, bidding, contract administration, quality assurance and control, and safety. Respondents from DBE firms in engineering rated the most useful supportive services as collaboration with other organizations, accounting, safety, contract administration, and job site management. Respondents from other types of DBE firm rated the most useful supportive services as accounting, software and technology, bonding, project scheduling and cost control, and DBE program support. In addition to temporary support structures, respondents from DBE firms in construction rated the least useful supportive services as one-on-one assistance, business operation and management, investment, and all support services in the engineering category. Respondents from DBE firms in engineering rated the least useful supportive services as design by material types, investment, and business administration. Respondents from other types of DBE firm rated the least useful supportive services as investment, one-on-one assistance, insurance, and business administration.

The Iowa DOT and neighboring state DOTs provide supportive services to their DBE firms to help them improve and expand their business. These services are typically offered for free or at a discounted market price. Table 6 summarizes multiple supportive services offered by Iowa’s neighboring states.

Table 6. Supportive services offered by Iowa’s neighboring states

<table>
<thead>
<tr>
<th>Supportive Services</th>
<th>Small/Inexperienced</th>
<th>Medium</th>
<th>Large/Experienced</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBE Program Introduction</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Technical Training</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Marketing and Networking</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Financial Assistance</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Management Consultation</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Software Seminars</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
These supportive services represent the state of the practice in neighboring states and provide a point of reference for developing supportive services in Iowa. These supportive services include an introduction/orientation to the DBE program, technical training, marketing and networking, financial assistance, management consultation, and software seminars.

**DBE Orientation**

Multiple states offer an orientation to the DBE program, with Illinois being the geographically closest state to Iowa that offers DBE orientation services. DBE orientation provides an overview of the DBE program and guidance for DBEs on taking advantage of the program’s services. This service begins by laying out the details of the program and describing the benefits offered to program members. Specific topics include the DBE certification process, supportive services, business development programs, upcoming events, and bidding assistance. This orientation also gives DOT employees a chance to interact with new DBEs, which is valuable because it is important for DBEs to know which DOT employees can be a resource in the future.

**Workshops**

Workshops are delivered through a variety of methods. However, the most popular is in-person classes, where DBEs have the option to attend classes based on their interests. These classes cover many topics, including technical design, engineering and construction subject matter, financial and accounting advice, basic software training, entrepreneurship guidance, and general business management. Ideally, a DBE would attend all workshops to gain more experience in all areas of work.

In-person assistance is very useful and creates a personal relationship between the facilitator and the DBE. It also gives the DBE a chance to have in-depth conversations and ask questions, unlike typical online classes. However, state DOT employees indicate that workshops typically cover one educational training topic at a time and do not represent a panacea for all issues. Many states have difficulty with low attendance at local workshops. High travel expenses seem to deter many DBEs from attending. Also, these classes do not allow for a flexible schedule because the DOT chooses the dates, not the DBEs. However, many workshops are planned well in advance and are one- or two-day events where many topics are covered, which helps persuade DBEs to attend.

**One-on-One Consulting**

One-on-one consulting is an excellent way for DBE firms to express some of their specific questions and concerns about their projects, their company, or their personal issues. This service provides technical support for the design, engineering, or construction aspects of a transportation project. However, consulting sessions can also be used for help with financial dilemmas. Illinois offers this service for management and technical support, while Minnesota includes assistance with searching for DBE-eligible projects. DBEs can make appointments with the consultants based on their schedules and availability. This service is typically offered for free or at a reduced
market price for DBEs. Typically, these consultants are DOT employees who know and understand the daily work of the DBEs.

**Financial Guidance**

Financial supportive services focus on typical business operations that every company can benefit from, regardless of industry. This service is not meant to act as financial counseling or to make any legally binding recommendations for the DBE; it is instead used to provide DBEs with guidance to make sure that they are on the right financial track. Topics include tax assistance and help navigating legal forms and loans applications. The goal is to help the DBE create a budget for the company and save money on accounting fees.

**Mentor-Protégé Program**

The purpose of the mentor-protégé program is for DBEs to grow their skills through working with experienced firms. Typical partnerships are between a general contractor acting as the mentor and a subcontractor acting as the protégé. DBEs usually are the subcontractor and protégé in this case; however, some experienced DBEs are general contractors and can mentor inexperienced DBEs. After DBEs sign up for the program, DBE administrative staff from the DOT match them with mentor companies. For example, if a DBE firm wants to improve its scheduling skills in Illinois, the firm will be matched with a prime (general) contractor that can help in that area. The contractor will hire the DBE firm to work on a project. The DBE firm will spend approximately 10 days a month in the contractor’s office working directly with experienced staff. Through this process, DBEs learn new methods and software skills, which will help them succeed on their own projects in the future. This relationship lasts approximately the length of one construction project.

There are two main incentives for a mentor company to participate in this program. First, the mentor company would be diversified and stimulated by the protégé. This program shows how businesses sincerely want to help each other succeed. Second, contractors can build a mentor-protégé relationship and train the DBE on the best construction methods, engineering skills, and software skills. This program can help a trustworthy partnership develop between contractors and DBEs for future work. This supportive service appears to be highly praised among DBEs in other states.
DEVELOPMENT AND DELIVERY PROCESS OF SUPPORTIVE SERVICES

Over the past few years, the CMAT program has offered many supportive services to DBE firms. These services include graphic design services for company logos and websites, short-take videos, workshops, networking events, cost-based estimator training, and accounting and financial training. DBEs were notified of offerings through email messages and website postings. These services are offered either through Iowa State University or outside organizations via contracts.

The delivery method for a given supportive service is dependent on the topic. Some commonly used online delivery methods are webinar presentations, short-take videos, and recorded or live workshops and training. Online delivery is best suited for material that is straightforward and does not require much interaction between the presenter and DBE firms. Online delivery can be in the form of either a live broadcast or a recording. A typical real-time live session is less than one hour in duration. Although recordings do not allow interaction between the presenter and DBE firms, it enables participants to watch the recordings at any time and for the viewer to go at his or her own pace, having the ability to start, stop, and rewind the recording. Some commonly used in-person delivery methods are speed-networking events, lunch-and-learn presentations, conferences, and in-person workshops and training. In-person delivery incorporates interactions and exercises into presentations. While some topics may be adequately covered and understood through short lectures, other topics may need to be more interactive and include a combination of lecture and exercises. In-person events are usually held in central Iowa (often at ISU/InTrans facilities) or may be held at different locations around the state. The subsections below provide a sampling of supportive service options.

Sample Networking Events

Associated General Contractors (AGC) of Iowa

Below is the agenda for a networking event held in 2018 with the Associated General Contractors (AGC) of Iowa.

- Schedule: September 6 and 7, 2018
- Thursday, September 6, 2018, 4:30 p.m. to 7:00 p.m.
  - BBQ and Open House at the AGC of Iowa Headquarters, 701 E. Court Avenue, Des Moines, Iowa
  - The president of AGC will introduce DBEs to contractors at 5:00 p.m.
  - Mingle at the BBQ. Strategies include talking to friends and contractors you know at the BBQ (they might help introduce you to others), talking to others about your company (capabilities, projects completed, etc.) and about yourself (to make a personal connection), talking to other people of interest, such as AGC board members, Iowa DOT personnel, and other DBEs. Ask Andy Warren, Hongtao Dang, and Jennifer Shane or your friends to introduce you to others. Make sure to thank the BBQ sponsors: Martin
Marietta, Merchants Bonding Company (Mutual), Jim Hawk Truck Trailer, Inc., and AGC of Iowa.

- Friday, September 7, 2018, 7:45 a.m. to 11:30 a.m. (stay for as long as you wish)
  - 7:45–8:00 a.m. Registration
  - 8:00–9:15 a.m. Breakfast with Iowa DOT; includes Q&A with Director Mark Lowe and Iowa DOT Senior Staff
  - 9:15–10:15 a.m. Presentation by Marina Grabchuk (Immigration Attorney) on Navigating the Fog of Immigration; learn how new immigration and enforcement policies are affecting employers and foreign national workers.
  - 10:20–11:05 a.m. Presentation by Emily Pontius (Attorney) on Hiring and Firing in Today’s Construction Market
  - 11:05–11:30 a.m. AGC Staff update on Workforce Development
  - Networking between DBEs and AGC members throughout the morning
  - Be sure to thank the sponsors: Murphy Tractor & Equipment Company, Inc. and AGC of Iowa

- Summary
  - Emailed instructions for networking events
  - Communicated with two DBEs before networking events
  - Attended networking events and assisted DBEs
  - Two of the six registered DBEs presented at both the Thursday afternoon and Friday morning networking events.
  - The president of AGC of Iowa announced the names of the attending DBEs and their company names in the opening ceremony of the barbeque and open house event. The president introduced the DBEs to the entire group. Then, the DBEs networked with contractors of interest after the opening ceremony.
  - Holly Kluender spoke with more than 10 contractors and introduced her traffic control business to all of them.
  - Krista Thier is well known in the AGC of Iowa community and networked with many contractors during the two days of events.
  - Wrote thank you letters to AGC of Iowa and the DBEs and contractors that attended the networking events

Innovations in Transportation Conference

Below is the invitation for a networking opportunity at the 2018 Innovations in Transportation Conference.

- Schedule: Tuesday and Wednesday, October 9 and 10, 2018
- Location: Scheman Building, Iowa State University, 1805 Center Drive, Ames, Iowa
- Description: Learn about the future of transportation and current practical applications at the Innovations in Transportation Conference, October 9–10, 2018 in Ames, Iowa. The day-and-
a-half meeting, hosted by the Iowa DOT and InTrans, is for transportation professionals working in local and state agencies, academia, and business and industry.

GovCon Networking Group (Business Builders)

Below is the invitation for a series of networking events held in 2018 with the Government Contracting Networking Group.

- Schedule
  - A: Tuesday, August 14, 2018. 7:30–8:30 a.m.
  - B: Tuesday, August 21, 2018. 7:30–8:30 a.m.
  - C: Tuesday, August 28, 2018. 7:30–8:30 a.m.
- Location: Council Bluffs, Iowa
- Cost: Free
- Description: The Government Contracting Networking Group provides peer discussion related to government and commercial procurements in any industry. The local Iowa State University Center for Industrial Research and Service facilitates discussion of trends in the government market and building your network of Iowa business partners and government agencies.

Cost-Based Estimator Training

A nationally recognized trainer on cost estimating was brought in on two separate occasions to work with DBEs. The trainer offered a one-day class each time and was available for DBEs to contact with additional questions. These services were offered free of charge to DBEs.

Agenda and Workshop Materials

- Cost Estimating Training Schedule
  - 8:30–9:00 a.m. Sign in and Receive Materials
  - 9:00–9:10 a.m. Introductions, Facilities, Safety Minutes (Building Exits)
  - 9:10–10:15 a.m. General Principles (Handout on Cost-Based Estimating)
  - 10:15–10:30 a.m. Break
  - 10:30 a.m.–Noon. General Principles and Begin Towlston GRS-IRS Estimate
  - Noon–1:00 p.m. Team Development of the Towlston GRS-IBS Estimate
  - 1:00–2:15 p.m. Discussion of the Towlston GRS-IBS Estimate Development
  - 2:15–2:30 p.m. Break
  - 2:30–3:30 p.m. Discussion of Created Estimates and Project Risk
  - 3:30–4:00 p.m. Commercially Available Estimating Packages, with Aaron Cohen, Product Manager, INEIGHT
- Provided Cost Estimating Materials
  - Seven-page handout for Bridge Replacement on Towlston Road over Rocky Run
  - Twenty-page handout of Excel for Towlston Road Cost Estimate
• Approximately 92-page handout for Cost-Based Estimates
• Approximately 42-page written document for Transportation Project Estimating
• Approximately 10-page RSMeans cost data document
• One-page LB Foster Piling for Z Pile Profile
• One-page Curtis Contracting Inc. RT. 460 IVOR Facility Prices
• Three of forty-two pages of selective Statewide Averages Cost Data between May 1, 2014 and May 1, 2016
• One-page Labor Rates in Virginia
• VDOT 18-page construction drawings on proposed bridge replacement on Rte. 676 (Towlston Road) over Rocky Run in Fairfax County
• Electronic files
  • Excel for cost estimates
  • PDF for Proposed Bridge Replacement
  • Others sent upon request

*First Offering, May 19, 2017*

• Signed up DBEs: 9
• Signed up non-DBEs to provide networking opportunities: 6

*Second Offering, November 12, 2018 (Offered Based on Informal Feedback by a TAC Member)*

• Signed up DBEs: 15
• DBE attendance: 8

**Training Videos: Accounting and Financial Training**

The aim of the DBE supportive services program is to provide training on a variety of topics. This training may be in-person or through the Training Video Series. CMAT leaders try to select the mode of delivery (either in-person or via recorded video) that best suits the topic. The recordings in the Training Video Series are often 20 to 40 minutes in length, and each training set may include multiple videos for a specific topic.

https://cmat.intrans.iastate.edu/dbe-support-services/training-video-series/

1. Introduction
2. Construction Accounting and Financial Management, Part A
3. Construction Accounting and Financial Management, Part B
5. Project Accounting and Cost Control, Part A
6. Project Accounting and Cost Control, Part B
7. Project Accounting and Cost Control, Part C
8. Cash Flows and Financing, Part A
This “5 Minutes” Series feature a series of short recordings. The purpose of the recordings is to capture information that will answer important questions regarding the DBE program, DBE services, Iowa DOT contracts, and other issues that may be important for DBE firms or other firms working with DBEs.

The objectives of the short-take videos are as follows:

- Provide information accessible via the DBE supportive services website
- Provide information and additional resources for DBE firms and firms working with DBEs
- Provide information in concise segments so viewers do not have to wade through extraneous information to get the information they are interested in

Examples of short-take videos are described below.

**Short-Take Video – How to Become a Certified DBE**

- Published Date: January 8, 2018
- Link: [https://www.youtube.com/watch?v=GrmwhPy5lo&t=2s](https://www.youtube.com/watch?v=GrmwhPy5lo&t=2s)
- Views: 150 as of May 15, 2020
- Prompt Questions:
  - What are the necessary qualifications?
  - Does my firm have to be located in Iowa to be certified in Iowa?
  - My firm is large; can I still be a DBE?
  - What is the process to become a certified DBE?
  - Does the application process involve a site visit?
  - Where can I go for additional information?

**Short-Take Video – How to Stay as a Certified DBE**

- Published Date: February 26, 2018
- Link: [https://www.youtube.com/watch?v=H6fn4RpW3mk](https://www.youtube.com/watch?v=H6fn4RpW3mk)
- Views: 58 as of May 15, 2020
- Prompt Questions:
  - Are there limits or caps that a certified DBE cannot exceed?
  - Is there an annual review, and what does it entail?
  - What standards must be met while doing work on an Iowa DOT project as a DBE?
**Short-Take Video – How to Bid on Iowa DOT Projects**

- Published Date: June 28, 2018
- Link: [https://www.youtube.com/watch?v=KFEcAp0gp84&t=208s](https://www.youtube.com/watch?v=KFEcAp0gp84&t=208s)
- Views: 61 as of May 15, 2020
- Prompt Questions:
  - Where do I find work as a newly certified DBE?
  - How to bid on Iowa DOT projects?
  - How do I use BidExpress?

**Short-Take Video – Introduction to Surety Bonds**

- Published Date: November 29, 2018
- Link: [https://www.youtube.com/watch?v=z_GVGB856JM](https://www.youtube.com/watch?v=z_GVGB856JM)
- Views: 199 as of May 15, 2020
- Prompt Questions:
  - What are surety bonds?
  - How do I get a surety bond?
  - What do surety bonds cost?
  - What do I do if I have less than three years of unsuccessful business history?
  - Where do I find useful resources for DBEs?

**Sample Workshop Offerings**

**Otta Seal Surfacing Workshop**

Below is the invitation for a workshop on Otta seal surfacing.

- Schedule: Friday, September 14, 2018, 8:30 a.m.–3:00 p.m.
- Location: Institute for Transportation, 2711 South Loop Drive Suite 4700, Ames, Iowa
- Cost: Free
- Description: Otta seal is a thin layer of graded and bituminous surface treated aggregate. This layer ranges from 0.6 to 1.2 inches thick and has both “mechanical interlock” and “bitumen binding” to carry traffic loads. This workshop presents an overview of bituminous surfacing for low-volume roads; Otta seal design, construction, and performance in Iowa; quality assurance during construction of Otta seal; Otta seal experience in Minnesota; and open discussion on successful implementation of Otta seal in Iowa.

**Creating and Designing Marketing Materials**

Below is the invitation for a workshop on creating and designing marketing materials.
• Schedule: Wednesday, September 19, 2018, 1:00–3:00 p.m.
• Location: Urbandale Training Center, 8020 Douglas Avenue, Urbandale, Iowa
• Cost: Free
• Description: This training workshop introduces many tools for creating marketing pieces.

Innovations in Transportation Conference

Below is the invitation for the 2018 Innovations in Transportation Conference.

• Schedule: Tuesday and Wednesday, October 9 and 10, 2018
• Location: Scheman Building, Iowa State University, 1805 Center Drive, Ames, Iowa
• Cost: $275.00 (before September 26, 2018) and $325 (after September 26, 2018)
• Description: Learn about the future of transportation and current practical applications at the Innovations in Transportation Conference, October 9–10, 2018 in Ames, Iowa. The day-and-a-half meeting, hosted by the Iowa DOT and InTrans at Iowa State University, is designed for transportation professionals working in local and state agencies, academia, and business and industry.

Pavement Preservation Tools Workshop

Below is the invitation for a workshop on pavement preservation tools.

• Schedule: Wednesday, October 10, 2018. 12:00–4:00 p.m. (Lunch)
• Location: Scheman Building, Iowa State University, 1805 Center Drive, Ames, Iowa
• Cost: $50
• Description: This workshop will discuss pavement assessment applications and pavement preservation tools. The workshop consists of presentations on high-performance overlays, concrete pavement innovations, the effectiveness of pavement preservation in Iowa, and holding strategies for pavement preservation.

Fracture Critical Inspection Techniques for Steel Bridges

Below is the invitation for a workshop on fracture critical inspection techniques for steel bridges.

• Schedule: October 23–26, 2018 (3½ days)
• Location: Institute for Transportation, 2711 S. Loop Dr. Suite 4700, Ames, Iowa
• Prerequisite: Safety Inspection of In-Service Bridges (National Highway Institute course 130055) or equivalent field experience relative to bridges, or thorough understanding of bridge mechanics and bridge safe-inspection procedures.
• Description: The course presents current bridge inspection practices along with new and emerging technologies available to bridge inspectors. The course features excellent training, hands-on workshops for popular types of nondestructive evaluation (NDE) equipment, and a case study of an inspection plan for a fracture-critical bridge. The first day of the training
focuses on the concept of fracture critical members (FCMs), FCM identification, failure mechanics, fatigue in metal, and an overview of NDE methods. Day two includes demonstration sessions and hands-on applications of NDE techniques for dye penetrant, magnetic particle testing, eddy current testing, and ultrasonic testing. Days three and four emphasize inspection procedures and reporting for common FCMs, including problematic details, I-girders, floor beams, trusses, box girders, pin and hanger assemblies, arch ties, eye-bars, and cross girders/pier caps. The course will conclude with a case study detailing the preparation of an inspection plan of a fracture-critical bridge. Additionally, the course instructors will tailor discussions of topics based on state needs and requirements.

Examples of Additional Resources Provided to DBE Firms

Many DBE supportive service programs provide online videos for DBE firms. The CMAT team synthesized available videos and created playlists as additional resources for DBE firms. Two playlists are presented below.

Hour-Long DBE Training (13 Videos)

- ODOT DBE Flagging Class, Part 1
- ODOT DBE Flagging Class, Part 2
- VDOT Flagger Training
- Federal Taxes
- Bonding
- Project Management
- Accounting and Cash Flow
- OSHA 1 of 2
- OSHA 2 of 2
- Human Resource Essentials
- DBE Certification Application
- Short Term Loans and Lines of Credit
- Business Plan Development

DBE Program Introduction (5 Videos)

- DOT’s Disadvantaged Business Program
- Disadvantaged Business Enterprise (DBE) Certification and Inclusion
- Small Disadvantaged Business Program: What You Need to Know
- Disadvantaged Business Enterprise: Owners Offer Their Insights
- DBE Certification Application
CONCLUSIONS

The work uncovered DBE characteristics nationwide and in Iowa, revealed challenges in offering DBE supportive services, and identified useful supportive services for DBE firms. In summary, the DBE supportive services program offered by CMAT provides a wide range of supportive services in various formats such as networking events, workshops, and training.

Information about supportive services is available on the Iowa DOT website and is periodically distributed to DBEs via emails.
REFERENCES


THE INSTITUTE FOR TRANSPORTATION IS THE FOCAL POINT FOR TRANSPORTATION AT IOWA STATE UNIVERSITY.

\textbf{InTrans} centers and programs perform transportation research and provide technology transfer services for government agencies and private companies;

\textbf{InTrans} contributes to Iowa State University and the College of Engineering's educational programs for transportation students and provides K–12 outreach; and

\textbf{InTrans} conducts local, regional, and national transportation services and continuing education programs.

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