

Impact of the DBE Program on Indiana Highway Construction

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The Disadvantaged Business Enterprise (DBE) program has been a controversial and fiercely debated topic since the January 1983 passage of the Surface Transportation Assistance Act. Strong opinions on this subject, combined with a shortage of relevant data, have increased the program's vulnerability to criticism. A quantitative view of the impact of the current DBE program is provided to help give an understanding of the program's strong points and weaknesses. In addition, results of a study conducted at the Indiana Department of Highways (IDOH) are presented. The study demonstrates that the IDOH DBE program has increased minority participation in the Indiana highway construction industry in terms of dollar volume and that the number and dollar volume of DBE subcontract awards have been reasonably distributed throughout the six Indiana districts. Also, DBE firms are being awarded an increasing number of large contracts each year, and repeat award-winning DBE firms in Indiana have consistently been awarded the majority of DBE dollars. A large percentage of the minority work in Indiana is being performed by a small group of DBE contractors, and a majority of the work performed by DBEs in Indiana is in low-capital, intensive specialty areas.

In the years since the passage of the Surface Transportation Assistance Act of 1982 and the implementation of the Disadvantaged Business Enterprise (DBE) program, the DBE program has become a highly controversial and political topic throughout the United States. Contractor organizations have debated fiercely with FHWA about the effects of the program on the nation's highway construction programs. To address this issue, a study was conducted in Indiana for the Indiana Department of Highways (IDOH). The intent of the study was not to take any one side in the debate but instead to examine IDOH fiscal data and use them to evaluate the impact of the current DBE program. It was hoped that an understanding of both the strong points and the weaknesses of the program would be gained through this procedure.

The purpose of this paper is to report the study results and present the methods used for assessing the impact of the DBE program on the Indiana highway construction industry. It has become evident that the DBE program is going to be a part of the highway construction industry for the next several years. It is time for all parties involved to recognize this fact and try to execute the DBE programs in the best manner possible.

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BACKGROUND

On January 6, 1983, President Ronald Reagan signed into law the Surface Transportation Assistance Act (STAA) of 1982. Section 105(f) of the STAA stated that

... except to the extent that the Secretary determines otherwise, not less than 10 percentum 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 as defined by Section 8(d) of the Small Business Act and relevant subcontracting regulations promulgated pursuant thereto.

The small business concerns mentioned in the act are more commonly referred to as Disadvantaged Business Enterprises, or DBEs, and the program assembled by the Federal Highway Administration (FHWA) to fulfill the requirements of section 105(f) has become known as the DBE program.

The DBE program was announced on February 18, 1983, in a memorandum from FHWA to the FHWA Regional Administrators. Rules and regulations for implementing the individual DBE programs were published in July 1983 and became effective on August 22, 1983. Thus the first full fiscal year of program implementation in Indiana under these regulations was fiscal year (FY) 1984 (October 1983 to September 1984).

Since the passage of the STAA, each state has established its own goals for DBE participation. In FY 1986, five states had received approval of goals less than 10 percent, and four states submitted goals greater than 10 percent. All other states followed the 10 percent goal (1).

After a goal has been set by a state, it is the state's responsibility to meet or exceed this goal by implementing its own DBE program within the guidelines issued by FHWA. This means that the overall federal DBE program is actually a combination of 52 separate programs that are operated by the states plus the District of Columbia and the Commonwealth of Puerto Rico. Each of these jurisdictions is responsible for most of the important dimensions of the program, including certification processes, prequalification and licensing procedures, project monitoring, and enforcement of regulations.

Although each state has a considerable amount of independence in establishing its own DBE program, there are some specific regulations developed by the U.S. Department of Transportation that must be followed when a state is determining the eligibility of a firm to participate (2). For a firm to be recognized as a legitimate DBE, it must meet three basic qualifications:

- It must be owned and controlled by individuals who are socially disadvantaged.
- It must be owned and controlled by individuals who are economically disadvantaged.
- It must be a small business, as defined by Section 3 of the Small Business Act.

Usually, an individual's racial or ethnic heritage is the key to meeting the socially or economically disadvantaged qualification. By law, members of the following groups automatically have such eligibility if they are proven to be economically disadvantaged:

- Black Americans,
- Hispanic Americans (Mexicans, Puerto Ricans, Cubans, Central or South Americans, or others of Spanish culture),
- Native Americans (American Indian, Eskimos, Aleuts, and native Hawaiians),
- Asian Pacific Americans (Japanese, Chinese, Taiwanese, Koreans, Vietnamese, Laotians, Cambodians, Filipinos, Samoans, Guamanians, Northern Marianans, and individuals from the U.S. Trust Territory of the Pacific Islands), and
- Asian Indian Americans (individuals from India, Pakistan, and Bangladesh).

In addition, recent legislative amendments specify that women are also to be considered socially disadvantaged individuals (3).

The definition of a small business varies according to the type of business, such as general contractor, consultant, vendor, or supplier. Each business category is measured by different criteria, such as dollar receipts or number of employees. Generally, a company would be eligible for certification as a DBE if it meets the following standards:

- For subcontracts of \$10,000 or less, a company is determined to be small if it does not have more than 500 employees, including employees at all affiliates.
- For subcontracts of \$10,000 or more and for all prime contracts, a firm is classified as small under the following circumstances:
 - For general construction work, if the firm's average receipts have not exceeded \$14 million over the previous three fiscal years;
 - For special trade construction work, if the firm's average receipts have not exceeded \$5 million dollars for each of the last 3 years;
 - For manufacturing plants and suppliers, a firm must have no more than 500 employees, including all affiliates;
 - For all other contractor categories (such as architects, engineers, janitorial firms, etc.), details on size limitations are specified by the Small Business Administration.

In addition to meeting these qualifications, a firm must also be certified. To become a certified DBE firm, at least 51 percent of the business must actually and legally be owned by a socially and economically disadvantaged individual or individuals. Finally, the active management and daily operations of the firm must be controlled by one or more of those individuals.

As stated previously, these are the specific guidelines set by the U.S. Department of Transportation. It is the responsi-

bility of each individual state to follow these guidelines in developing or amending its own DBE programs.

DATA AND ANALYSES

The increase in DBE participation in response to the STAA is the key measure of the short-term effectiveness and impact of the program. The results presented here are from an analysis that focused on the impact of DBE participation during FY 1983–FY 1986 in Indiana. The changes during this time in the type of work performed by DBEs are also examined, in terms of both contract size and function. Readers should be advised that the dollar amounts described throughout this paper are real value. Inflation was low during FY 1983–FY 1986, and its impact was therefore minimal. It is the changes in the parameters and their combinations that permit an assessment of the full short-term impact of Section 105(f).

Are DBEs becoming more involved in heavy highway and bridge construction, or has their apparent increase in participation been confined to the less capital-intensive specialty areas? Are their average contract sizes growing, indicating an ability to perform and manage larger jobs? Are certain areas of the state being used to meet the majority of the 10 percent minority goal? These were the sort of questions that this study was intended to answer.

OVERALL DBE PARTICIPATION IN INDIANA

Table 1 presents the number of DBE subcontract awards from FY 1983 through FY 1986. In the first fiscal year of the current program, 221 subcontracts to DBEs were approved. It should be recalled that the DBE program was not formally implemented until June 1983; therefore these 221 contracts were approved in a span of only 4 months (June to September).

In FY 1984, 657 subcontracts to DBEs were approved. This was the largest number of subcontracts approved in the 4 years analyzed, and it represented an increase over the previous fiscal year. In FY 1985, the number of subcontracts approved to DBEs decreased 10 percent, from 657 to 591, and in FY 1986, the number again increased, to 624 subcontracts—a 6 percent increase.

Although the number of DBE subcontract awards has fluctuated since the program's first year, the dollar volume of these same awards has steadily increased over the same period (Table 1). In FY 1983, DBE subcontracts totaled \$5,805,000. This represented a 178 percent increase in DBE participation over FY 1982, which was the last full fiscal year before the program's implementation. In FY 1984, which was the first

TABLE 1 NUMBER AND DOLLAR VOLUME OF DBE SUBCONTRACTS

Fiscal Year	Number of Awards	Volume (\$)
1983	221	5,805,000
1984	657	24,820,000
1985	591	27,382,000
1986	624	28,853,000

full fiscal year of the program, the dollar volume of DBE subcontracts rose by a dramatic 328 percent to \$24,820,000. The next year (FY 1985) the total value of DBE subcontract awards again rose, this time by 10 percent, to \$27,382,000. In FY 1986 this figure was increased by another 5 percent to \$28,853,000.

In terms of increasing minority participation in the highway construction industry, there is no doubt that the DBE program in Indiana has had an impact. In FY 1982, the total value of DBE subcontracts was \$2,086,859; by FY 1986, this number had risen to \$28,853,000. Although the amount of Federal Aid highway dollars available to states during this time had also increased, the tremendous rise in DBE dollars is primarily due to the implementation of the DBE program.

DBE SUBCONTRACT DISTRIBUTION BY INDIANA DISTRICT

This portion of the analysis had three objectives. The first was to determine whether any specific location in the state was receiving a disproportionate amount of DBE subcontract awards. The second was to calculate the actual dollar volume of the subcontracts for each district and compare it with the number of awards for that district. This information was then used to satisfy the third objective, which was to compute the average subcontract size for each of the six districts for FY 1983–FY 1986. Table 2 summarizes the information from this analysis.

As may be observed in Table 2, the distribution of DBE subcontract awards throughout the districts in the state has been relatively uniform, except for one particular district. This is the Greenfield district (including Indianapolis), which over the past 3 fiscal years has received from 5 to 10 percent more DBE awards than the next closest district.

In general, however, the IDOH DBE program has been distributing the DBE subcontracts quite evenly throughout

TABLE 3 AVERAGE DBE AWARD BY DISTRICT

District	Average Award (\$)			
	FY 1983	FY 1984	FY 1985	FY 1986
Crawfordsville	18,700	44,000	51,400	48,300
Fort Wayne	28,500	34,400	54,100	53,800
Greenfield	30,900	42,000	43,700	34,500
LaPorte	25,800	50,900	49,900	85,700
Seymour	21,200	25,600	33,100	24,800
Vincennes	32,900	22,900	48,800	48,600

the state. This point is also made evident in Table 2 by the distribution of the dollar volume of these subcontracted awards throughout the six districts in Indiana. Although the Greenfield district still has higher percentages of DBE dollars, the percentages are much closer to those of the other five districts. The only district that consistently had a low percentage of DBE subcontract dollars was the Seymour district, which has never had more than 10 percent of the total DBE subcontract dollar volume.

Table 3 presents the average of DBE subcontract size for each district for the same period. During the 4 years analyzed, the LaPorte district had the largest average subcontracts for 2 years. In fact, in FY 1986, the average subcontract size in the LaPorte district was almost 60 percent larger than in the next nearest district. In general, however, the fluctuation in average contract size for every district was substantial, which indicates that no district in particular has received inordinately large subcontracts.

DBE PARTICIPATION BY CONTRACT SIZE

Table 4 lists DBE participation by subcontract size in each of 10 different contract size categories. The average DBE subcontract size for each fiscal year and the percentage increase or decrease from the previous fiscal year were as follows:

TABLE 2 DISTRIBUTION OF SUBCONTRACT AWARDS AND DOLLAR VOLUME BY DISTRICT

District	Subcontract Awards								Dollar Volume \$(000's)							
	FY83		FY84		FY85		FY86		FY83		FY84		FY85		FY86	
	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#
Crawfordsville	21.7	48	16.7	110	17.9	106	17.0	106	15.5	898	19.5	4842	19.9	5453	17.8	5124
Fort Wayne	22.6	50	14.6	96	12.4	73	15.2	95	24.6	1426	13.3	3306	14.4	3947	17.7	5110
Greenfield	18.6	41	22.8	150	29.6	175	26.8	167	21.8	1268	25.4	6293	27.9	7649	20.0	5763
LaPorte	12.2	27	17.7	116	12.2	72	10.4	65	12.0	696	23.8	5905	13.1	3590	19.3	5573
Seymour	11.3	25	13.4	88	14.0	83	13.5	84	9.1	529	9.1	2250	10.0	2744	7.2	2082
Vincennes	13.6	30	14.8	97	13.9	82	17.1	107	17.0	988	9.0	2224	14.6	3999	18.0	5201
Totals	100	221	100	657	100	591	100	624	100	5805	100	24820	100	27382	100	28853

TABLE 4 DBE PARTICIPATION BY CONTRACT SIZE, FY 1983-FY 1986

Subcontract Size	FY 83				FY 84				FY 85				FY 86			
	#	%	Value (000's)	%	#	%	Value (000's)	%	#	%	Value (000's)	%	#	%	Value (000's)	%
>\$1,000,000	0	0	0	0	0	0	0	0	1	0.2	1050	3.8	0	0	0	0
750000-999999	0	0	0	0	1	0.2	965	3.9	0	0	0	0	1	0.2	852	2.9
500000-749999	0	0	0	0	3	0.5	1814	7.5	2	0.3	1286	4.7	4	0.6	2336	8.1
250000-499999	0	0	0	0	7	1.1	2270	9.0	16	2.7	5112	18.7	12	1.9	4064	14.1
100000-249999	13	5.9	1751	30.2	39	5.9	5506	22.2	46	7.8	6616	24.2	48	7.7	7756	26.9
150000-99999	17	7.7	1103	19.0	85	12.9	6118	24.6	84	14.2	6048	22.1	84	13.5	6118	21.2
25000-49999	39	17.7	1340	23.1	108	16.4	3713	15.0	95	16.1	3453	12.6	118	18.9	4187	14.5
10000-24999	67	30.3	1151	19.8	192	29.2	3371	13.6	173	29.3	2982	10.9	153	24.5	2539	8.8
5000-9999	33	14.9	300	5.2	101	15.4	705	2.8	74	12.5	526	1.9	98	15.7	667	2.3
<\$5000	52	23.5	160	2.8	121	18.4	358	1.4	100	16.9	309	1.1	106	17.0	334	1.2
Totals	221	100.0	5805	100.0	657	100.0	24820	100.0	591	100.0	27382	100.0	624	100.0	28853	100.0

	Average Contract Size (\$)	Increase/Decrease from Previous Year (%)
FY 1983	26,300	—
FY 1984	37,800	+43.7
FY 1985	46,300	+22.5
FY 1986	46,200	-0.2

If this information is examined alone, it suggests that DBEs have been taking on larger jobs because the average subcontract size has grown significantly since 1983. Nevertheless, further analysis of the data presented in Table 4 reveals that in each of the past 4 fiscal years, between 57 and 69 percent of all DBE subcontract awards were less than \$25,000. This fact suggests that the majority of DBE subcontracts are still small, and that in general, DBEs do not have the ability to obtain and manage larger jobs. In the first year of the DBE program, there were no approved DBE subcontracts over \$250,000. In FY 1986, there were 17. It is more important, however, to note that this figure represented 25 percent of all DBE subcontracted work for that year. This demonstrates that well-established DBEs are benefiting from the program and are beginning to undertake larger contracts.

Although an examination of the total subcontracts approved is interesting, it tends to understate the gains made by some of the more well-established minority firms. Much of the increase in DBE participation has come from new and relatively small firms that are not capable of performing and managing a large contract. This condition does not hold, however, for all DBEs in the program. Some of these companies have grown rapidly and are successfully undertaking larger projects. This growth and development was one of the objectives of the DBE program, and the data presented in this section suggest that this objective might have been met.

In summary, the average size of the DBE subcontract award has increased since FY 1983. Although a large percentage of these awards are less than this average figure, the

increase in larger awards and the continued decrease in awards of less than \$25,000 suggest growth in the capacity of the average DBE firm in Indiana.

DBE SUBCONTRACTS DISTRIBUTION BY CONTRACTOR

The data presented in the previous section indicated that some minority firms have grown substantially since the DBE program was implemented. These firms have experienced a dramatic increase in their annual volume of work and are continually being awarded larger contracts. Although one objective of the program was to develop DBEs into large contracting firms, a major concern throughout the country has been that the major DBE firms will become so large that in some states they will be used almost exclusively to meet the 10 percent minority goal. Opponents of the DBE program add that several minority firms across the country are getting rich, whereas the majority of DBEs are struggling to survive. Since the DBE program became fully operational in 1983, there have been at any one time some 100 firms certified by IDOH to do work on federally funded highway projects. The number of certified firms has gone above and below 100, but on average the figure has remained at or near this level. This number also includes Indiana-certified DBEs and minority firms from other states.

Table 5 gives the percentage of DBE subcontract work performed by various numbers of minority contractors in Indiana, FY 1983 to FY 1986. The data presented in this table definitely support the claim that a small percentage of DBE firms are performing most of the minority work in the state. For example, in each of the four fiscal years analyzed, 30 percent of the total DBE subcontract volume was performed by 3 minority contractors. In fact, in FY 1985, this number reached 40 percent.

TABLE 5 DBE SUBCONTRACT DISTRIBUTION BY CONTRACTOR

Number of Contractors (Cum.)	FY83		FY84		FY85		FY86	
	* %	\$(000's)	* %	\$(000's)	* %	\$(000's)	* %	\$(000's)
3	29.5	1712	32.3	8010	39.9	10920	32.2	9303
5	41.8	2428	44.7	11085	57.7	15806	42.3	12214
10	63.4	3681	67.2	16682	77.5	21223	60.4	17426
15	76.9	4462	77.8	19322	88.1	24126	76.2	20835
20	87.0	5053	83.8	20788	93.6	25630	79.6	22960
25	93.8	5445	88.2	21901	96.7	26482	83.6	24116
35	98.5	5717	94.0	23329	99.7	27303	89.1	25715
50	100.0	5805	98.0	24319	100.0	27382	93.3	26925

* Percentages and Dollar Amounts Shown are Cumulative

Closer examination of Table 5 reveals that the top 5 minority contractors have performed more than 40 percent of the DBE subcontract volume for the past 4 years, and the top 10 have performed more than 60 percent. This means that of all the DBE-approved subcontract work, considerably more than 60 percent of it has gone to 10 percent of the eligible firms. Further analysis of the information presented in Table 5 reveals that since FY 1983, 90 percent of the dollar volume of DBE subcontracts has been performed by 35 or fewer minority firms. Of this volume of work, 80 percent has been performed by 20 or fewer firms.

As mentioned previously, much of the increase in Indiana DBE participation has come from small firms that are incapable of handling larger projects. Perhaps these firms would have been able to develop and take on larger contracts if it were not for the dominance of the larger DBE firms. It appears that the existence of these large firms can make it difficult for companies that are younger and smaller (or both) to be competitive. It is important that DBEs develop and grow into successful contracting firms, but it is equally important that all minority firms have the same opportunities to grow. This does not appear to be the current situation, given that a few firms can control such a large percentage of the work. It is obvious that the DBE program has been of help to several minority firms in Indiana, but the program has met a large percentage of its goal through a rather small number of successful firms.

DBE REPEAT AWARD WINNERS

One indicator of the stability of DBE firms and markets is the degree to which DBE firms that won awards in an early fiscal year continue to win awards in later fiscal years. Another good indicator of a program that is stimulating increased participation is the degree to which increased numbers of DBE firms are being awarded contracts each year. Also of interest are the average number of subcontracts per firm and the average dollar volume per firm on an annual basis. These indi-

cators, for all approved DBE subcontracts from FY 1983 to FY 1986, are given in Table 6.

The number of approved DBE subcontracts fluctuated considerably over the past 4 fiscal years. In FY 1983, 42 minority firms were awarded subcontracts, which averaged out to 5.3 subcontracts per firm. In FY 1984, 67 DBE firms were awarded subcontracts. On the average, each firm therefore received 9.8 awards. This dramatic increase occurred partially because FY 1983 was not a complete program year. In FY 1985, the number of DBE firms that received subcontracts dropped by 30 percent, to 47 firms. This decrease was probably due, at least in part, to the 10-percent decrease in number of DBE subcontract awards for that year. Although the number of firms that received awards dropped in FY 1985, the average number of awards per firm increased by nearly 29 percent, to 12.6 awards per firm. In FY 1986, 60 DBE firms were awarded subcontracts, representing a 28-percent increase over the previous year. However, the increased number of award-winning firms also decreased the average number of awards per firm by 17 percent, to 10.4 awards per firm.

The best indication of the stability of a DBE firm is probably its ability to win awards year after year. Although there is variation between states, the general logic is that states and general contractors cannot and usually will not make awards to firms that have previously proved to be incapable of performing the desired work. Firms that win highway awards for successive years are considered to be more qualified than firms that do not, and usually these firms perform a large percentage of the minority work done in the state. Table 6 presents the number and dollar volume of subcontract awards received by firms that won awards in any of the four fiscal years analyzed (FY 1983 to FY 1986). In FY 1983, 19 of the 42 award-winning firms (45 percent) also won awards in FY 1984, 1985, and 1986.

The significance of these data is that these 19 firms accounted for 67, 66, 65, and 52 percent of the total DBE subcontract work over the next 4 fiscal years. Also, the awards to these repeating firms increased in size during subsequent year. For

TABLE 6 DBE REPEAT AWARD WINNERS, FY 1983-FY 1986

Firms Winning D.B.E. Awards in:	FY 83				FY 84				FY 85				FY 86			
	No.	%	\$(000's)	%	No.	%	\$(000's)	%	No.	%	\$(000's)	%	No.	%	\$(000's)	%
FY 83, 84, 85, 86	19	45.2	3908	28.4	19	28.4	16437	66.2	19	40.4	17815	65.1	19	31.7	15121	52.4
FY 83, 84, 85	3	7.1	561	9.7	3	4.5	478	1.9	3	6.4	470	1.7	0	0	0	0
FY 84, 85, 86	0	0	0	0	9	13.4	3325	13.4	9	13.4	4225	15.4	9	15.0	3433	11.9
FY 83, 84, 86	3	7.1	259	4.5	3	4.5	691	2.8	0	0	0	0	3	5.0	900	3.1
FY 83, 85, 86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY 83, 84	1	26.2	926	16.0	11	16.4	2183	8.8	0	0	0	0	0	0	0	0
FY 83, 85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FY 83, 86	1	2.4	30	0.5	0	0	0	0	0	0	0	0	1	1.7	105	0.4
FY 84, 85	0	0	0	0	3	4.5	369	2.6	3	6.4	639	2.3	0	0	0	0
FY 84, 86	0	0	0	0	1	1.5	29	0.1	0	0	0	0	1	1.7	39	0.1
FY 85, 86	0	0	0	0	0	0	0	0	8	17.0	3994	14.6	8	13.3	5547	19.2
FY 83 only	5	11.9	121	2.1	0	0	0	0	0	0	0	0	0	0	0	0
FY 84 only	0	0	0	0	18	26.9	1038	4.2	0	0	0	0	0	0	0	0
FY 85 only	0	0	0	0	0	0	0	0	5	10.6	239	0.9	0	0	0	0
FY 86 only	0	0	0	0	0	0	0	0	0	0	0	0	19	31.7	3708	12.9
Totals	42	100.0	5805	100.0	67	100.0	24820	100.0	47	100.0	27382	100.0	60	100.0	28853	100.0

example, firms that won awards in all 4 successive fiscal years averaged \$206,000 per firm in FY 1983, \$865,000 per firm in FY 1984, and \$938,000 per firm in FY 1985. However, this figure did decrease to \$796,000 per firm in FY 1986. The decrease in dollar volume per firm in FY 1986 was largely due to the increases in dollar volume experienced by repeating firms that began business in FY 1985.

The information presented in Table 6 clearly demonstrates that in Indiana, repeat award-winning DBE firms are doing nearly all the minority work. Firms that have only existed for 1 year have never done more than 4.2 percent of the total volume of subcontract work for a year. This analysis excludes FY 1986 because it is almost certain that many of the firms in this subgroup will receive awards in future years.

These data indicate that the positive impact of the DBE requirement on DBEs can be measured by factors other than the impressive growth in the number of DBE awards and volume of highway construction dollars going to DBEs that participate in the program. The data suggest that, in general, the majority of DBE firms that win awards in one fiscal year are likely to win awards in future years.

DBE SUBCONTRACT DISTRIBUTION BY TYPE OF WORK

One of the strongest complaints registered against the DBE program is that DBE firms are only entering into specialty trades that are not capital intensive. It has also been claimed that these firms are not growing and are subsequently not

taking on any other type of highway work. Because the objective of the DBE program is to develop these DBE firms into successful highway contractors, this is a serious claim.

The specialty trade most frequently mentioned in discussions of new DBE entrants is guardrails. If the data presented in Table 7 are reviewed, it is obvious that this is a valid complaint in Indiana. In every fiscal year since the DBE program was implemented, more than 15 percent of all work subcontracted to minority firms has been for guardrails. In the past 2 fiscal years, this figure has grown to more than 20 percent.

The dollar volume of these awards has increased significantly over this period as well. Table 7 gives the percentage increase or decrease in the dollar volume of awards of each of the 17 categories. From FY 1983 to FY 1984, the dollar volume of guardrail awards increased by more than 40 percent. It is clear that most of this increase was due to the large increase in total dollars awarded to DBEs, but this is still a significant increase. From FY 1984 to FY 1985, the dollar volume again increased by 36 percent, and from FY 1985 to FY 1986, the volume essentially leveled off and increased by less than 1 percent. An interesting note about the volume of guardrail work is that it has increased every year since the program's inception. Further examination of Table 7 reveals that most categories of work have experienced a decline in volume at one time or another. This is not the case in the guardrail area, indicating that this is a popular task among DBE firms in Indiana.

Another common specialty performed by the minority firms is miscellaneous concrete and concrete finishing, which consists of curb and gutter work, sidewalks, slope and head-

TABLE 7 DBE SUBCONTRACT AWARDS DISTRIBUTION AND CHANGES IN DOLLAR VOLUME BY TYPE OF WORK

Type of Work	Subcontract Award Number & Dollar Volume								% Change in \$ Volume		
	FY 83		FY 84		FY 85		FY 86		FY 83-84	FY 84-85	FY 85-86
	%	\$(1,000)	%	\$(1,000)	%	\$(1,000)	%	\$(1,000)			
Guardrail	14.5	840	17.2	4261	21.1	5777	20.1	5798	407.3	35.6	0.4
Misc. Conc. & Conc. Fin. Constr. Signs	19.2	1112	12.6	3125	6.5	1784	13.1	3770	181.0	-42.9	111.3
Pavement Marking	11.6	673	8.8	2174	9.1	2481	6.1	1750	223.0	14.1	-29.5
Pipes, Sewers & Drains	5.0	293	5.5	1359	5.3	1443	4.0	1151	363.8	6.2	-20.2
Bridge Work	3.9	225	6.1	1525	9.5	2599	10.6	3059	577.8	70.4	17.7
Constr. Eng.	2.8	162	3.7	924	4.5	1241	3.8	1097	470.4	34.3	-11.6
Excavation	1.5	87	1.5	364	1.5	416	2.6	745	318.4	14.3	79.1
Hauling	2.3	132	5.5	1372	3.5	959	2.6	742	939.4	-30.1	-22.6
Reinforcing Steel	15.1	878	6.4	1579	6.7	1841	6.0	1745	79.8	16.6	-5.2
Seed/Sod Landscaping	2.3	134	2.1	524	5.2	1412	9.3	2686	291.3	169.5	90.2
Traffic Contr.	3.0	174	6.3	1560	4.3	1176	2.4	691	796.6	-24.6	-41.2
Undersealing	3.5	206	2.7	665	1.5	415	2.8	816	222.8	-37.6	96.6
Conc. Mbrs. Str. Steel Fence	0	0	9.9	2467	11.0	3017	0.2	66	---	22.3	-97.8
Conc. Pvmnt.	4.3	250	4.2	1049	2.8	769	5.2	1492	319.6	-26.7	94.0
Other	1.6	90	0.6	141	2.4	661	1.5	149	56.7	368.8	-77.5
Totals	1.1	66	1.7	417	1.0	274	2.9	824	531.8	-34.3	200.7
	8.3	483	5.3	1314	4.1	1117	7.9	2272	172.0	-15.0	103.4
	100.0	5805	100.0	24820	100.0	27382	100.0	28853	427.6	110.3	105.4

walls, and other small concrete items. In FY 1983, DBEs performed more of this type of work than any other, including guardrail. The dollar volume awarded in this category has fluctuated considerably during the past 4 years, but in FY 1986, the volume was definitely higher than in any other year. In 3 of the 4 fiscal years analyzed, this specialty area has either been the first- or second-largest dollar volume business among minority subcontracted work.

Construction signs are another type of work frequently performed by DBE firms. This task has accounted for 6 to 12 percent of the total volume of minority subcontracted work during the past 4 fiscal years. As was the case for miscellaneous concrete work, dollar volume in this category has varied greatly through the years. In FY 1986, the volume decreased by 30 percent, representing the lowest level since the beginning of the DBE program.

Hauling has been a fairly stable business for minority firms throughout the past 4 years. Although hauling currently does not account for as large a percentage of total dollar volume as it did in FY 1983, its volume has leveled off and has not varied appreciably. Several firms are well established in this business and do the majority of this work.

Pavement marking is similar to the hauling business in that its total dollar volume has not fluctuated much since the second year of the program. This work has consistently accounted for some 5 percent of the total DBE work volume for each of the past 4 fiscal years. Marking is another area of

construction in which there are a few firms that do the majority of the work.

Seed and sod, also known as landscaping, is another type of work frequently mentioned as being flooded with new minority firms. In Indiana, however, large volumes of work have not generally been awarded to DBEs for landscaping, except during FY 1984. Even in this peak year, the volume accounted for only 6 percent of the total amount of work. In the past 2 fiscal years, the volumes of work awarded to DBEs for landscaping have decreased by 25 percent and 41 percent, respectively.

Other categories of work listed in Table 7, such as bridge work, excavation, the placing of concrete and structural steel members, traffic control, piping, placement of sewers and drains, construction engineering, placing of reinforcing steel, fencing, and concrete pavement, have consistently accounted for the rest of total dollar volumes. The information presented in Table 7 suggests that the claim that most DBE work is performed in functions that don't require much capital is valid to some extent. Jobs such as guardrail, construction signs, and miscellaneous concrete have, in fact, made up a large percentage of the minority work performed in Indiana.

It must be noted, however, other areas of highway construction not usually associated with DBEs have displayed considerable increases in dollar volume and participation. In particular, pipe, drain, and sewer work; construction engineering; and placement of reinforcing steel have had tremendous increases in dollar volume of awards. This information

suggests that some minority firms have truly benefited from the program and are learning to manage and perform larger more difficult jobs, even though many firms are content to stay specialized and perform in their traditional highway construction tasks.

CONCLUSIONS

The DBE program has been a controversial and fiercely debated topic since the January 1983 passage of the STAA. Strong opinions on this subject, combined with a shortage of relevant data, have increased the program's vulnerability to criticism. It is hoped that this paper has presented a quantitative view of the positive and negative impacts of the IDOH DBE program, with the result that the temptation to make unwarranted claims for or against the program has been reduced.

The findings of this study can be summarized as follows:

- The IDOH DBE program has increased minority participation in the Indiana highway construction industry in terms of dollar volume. In FY 1982, before implementation of the current DBE program, the total value of DBE subcontracts was a little more than \$2 million. By FY 1986, this figure had increased to more than \$28 million. There is no doubt that this increase in minority participation is largely due to the DBE program.

- The number and dollar volume of DBE subcontract awards have been reasonably distributed throughout the six Indiana districts.

- DBE firms are being awarded an increasing number of large contracts each year. This rise in awards suggests that the capacity of the average DBE firm is increasing. The average size of the subcontract awarded to a DBE has significantly increased.

- Repeat award-winning DBE firms in Indiana have consistently been awarded the majority of DBE dollars.

- A large percentage of the minority work in Indiana is being performed by a small group of DBE contractors. The data demonstrate that during each fiscal year from 1983 to 1986, at least 30 percent of the total DBE subcontract volume was performed by three minority contractors. Also, the top

10 minority contractors have performed more than 60 percent of the minority work over the same period. Considering that some 100 firms have been certified for minority work in Indiana at any given time in the DBE program's existence, it can be observed that 10 percent of the eligible firms, on the average, are performing more than half of the available work.

- A majority of the work performed by DBEs in Indiana is in non-capital-intensive specialty areas.

- The types of work performed by DBEs in Indiana has for the most part varied from year to year, but DBE participation in guardrail, miscellaneous concrete, and construction sign jobs has been consistently high since the program began. Recently, however, there have been dollar volume and participation increases in highway construction tasks not usually associated with DBEs.

Finally, although Section 105(f) was only one small aspect of the STAA, it has become an extremely large and complex issue in the highway construction industry; much more complex, in fact, than can be reflected in this paper. The authors believe that an individual's judgment of the DBE program depends on that person's attitude toward history and beliefs about the appropriate role of government, as well as on whether that person is a member of a group that is involved with or affected by the DBE program itself. The authors hope that the information presented in this paper will help those who must make or influence decisions on the future of the DBE program.

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