
5.0 DISPARITY ANALYSIS

This chapter examines the issue of disparity within each business category of procurement addressed in this study. Disparity, in this context, is the analysis of the differences between the utilization of minority and woman-owned business enterprises (minorities) and the availability of those firms in the marketplace. Accordingly, MGT used disparity indices to examine whether minorities received a proportional share of dollars based on the availability of minorities in the relevant market area.

This chapter consists of two sections:

- Section 5.1 describes the methodology used by MGT to test for the presence or absence of disparity in each of the business categories. The development and use of the disparity indices as well as corresponding t-tests are included in this section.
- Section 5.2 applies the disparity indices and t-tests analyses to the business categories and determines the presence or absence of disparity in ODOT procurement activity for contracts and purchase orders.

5.1 Methodology

MGT used the availability and utilization information presented in **Chapter 4.0** of this report as the basis to determine if minorities received a proportional share of awards and other procurements by ODOT. This determination is made primarily through the disparity index calculation that compares the availability of firms with the utilization of those firms. The disparity index also provides a value that can be given a commonly accepted substantive interpretation. To determine if disparity exists for minorities or nonminorities within a specific business category, MGT compared the utilization of each group to its respective availability within each of the relevant market areas.

5.1.1 Disparity Index

The disparity index is used to measure the difference between utilization and availability. Several post-*Croson* cases, most notably *Contractors Association of Eastern Pennsylvania v. City of Philadelphia*, support the use of disparity indices for determining disparity within the marketplace.¹

Although a variety of similar indices could be utilized, the index used must be easily calculable, readily interpreted, and universally comparable. MGT pioneered the use of disparity indices as a method of determining the degree of disparity between utilization and availability.

For this study, the ratio of the percentage of utilization to the percentage of availability multiplied by 100 serves as our measure of choice, as shown in the formula:

$$(1) \text{ Disparity Index} = \frac{\%U_{m_1p_1}}{\%A_{m_1p_1}} \times 100$$

Where: $U_{m_1p_1}$ = utilization of Minority₁ for procurement₁
 $A_{m_1p_1}$ = availability of Minority₁ for procurement₁

Due to the mathematical properties involved in the calculations, a disparity index value of 0.00 indicates zero utilization. An index of 100 indicates parity between utilization and availability. Firms within a business category are considered underutilized if the disparity indices are less than 100, and overutilized if the indices are above 100.

There is no standardized measure to evaluate levels of underutilization or overutilization within a procurement context. But, a tool is needed to determine which occurrences—particularly when there is underutilization—indicate the presence of factors other than those occurring during the normal course of business. Our rule of thumb is that a disparity index of less than 80 indicates that the level of disparity

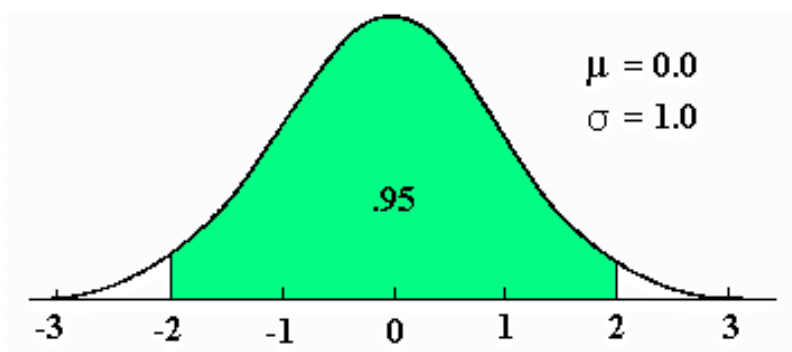
¹ *Contractors Association of Eastern Pennsylvania, Inc. v City of Philadelphia*, 91 F 3d at 603.

warrants further investigation. The disparity index threshold of 80 is based on the Equal Employment Opportunity Commission's (EEOC) adopted "80 percent rule" in the *Uniform Guidelines on Employee Selection Procedures*. In the context of employment discrimination, a disparity ratio below 80 indicates a substantial level of disparity demonstrating adverse or disparate impact. The Supreme Court accepted the use of the 80 percent rule in *Connecticut v. Teal (Teal)*, 457 U.S. 440 (1982). In *Teal* and other affirmative action cases, the terms "adverse impact," "disparate impact," and "discriminatory impact" are used interchangeably. Thus, MGT's designation of disparity is founded on a Supreme Court decision.

5.1.2 T-Test

In addition to the disparity index, MGT conducted t-tests to determine if statistically significant differences existed between utilization and availability in terms of contract or payment dollars or number of firms. The t-test determines if the relationship between availability and utilization (suggested by the disparity index value) supports a conclusion of disparity. In other words, the results of the t-test allow us to conclude if the relationships between availability and utilization are strong enough to state, with a high degree of confidence, that the results found in the disparity index represent real disparity.

The t value indicates whether or not the results found in the disparity index are what one would ordinarily expect to find given the attributes of the sampling distribution. Given the large sample sizes involved, the t distribution approaches a normal distribution. Because of the statistical properties of the normal distribution, 95 percent of all cases can be found within two standard deviations of the mean. Since t values can be positive or negative, it is necessary to determine the critical region of the distribution on each end of the distribution.



Based on the properties of the normal distribution, the critical values are $+1.96$ and -1.96 (the calculated values \pm two standard deviations of the mean). Any t value found between these critical t values is not significant enough for us to conclude that there is disparity. For a conclusion of "statistical significance" to be reached, the t value must be either greater than $+1.96$ or less than -1.96 . When such a t value is present, we can say with 95 percent certainty that disparity, as represented by either overutilization or underutilization, is actually present.

The previous discussion means that any t value less than or equal to -1.96 indicates that firms in a business category are underutilized in terms of contract dollars or contracts awarded. The relationship is said to be statistically significant. In other words, the fact that the t value is so extreme means that we can be sufficiently confident that the underutilization is severe enough to be considered a real phenomenon and not just a statistical artifact of the sampling distribution. In some cases, disparity is indicated by the disparity index but cannot be tested with a t-test due to the mathematical constraint of division by zero. This will occur when there is zero utilization because the utilization percentage is the denominator in the final calculation for the t-test value. Although these cases cannot be tested to be statistically significant, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

5.2 Disparity Indices and T-Test Results

Tables showing disparity indices and t-test results for contracts and purchase orders for construction, professional services, other services, equipment and supplies, and not-for-profit organizations are analyzed in this section. The tables are based on the utilization and availability of minorities and nonminorities in ODOT's relevant market areas as shown in **Chapter 4.0**.

5.2.1 Statewide - Construction Contracts

Exhibit 5-1 shows the disparity indices for prime construction contracts, based on vendor availability. According to **Exhibit 5-1**, Minorities were substantially underutilized in the state of Oregon. Over the eight-year period, nonminorities were overutilized. African American firms were not utilized as construction prime contractors during the eight years of the study. In 2007, Native Americans were overutilized with an index of 283. In 2004, Hispanic American firms were overutilized based on a disparity index of 146. The following is a summary of our findings for the overall eight-year period.

- African American firms were not utilized as prime contractors, consequently a disparity index of 0.0. However, according to the availability analysis of bidders, there were no African Americans available.
- Hispanic American firms were underutilized as prime contractors with a disparity index of 45.2.
- Asian American firms were substantially underutilized as prime contractors with a disparity index of 5.5.
- Native American firms were not utilized as prime contractors with a disparity index of 52.6.
- Nonminority women firms were substantially underutilized as prime contractors with a disparity index of 23.8.
- Nonminority male firms were overutilized as prime contractors with a disparity index of 116.7, thus being substantially overutilized.

**EXHIBIT 5-1
STATEWIDE
CONSTRUCTION DISPARITY ANALYSIS OF PRIME CONTRACTORS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
2000				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	3.27%	0.00	Underutilization *
Asian Americans	0.00%	0.93%	0.00	Underutilization *
Native Americans	0.65%	1.87%	34.77	Underutilization *
Nonminority Women	3.89%	13.08%	29.70	Underutilization *
Nonminority Firms	95.46%	80.84%	118.09	Overutilization
2001				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.73%	3.27%	22.24	Underutilization *
Asian Americans	0.00%	0.93%	0.00	Underutilization *
Native Americans	0.11%	1.87%	6.11	Underutilization *
Nonminority Women	3.87%	13.08%	29.56	Underutilization *
Nonminority Firms	95.29%	80.84%	117.87	Overutilization
2002				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.58%	3.27%	17.84	Underutilization *
Asian Americans	0.00%	0.93%	0.00	Underutilization *
Native Americans	0.00%	1.87%	0.00	Underutilization *
Nonminority Women	2.64%	13.08%	20.18	Underutilization *
Nonminority Firms	96.78%	80.84%	119.71	Overutilization
2003				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	2.26%	3.27%	69.15	Underutilization *
Asian Americans	0.00%	0.93%	0.00	Underutilization *
Native Americans	0.00%	1.87%	0.00	Underutilization *
Nonminority Women	4.64%	13.08%	35.45	Underutilization *
Nonminority Firms	93.10%	80.84%	115.16	Overutilization
2004				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	4.78%	3.27%	146.19	Overutilization
Asian Americans	0.35%	0.93%	37.11	Underutilization *
Native Americans	0.00%	1.87%	0.00	Underutilization *
Nonminority Women	4.31%	13.08%	32.97	Underutilization *
Nonminority Firms	90.56%	80.84%	112.02	Overutilization
2005				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.18%	3.27%	5.58	Underutilization *
Asian Americans	0.00%	0.93%	0.00	Underutilization *
Native Americans	0.32%	1.87%	17.32	Underutilization *
Nonminority Women	2.17%	13.08%	16.61	Underutilization *
Nonminority Firms	97.32%	80.84%	120.38	Overutilization
2006				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	1.27%	3.27%	38.68	Underutilization *
Asian Americans	0.00%	0.93%	0.00	Underutilization *
Native Americans	0.41%	1.87%	21.97	Underutilization *
Nonminority Women	1.62%	13.08%	12.36	Underutilization *
Nonminority Firms	96.71%	80.84%	119.63	Overutilization
2007				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.92%	3.27%	27.98	Underutilization *
Asian Americans	0.00%	0.93%	0.00	Underutilization *
Native Americans	5.29%	1.87%	283.19	Overutilization
Nonminority Women	2.80%	13.08%	21.40	Underutilization *
Nonminority Firms	90.99%	80.84%	112.56	Overutilization
All Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	1.48%	3.27%	45.22	Underutilization *
Asian Americans	0.05%	0.93%	5.54	Underutilization *
Native Americans	0.98%	1.87%	52.59	Underutilization *
Nonminority Women	3.12%	13.08%	23.84	Underutilization *
Nonminority Firms	94.37%	80.84%	116.73	Overutilization

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

The t-test results shown in **Exhibit 5-2** for construction contracts indicate that the findings of underutilization of nonminority women-owned firms and the overutilization of nonminority-owned firms were statistically significant. Once more the t-test results provide support that African American-owned firms were not utilized as prime contractors for construction contracts during the study period.

**EXHIBIT 5-2
STATEWIDE
CONSTRUCTION
T-TEST RESULTS FOR PRIME CONTRACTORS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.00%	0.00	0.00%	N/A
Hispanic Americans	1.48%	0.00	3.27%	0.00
Asian Americans	0.05%	0.00	0.93%	0.00
Native Americans	0.98%	0.00	1.87%	0.00
Nonminority Women	3.12%	-15.39 *	13.08%	-8.39 *
Nonminority Firms	94.37%	15.75 *	80.84%	8.58 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

Exhibit 5-3 presents the disparity analysis of construction subcontracting activity based on the number of subcontractors who performed work on ODOT projects. The data based on ODOT tracking of subcontractors showed that African American and Asian American subcontractors were significantly underutilized, while Hispanic American, Native Americans, and nonminority women-owned subcontractors were overutilized over the eight year study period.

**EXHIBIT 5-3
STATEWIDE
CONSTRUCTION
DISPARITY ANALYSIS OF SUBCONTRACTORS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Subcontract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
All Fiscal Years				
African Americans	0.13%	2.28%	5.73	Underutilization *
Hispanic Americans	6.06%	3.58%	169.19	Overutilization
Asian Americans	0.94%	2.60%	35.98	Underutilization *
Native Americans	8.20%	2.82%	290.76	Overutilization
Nonminority Women	21.41%	18.22%	117.47	Overutilization

5.2.2 Region 1 - Construction Contracts

Exhibit 5-4 shows the disparity indices for prime construction contracts, based on vendor availability in Region 1. According to **Exhibit 5-4**, minorities were substantially underutilized in the state of Oregon, except for Native Americans. Over the eight-year period, nonminorities were overutilized, except in 2001 and 2003. African American and Asian American firms were not utilized as construction prime contractors during the eight years of the study. Nonminority women and Hispanic American firms were underutilized overall. In 2003, Hispanic American firms were overutilized based on a disparity index of 665. Nonminority women-owned firms were overutilized in 2001. In 2006 and 2007, Native Americans were overutilized. The following is a summary of our findings for the overall eight-year period.

- African American firms were not utilized as prime contractors, consequently a disparity index of 0.0. However, according to the construction bidder availability, there were no available African Americans.
- Hispanic American firms were underutilized as prime contractors with a disparity index of 50.6.
- Asian American firms were substantially underutilized as prime contractors with a disparity index of 0.0.

- Native American firms were overutilized as prime contractors with a disparity index of 240.33.
- Nonminority women firms were substantially underutilized as prime contractors with a disparity index of 28.4.
- Nonminority male firms were overutilized as prime contractors with a disparity index of 111.8, thus being substantially overutilized.

**EXHIBIT 5-4
REGION 1
CONSTRUCTION
DISPARITY ANALYSIS OF
PRIME CONTRACTORS IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
2000				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	6.49%	0.00	Underutilization *
Asian Americans	0.00%	1.30%	0.00	Underutilization *
Native Americans	2.30%	2.60%	88.52	Underutilization
Nonminority Women	6.33%	11.69%	54.13	Underutilization *
Nonminority Firms	91.37%	77.92%	117.26	Overutilization
2001				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	4.39%	6.49%	67.65	Underutilization *
Asian Americans	0.00%	1.30%	0.00	Underutilization *
Native Americans	0.00%	2.60%	0.00	Underutilization *
Nonminority Women	30.83%	11.69%	263.76	Overutilization
Nonminority Firms	64.78%	77.92%	83.13	Underutilization
2002				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	2.61%	6.49%	40.26	Underutilization *
Asian Americans	0.00%	1.30%	0.00	Underutilization *
Native Americans	0.00%	2.60%	0.00	Underutilization *
Nonminority Women	8.94%	11.69%	76.53	Underutilization *
Nonminority Firms	88.44%	77.92%	113.50	Overutilization
2003				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	43.19%	6.49%	665.20	Overutilization
Asian Americans	0.00%	1.30%	0.00	Underutilization *
Native Americans	0.00%	2.60%	0.00	Underutilization *
Nonminority Women	17.22%	11.69%	147.37	Overutilization
Nonminority Firms	39.58%	77.92%	50.79	Underutilization *
2004				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	6.47%	6.49%	99.66	Underutilization
Asian Americans	0.00%	1.30%	0.00	Underutilization *
Native Americans	0.00%	2.60%	0.00	Underutilization *
Nonminority Women	0.00%	11.69%	0.00	Underutilization *
Nonminority Firms	93.53%	77.92%	120.03	Overutilization
2005				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	1.08%	6.49%	16.62	Underutilization *
Asian Americans	0.00%	1.30%	0.00	Underutilization *
Native Americans	1.91%	2.60%	73.61	Underutilization *
Nonminority Women	0.00%	11.69%	0.00	Underutilization *
Nonminority Firms	97.01%	77.92%	124.49	Overutilization
2006				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	6.49%	0.00	Underutilization *
Asian Americans	0.00%	1.30%	0.00	Underutilization *
Native Americans	5.53%	2.60%	212.90	Overutilization
Nonminority Women	0.00%	11.69%	0.00	Underutilization *
Nonminority Firms	94.47%	77.92%	121.24	Overutilization
2007				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	2.28%	6.49%	35.07	Underutilization *
Asian Americans	0.00%	1.30%	0.00	Underutilization *
Native Americans	13.17%	2.60%	506.96	Overutilization
Nonminority Women	0.20%	11.69%	1.75	Underutilization *
Nonminority Firms	84.35%	77.92%	108.25	Overutilization
All Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	3.29%	6.49%	50.64	Underutilization *
Asian Americans	0.00%	1.30%	0.00	Underutilization *
Native Americans	6.24%	2.60%	240.33	Overutilization
Nonminority Women	3.32%	11.69%	28.43	Underutilization *
Nonminority Firms	87.15%	77.92%	111.84	Overutilization

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

The t-test results shown in **Exhibit 5-5** for construction contracts indicate that the findings of underutilization of nonminority women-owned firms and the overutilization of nonminority-owned firms were statistically significant. The t-test results provide support that African American and Asian American-owned firms were not utilized as prime contractors for construction contracts during the study period.

**EXHIBIT 5-5
REGION 1
CONSTRUCTION
T-TEST RESULTS FOR PRIME CONTRACTORS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.00%	0.00	0.00%	N/A
Hispanic Americans	3.29%	0.00	6.49%	0.00
Asian Americans	0.00%	0.00	1.30%	0.00
Native Americans	6.24%	0.00	2.60%	0.00
Nonminority Women	3.32%	-5.38 *	11.69%	-4.10 *
Nonminority Firms	87.15%	3.18 *	77.92%	2.42 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

Exhibit 5-6 presents the disparity analysis of construction subcontracting activity in Region 1. It shows that African Americans, Asian Americans, and nonminority women subcontractors were significantly underutilized. It also shows that Hispanic Americans and Native Americans were overutilized.

**EXHIBIT 5-6
REGION 1
CONSTRUCTION
DISPARITY ANALYSIS OF SUBCONTRACTORS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Subcontract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
All Fiscal Years				
African Americans	0.30%	5.31%	5.57	Underutilization *
Hispanic Americans	11.99%	4.77%	251.09	Overutilization
Asian Americans	0.62%	4.24%	14.50	Underutilization *
Native Americans	16.00%	2.39%	670.13	Overutilization
Nonminority Women	12.25%	20.16%	60.77	Underutilization *

5.2.3 Region 2 - Construction Contracts

Exhibit 5-7 shows the disparity indices for prime construction contracts, based on vendor availability in Region 2. According to **Exhibit 5-7**, minorities were substantially underutilized in the state of Oregon. Over the eight-year period, nonminorities were significantly overutilized. African American and Native American firms were not utilized as construction prime contractors during the eight years of the study in Region 2. In 2004, Hispanic American firms were overutilized based on a disparity index of 253. The following is a summary of our findings for the overall eight-year period.

- African American firms were not utilized as prime contractors, consequently a disparity index of 0.0. However, according to the prime bidder availability analysis, there were no African American prime available.
- Hispanic American firms were underutilized as prime contractors with a disparity index of 63.3.
- Asian American firms were substantially underutilized as prime contractors with a disparity index of 3.4.
- Native American firms were not utilized as prime contractors with a disparity index of 0.0.
- Nonminority women firms were substantially underutilized as prime contractors with a disparity index of 17.1.
- Nonminority male firms were overutilized as prime contractors with a disparity index of 131.6, thus being substantially overutilized.

**EXHIBIT 5-7
REGION 2
CONSTRUCTION
DISPARITY ANALYSIS OF PRIME CONTRACTORS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
2000				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	2.33%	0.00	Underutilization *
Asian Americans	0.00%	2.33%	0.00	Underutilization *
Native Americans	0.00%	2.33%	0.00	Underutilization *
Nonminority Women	3.53%	20.93%	16.85	Underutilization *
Nonminority Firms	96.47%	72.09%	133.82	Overutilization
2001				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.84%	2.33%	36.25	Underutilization *
Asian Americans	0.00%	2.33%	0.00	Underutilization *
Native Americans	0.00%	2.33%	0.00	Underutilization *
Nonminority Women	3.57%	20.93%	17.06	Underutilization *
Nonminority Firms	95.59%	72.09%	132.59	Overutilization
2002				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.41%	2.33%	17.83	Underutilization *
Asian Americans	0.00%	2.33%	0.00	Underutilization *
Native Americans	0.00%	2.33%	0.00	Underutilization *
Nonminority Women	2.01%	20.93%	9.60	Underutilization *
Nonminority Firms	97.57%	72.09%	135.35	Overutilization
2003				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.30%	2.33%	13.11	Underutilization *
Asian Americans	0.00%	2.33%	0.00	Underutilization *
Native Americans	0.00%	2.33%	0.00	Underutilization *
Nonminority Women	5.14%	20.93%	24.57	Underutilization *
Nonminority Firms	94.55%	72.09%	131.15	Overutilization
2004				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	5.89%	2.33%	253.30	Overutilization
Asian Americans	0.50%	2.33%	21.32	Underutilization *
Native Americans	0.00%	2.33%	0.00	Underutilization *
Nonminority Women	5.80%	20.93%	27.71	Underutilization *
Nonminority Firms	87.81%	72.09%	121.81	Overutilization
2005				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	2.33%	0.00	Underutilization *
Asian Americans	0.00%	2.33%	0.00	Underutilization *
Native Americans	0.00%	2.33%	0.00	Underutilization *
Nonminority Women	2.96%	20.93%	14.12	Underutilization *
Nonminority Firms	97.04%	72.09%	134.61	Overutilization
2006				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	1.52%	2.33%	65.16	Underutilization *
Asian Americans	0.00%	2.33%	0.00	Underutilization *
Native Americans	0.00%	2.33%	0.00	Underutilization *
Nonminority Women	1.60%	20.93%	7.66	Underutilization *
Nonminority Firms	96.88%	72.09%	134.38	Overutilization
2007				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	2.33%	0.00	Underutilization *
Asian Americans	0.00%	2.33%	0.00	Underutilization *
Native Americans	0.00%	2.33%	0.00	Underutilization *
Nonminority Women	6.19%	20.93%	29.59	Underutilization *
Nonminority Firms	93.81%	72.09%	130.12	Overutilization
All Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	1.47%	2.33%	63.26	Underutilization *
Asian Americans	0.08%	2.33%	3.38	Underutilization *
Native Americans	0.00%	2.33%	0.00	Underutilization *
Nonminority Women	3.58%	20.93%	17.12	Underutilization *
Nonminority Firms	94.87%	72.09%	131.59	Overutilization

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

The t-test results shown in **Exhibit 5-8** for construction contracts indicate that the findings of underutilization of nonminority women-owned firms and the overutilization of nonminority-owned firms were statistically significant in Region 2. The t-test results provide support that African American and Native American-owned firms were not utilized as prime contractors for construction contracts during the study period.

**EXHIBIT 5-8
REGION 2
CONSTRUCTION
T-TEST RESULTS FOR PRIME CONTRACTORS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.00%	0.00	0.00%	N/A
Hispanic Americans	1.47%	0.00	2.33%	0.00
Asian Americans	0.08%	0.00	2.33%	0.00
Native Americans	0.00%	0.00	2.33%	0.00
Nonminority Women	3.58%	-17.81 *	20.93%	-6.12 *
Nonminority Firms	94.87%	19.69 *	72.09%	6.77 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

Exhibit 5-9 presents the disparity analysis of construction subcontracting activity in Region 2. The exhibit shows that Hispanic Americans, Asian Americans, and nonminority women subcontractors were overutilized during the study period. However, Native American subcontractors were significantly underutilized.

**EXHIBIT 5-9
REGION 2
CONSTRUCTION
DISPARITY ANALYSIS OF SUBCONTRACTORS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Subcontract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
All Fiscal Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	3.78%	3.47%	108.99	Overutilization
Asian Americans	1.76%	1.74%	101.66	Overutilization
Native Americans	1.46%	3.13%	46.60	Underutilization *
Nonminority Women	28.40%	15.63%	181.74	Overutilization

5.2.4 Region 3 - Construction Contracts

Exhibit 5-10 shows the disparity indices for prime construction contracts, based on vendor availability in Region 3. According to **Exhibit 5-10**, minorities, where available, were substantially underutilized in the state of Oregon. Over the eight-year period, nonminorities were significantly overutilized. African American and Asian American firms were not utilized as construction prime contractors during the eight years of the study. Nonminority women, Native American, and Hispanic American firms were significantly underutilized overall. The following is a summary of our findings for the overall eight-year period.

- African American firms were not utilized and were not available as prime contractors, consequently a disparity index of 0.0.
- Hispanic American firms were underutilized as prime contractors with a disparity index of 0.0.
- Asian American firms were not utilized and were not available as prime contractors with a disparity index of 0.0.
- Native American firms were not utilized as prime contractors with a disparity index of 2.9.
- Nonminority women firms were substantially underutilized as prime contractors with a disparity index of 4.31.
- Nonminority male firms were overutilized as prime contractors with a disparity index of 126.4, thus being substantially overutilized.

**EXHIBIT 5-10
REGION 3
CONSTRUCTION
DISPARITY ANALYSIS OF PRIME CONTRACTORS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
2000				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	3.57%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	3.57%	0.00	Underutilization *
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	100.00%	78.57%	127.27	Overutilization
2001				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	3.57%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.44%	3.57%	12.19	Underutilization *
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	99.56%	78.57%	126.72	Overutilization
2002				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	3.57%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	3.57%	0.00	Underutilization *
Nonminority Women	1.08%	14.29%	7.56	Underutilization *
Nonminority Firms	98.92%	78.57%	125.90	Overutilization
2003				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	3.57%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	3.57%	0.00	Underutilization *
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	100.00%	78.57%	127.27	Overutilization
2004				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	3.57%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	3.57%	0.00	Underutilization *
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	100.00%	78.57%	127.27	Overutilization
2005				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	3.57%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	3.57%	0.00	Underutilization *
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	100.00%	78.57%	127.27	Overutilization
2006				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	3.57%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	3.57%	0.00	Underutilization *
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	100.00%	78.57%	127.27	Overutilization
2007				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	3.57%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	3.57%	0.00	Underutilization *
Nonminority Women	2.22%	14.29%	15.57	Underutilization *
Nonminority Firms	97.78%	78.57%	124.44	Overutilization
All Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	3.57%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.11%	3.57%	2.97	Underutilization *
Nonminority Women	0.62%	14.29%	4.31	Underutilization *
Nonminority Firms	99.28%	78.57%	126.35	Overutilization

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

The t-test results shown in **Exhibit 5-11** for construction contracts indicate that the findings of underutilization of nonminority women-owned firms and the overutilization of nonminority-owned firms were statistically significant. The t-test results provide support that African American, Asian American, and Hispanic American-owned firms were not utilized as prime contractors for construction contracts during the study period.

**EXHIBIT 5-11
REGION 3
CONSTRUCTION
T-TEST RESULTS FOR PRIME CONTRACTORS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.00%	0.00	0.00%	N/A
Hispanic Americans	0.00%	0.00	3.57%	0.00
Asian Americans	0.00%	0.00	0.00%	N/A
Native Americans	0.11%	0.00	3.57%	0.00
Nonminority Women	0.62%	-17.74 *	14.29%	-9.25 *
Nonminority Firms	99.28%	24.84 *	78.57%	12.95 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

Exhibit 5-12 presents the disparity analysis of construction subcontracting activity in Region 3. **Exhibit 5-12** shows that African Americans and Asian Americans subcontractors were significantly underutilized on ODOT subcontracts during the study period. However, Hispanic American, Native American, and nonminority women were overutilized as subcontractors on ODOT federal construction projects throughout the study period.

**EXHIBIT 5-12
REGION 3
CONSTRUCTION
DISPARITY ANALYSIS OF SUBCONTRACTORS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Subcontract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
All Fiscal Years				
African Americans	0.21%	0.79%	27.04	Underutilization *
Hispanic Americans	3.56%	2.38%	149.41	Overutilization
Asian Americans	0.53%	0.79%	67.07	Underutilization *
Native Americans	4.13%	3.97%	103.99	Overutilization
Nonminority Women	16.94%	16.67%	101.64	Overutilization

5.2.5 Region 4 - Construction Contracts

Exhibit 5-13 shows the disparity indices for prime construction contracts, based on vendor availability in Region 4. According to **Exhibit 5-13**, African Americans, Hispanic Americans, Asian Americans, and Native Americans were not available to perform work as prime contractors on ODOT construction projects in Region 4. Nonminority women were the only minority group available to do work as a prime in Region 4. However, nonminority women were underutilized throughout all years of the study period.

The following is a summary of findings for the eight year study:

- African American firms were not available as prime contractors; consequently a disparity index was not applicable.
- Hispanic American firms were not available as prime contractors, therefore, an index was not applicable.
- Asian American firms were not available as prime contractors, therefore, a disparity index was not applicable.
- Native American firms were not available as prime contractors, therefore, a disparity index was not applicable.
- Nonminority women firms were substantially underutilized as prime contractors with a disparity index of 6.8.
- Nonminority male firms were overutilized as prime contractors with a disparity index of 127, thus being substantially overutilized.

**EXHIBIT 5-13
REGION 4
CONSTRUCTION
DISPARITY ANALYSIS OF PRIME CONTRACTORS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars ¹	% of Available Firms ²	Disparity Index ³	Disparate Impact of Utilization
2000				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	23.08%	0.00	Underutilization *
Nonminority Firms	100.00%	76.92%	130.00	Overutilization
2001				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	4.70%	23.08%	20.36	Underutilization *
Nonminority Firms	95.30%	76.92%	123.89	Overutilization
2002				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	1.80%	23.08%	7.82	Underutilization *
Nonminority Firms	98.20%	76.92%	127.65	Overutilization
2003				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	23.08%	0.00	Underutilization *
Nonminority Firms	100.00%	76.92%	130.00	Overutilization
2004				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	23.08%	0.00	Underutilization *
Nonminority Firms	100.00%	76.92%	130.00	Overutilization
2005				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	4.37%	23.08%	18.92	Underutilization *
Nonminority Firms	95.63%	76.92%	124.32	Overutilization
2006				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	23.08%	0.00	Underutilization *
Nonminority Firms	100.00%	76.92%	130.00	Overutilization
2007				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	3.25%	23.08%	14.07	Underutilization *
Nonminority Firms	96.75%	76.92%	125.78	Overutilization
All Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	1.56%	23.08%	6.77	Underutilization *
Nonminority Firms	98.44%	76.92%	127.97	Overutilization

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

The t-test results shown in **Exhibit 5-14** for construction contracts indicate that the findings of underutilization of nonminority women-owned firms and the overutilization of nonminority-owned firms were statistically significant. The t-test results provide support that African American, Hispanic American, Asian American, and Native American-owned firms were not available or utilized as prime contractors for construction contracts during the study period.

**EXHIBIT 5-14
REGION 4
CONSTRUCTION
T-TEST RESULTS FOR PRIME CONTRACTORS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.00%	0.00	0.00%	0.00
Hispanic Americans	0.00%	0.00	0.00%	0.00
Asian Americans	0.00%	0.00	0.00%	0.00
Native Americans	0.00%	0.00	0.00%	0.00
Nonminority Women	1.56%	-15.99 *	23.08%	-6.25 *
Nonminority Firms	98.44%	15.99 *	76.92%	6.25 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

Exhibit 5-15 presents the disparity analysis of construction subcontracting activity in Region 4. African Americans were not available in Region 4 to perform work on ODOT construction subcontracts. Hispanic Americans, Asian Americans, and Native Americans were all underutilized as subcontractors throughout the eight-year study period. Nonminority women were overutilized.

**EXHIBIT 5-15
REGION 4
CONSTRUCTION
DISPARITY ANALYSIS OF SUBCONTRACTORS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Subcontract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
All Fiscal Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.47%	1.54%	30.71	Underutilization *
Asian Americans	0.00%	3.08%	0.00	Underutilization *
Native Americans	0.79%	3.08%	25.72	Underutilization *
Nonminority Women	42.41%	20.00%	212.04	Overutilization

5.2.6 Region 5 - Construction Contracts

Exhibit 5-16 shows the disparity indices for prime construction contracts, based on vendor availability in Region 5. According to **Exhibit 5-16**, minorities were not available in Region 5 to perform as prime contractors on ODOT construction projects, except for nonminority women-owned firms. Nonminority women were substantially underutilized throughout the eight-year study period. Nonminority firms were overutilized throughout the study period with a disparity index of 111.25.

The following is a summary of findings for the eight year period:

- African American firms were not available as prime contractors, therefore, a disparity index was not applicable.
- Hispanic American firms were not available as prime contractors, therefore, a disparity index was not applicable.
- Asian American firms were not available as prime contractors, therefore, a disparity index was not applicable.
- Native American firms were not available as prime contractors, therefore, a disparity index was not applicable.
- Nonminority women firms were substantially underutilized as prime contractors with a disparity index of 32.5.
- Nonminority male firms were overutilized as prime contractors with a disparity index of 111, thus being substantially overutilized.

**EXHIBIT 5-16
REGION 5
CONSTRUCTION
DISPARITY ANALYSIS OF PRIME CONTRACTORS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
2000				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	100.00%	85.71%	116.67	Overutilization
2001				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	100.00%	85.71%	116.67	Overutilization
2002				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	100.00%	85.71%	116.67	Overutilization
2003				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	100.00%	85.71%	116.67	Overutilization
2004				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	6.44%	14.29%	45.07	Underutilization *
Nonminority Firms	93.56%	85.71%	109.16	Overutilization
2005				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	100.00%	85.71%	116.67	Overutilization
2006				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	10.15%	14.29%	71.06	Underutilization *
Nonminority Firms	89.85%	85.71%	104.82	Overutilization
2007				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	14.29%	0.00	Underutilization *
Nonminority Firms	100.00%	85.71%	116.67	Overutilization
All Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	4.64%	14.29%	32.51	Underutilization *
Nonminority Firms	95.36%	85.71%	111.25	Overutilization

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

The t-test results shown in **Exhibit 5-17** for construction contracts indicate that the findings of underutilization of nonminority women-owned firms and the overutilization of nonminority-owned firms were statistically significant. The t-test results provide support that African American, Hispanic American, Asian American, and Native American-owned firms were not available or utilized as prime contractors for construction contracts during the study period.

**EXHIBIT 5-17
REGION 5
CONSTRUCTION
T-TEST RESULTS FOR PRIME CONTRACTORS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.00%	0.00	0.00%	0.00
Hispanic Americans	0.00%	0.00	0.00%	0.00
Asian Americans	0.00%	0.00	0.00%	0.00
Native Americans	0.00%	0.00	0.00%	0.00
Nonminority Women	4.64%	-2.75 *	14.29%	-2.10 *
Nonminority Firms	95.36%	2.75 *	85.71%	2.10 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

Exhibit 5-18 presents the disparity analysis of construction subcontracting activity in Region 5. According to **Exhibit 5-18**, Hispanic Americans, Native Americans, and nonminority women were overutilized as subcontractors on ODOT construction projects over the eight year study period. African American and Asian American firms were not available to perform work as a subcontractor throughout the study period.

**EXHIBIT 5-18
REGION 5
CONSTRUCTION
DISPARITY ANALYSIS OF SUBCONTRACTORS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Subcontract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
All Fiscal Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	6.51%	1.54%	423.03	Overutilization
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	22.55%	1.54%	1,465.52	Overutilization
Nonminority Women	32.41%	20.00%	162.03	Overutilization

5.2.7 Statewide – Construction-Related Professional Services Contracts

In **Exhibit 5-19**, we show the disparity indices for construction-related professional services consultants in the state of Oregon. As in construction contracts, minorities were consistently underutilized overall in the construction-related professional services category. However, in 2004, Native Americans were overutilized. Also, in 2006, Hispanic Americans were overutilized. Nonminority-owned firms were overutilized in each year. In addition:

- African American firms were substantially underutilized as prime contractors, with a disparity index of 0.0.
- Hispanic American firms were substantially underutilized as prime contractors with a disparity index of 32.8.
- Asian American firms were underutilized as prime contractors in this study, with a disparity index of 6.2.
- Native American firms were underutilized as prime contractors with a disparity index of 37.6.
- Nonminority women firms were underutilized as prime contractors with a disparity index of 5.2.
- Nonminority male firms were overutilized as prime contractors, with a disparity index of 184.

The corresponding t-tests for the statewide construction-related professional services contracts, shown in **Exhibit 5-20**, indicate that the respective findings were

statistically significant for nonminority women underutilization, as well as the overutilization of nonminority male firms over the study period. **Exhibit 5-21** shows the disparity indices for construction-related professional services in the state of Oregon. Minorities were statistically underutilized as subconsultants over the eight year study period, except for nonminority women, which were overutilized with a disparity index of 316.5.

**EXHIBIT 5-19
STATEWIDE
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
DISPARITY ANALYSIS OF PRIME CONSULTANTS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
2000				
African Americans	0.70%	3.33%	0.00	Underutilization *
Hispanic Americans	0.13%	3.84%	3.32	Underutilization *
Asian Americans	0.71%	6.15%	11.58	Underutilization *
Native Americans	0.03%	0.90%	3.58	Underutilization *
Nonminority Women	2.16%	33.55%	6.43	Underutilization *
Nonminority Firms	96.27%	52.24%	184.28	Overutilization
2001				
African Americans	0.24%	3.33%	0.00	Underutilization *
Hispanic Americans	0.49%	3.84%	12.83	Underutilization *
Asian Americans	0.29%	6.15%	4.64	Underutilization *
Native Americans	0.62%	0.90%	68.90	Underutilization *
Nonminority Women	1.91%	33.55%	5.70	Underutilization *
Nonminority Firms	96.45%	52.24%	184.63	Overutilization
2002				
African Americans	0.36%	3.33%	0.00	Underutilization *
Hispanic Americans	0.00%	3.84%	0.00	Underutilization *
Asian Americans	0.43%	6.15%	7.04	Underutilization *
Native Americans	0.44%	0.90%	49.53	Underutilization *
Nonminority Women	0.50%	33.55%	1.50	Underutilization *
Nonminority Firms	98.26%	52.24%	188.09	Overutilization
2003				
African Americans	0.43%	3.33%	0.00	Underutilization *
Hispanic Americans	0.07%	3.84%	1.75	Underutilization *
Asian Americans	0.30%	6.15%	4.91	Underutilization *
Native Americans	0.07%	0.90%	7.43	Underutilization *
Nonminority Women	1.92%	33.55%	5.73	Underutilization *
Nonminority Firms	97.21%	52.24%	186.09	Overutilization
2004				
African Americans	0.05%	3.33%	0.00	Underutilization *
Hispanic Americans	0.06%	3.84%	1.58	Underutilization *
Asian Americans	0.48%	6.15%	7.87	Underutilization *
Native Americans	1.07%	0.90%	119.73	Overutilization
Nonminority Women	1.37%	33.55%	4.07	Underutilization *
Nonminority Firms	96.97%	52.24%	185.62	Overutilization
2005				
African Americans	0.01%	3.33%	0.00	Underutilization *
Hispanic Americans	0.02%	3.84%	0.47	Underutilization *
Asian Americans	0.54%	6.15%	8.76	Underutilization *
Native Americans	0.29%	0.90%	32.52	Underutilization *
Nonminority Women	1.27%	33.55%	3.79	Underutilization *
Nonminority Firms	97.87%	52.24%	187.35	Overutilization
2006				
African Americans	0.01%	3.33%	0.00	Underutilization *
Hispanic Americans	4.67%	3.84%	121.58	Overutilization
Asian Americans	0.10%	6.15%	1.61	Underutilization *
Native Americans	0.01%	0.90%	1.50	Underutilization *
Nonminority Women	2.79%	33.55%	8.32	Underutilization *
Nonminority Firms	92.42%	52.24%	176.91	Overutilization
2007				
African Americans	0.08%	3.33%	0.00	Underutilization *
Hispanic Americans	0.05%	3.84%	1.23	Underutilization *
Asian Americans	0.49%	6.15%	7.93	Underutilization *
Native Americans	0.21%	0.90%	23.50	Underutilization *
Nonminority Women	1.08%	33.55%	3.23	Underutilization *
Nonminority Firms	98.09%	52.24%	187.77	Overutilization
All Years				
African Americans	0.13%	3.33%	0.00	Underutilization *
Hispanic Americans	1.26%	3.84%	32.78	Underutilization *
Asian Americans	0.38%	6.15%	6.21	Underutilization *
Native Americans	0.34%	0.90%	37.59	Underutilization *
Nonminority Women	1.73%	33.55%	5.16	Underutilization *
Nonminority Firms	96.16%	52.24%	184.07	Overutilization

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

**EXHIBIT 5-20
STATEWIDE
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
T-TEST RESULTS FOR PRIME CONSULTANTS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.13%	0.00	3.33%	0.00
Hispanic Americans	1.26%	0.00	3.84%	0.00
Asian Americans	0.38%	0.00	6.15%	0.00
Native Americans	0.34%	0.00	0.90%	0.00
Nonminority Women	1.73%	-135.00 *	33.55%	-68.16 *
Nonminority Firms	96.16%	126.48 *	52.24%	63.86 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

**EXHIBIT 5-21
STATEWIDE
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
DISPARITY ANALYSIS OF SUBCONSULTANTS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Subcontract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
All Fiscal Years				
African Americans	0.00%	3.08%	0.00	Underutilization *
Hispanic Americans	0.00%	3.55%	0.00	Underutilization *
Asian Americans	0.00%	5.80%	0.00	Underutilization *
Native Americans	0.00%	0.95%	0.00	Underutilization *
Nonminority Women	100.00%	31.60%	316.48	Overutilization

5.2.8 Region 1 – Construction-Related Professional Services Contracts

In **Exhibit 5-22**, we show the disparity indices for construction-related professional services consultants in Region 1. African Americans, Asian Americans, and nonminority women were consistently underutilized across each year in the construction-related professional services category. In 2001, Native Americans were overutilized and in

2006, Hispanic Americans were overutilized in Region 1. Nonminority-owned firms were overutilized in each year. In addition:

- African American firms were not utilized as prime consultants, with a disparity index of 0.0.
- Hispanic American firms were underutilized in this business category, with a disparity index of 49.4.
- Asian American firms were underutilized as prime consultants in this study, with a disparity index of 9.8.
- Native American firms were underutilized as prime consultants, with a disparity index of 25.1.
- Nonminority women firms were underutilized as prime consultants, with a disparity index of 5.8.
- Nonminority male firms were overutilized as prime consultants, with a disparity index of 191.3.

The corresponding t-tests for the construction-related professional services contracts, shown in **Exhibit 5-23**, indicate that the respective findings were statistically significant for nonminority women, as well as the overutilization of nonminority male firms over the study period. **Exhibit 5-24** shows the disparity indices for construction-related professional services subconsultants. African Americans, Hispanic Americans, Asian Americans, and Native Americans were all substantially underutilized as subconsultants on ODOT construction-related profession services contracts throughout the eight year study period in Region 1. However, nonminority women were overutilized overall throughout the study.

**EXHIBIT 5-22
REGION 1
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
DISPARITY ANALYSIS OF PRIME CONSULTANTS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
2000				
African Americans	1.95%	4.49%	0.00	Underutilization *
Hispanic Americans	0.00%	4.13%	0.00	Underutilization *
Asian Americans	1.97%	7.18%	27.45	Underutilization *
Native Americans	0.00%	1.26%	0.00	Underutilization *
Nonminority Women	4.03%	33.39%	12.06	Underutilization *
Nonminority Firms	92.05%	49.55%	185.77	Overutilization
2001				
African Americans	0.49%	4.49%	0.00	Underutilization *
Hispanic Americans	0.56%	4.13%	13.46	Underutilization *
Asian Americans	0.59%	7.18%	8.21	Underutilization *
Native Americans	1.28%	1.26%	101.49	Overutilization
Nonminority Women	0.91%	33.39%	2.73	Underutilization *
Nonminority Firms	96.17%	49.55%	194.09	Overutilization
2002				
African Americans	0.84%	4.49%	0.00	Underutilization *
Hispanic Americans	0.00%	4.13%	0.00	Underutilization *
Asian Americans	1.01%	7.18%	14.08	Underutilization *
Native Americans	1.04%	1.26%	82.52	Underutilization *
Nonminority Women	0.92%	33.39%	2.75	Underutilization *
Nonminority Firms	96.19%	49.55%	194.13	Overutilization
2003				
African Americans	0.67%	4.49%	0.00	Underutilization *
Hispanic Americans	0.00%	4.13%	0.00	Underutilization *
Asian Americans	0.47%	7.18%	6.58	Underutilization *
Native Americans	0.10%	1.26%	8.30	Underutilization *
Nonminority Women	2.25%	33.39%	6.73	Underutilization *
Nonminority Firms	96.50%	49.55%	194.76	Overutilization
2004				
African Americans	0.08%	4.49%	0.00	Underutilization *
Hispanic Americans	0.04%	4.13%	0.99	Underutilization *
Asian Americans	0.88%	7.18%	12.29	Underutilization *
Native Americans	0.33%	1.26%	26.36	Underutilization *
Nonminority Women	2.14%	33.39%	6.40	Underutilization *
Nonminority Firms	96.53%	49.55%	194.80	Overutilization
2005				
African Americans	0.01%	4.49%	0.00	Underutilization *
Hispanic Americans	0.00%	4.13%	0.00	Underutilization *
Asian Americans	0.65%	7.18%	9.02	Underutilization *
Native Americans	0.35%	1.26%	27.92	Underutilization *
Nonminority Women	0.34%	33.39%	1.02	Underutilization *
Nonminority Firms	98.65%	49.55%	199.09	Overutilization
2006				
African Americans	0.00%	4.49%	0.00	Underutilization *
Hispanic Americans	8.69%	4.13%	210.39	Overutilization
Asian Americans	0.20%	7.18%	2.85	Underutilization *
Native Americans	0.00%	1.26%	0.00	Underutilization *
Nonminority Women	3.79%	33.39%	11.34	Underutilization *
Nonminority Firms	87.32%	49.55%	176.22	Overutilization
2006				
African Americans	0.20%	4.49%	0.00	Underutilization *
Hispanic Americans	0.07%	4.13%	1.79	Underutilization *
Asian Americans	1.26%	7.18%	17.58	Underutilization *
Native Americans	0.55%	1.26%	43.42	Underutilization *
Nonminority Women	1.07%	33.39%	3.22	Underutilization *
Nonminority Firms	96.84%	49.55%	195.44	Overutilization
All Years				
African Americans	0.24%	4.49%	0.00	Underutilization *
Hispanic Americans	2.04%	4.13%	49.37	Underutilization *
Asian Americans	0.70%	7.18%	9.80	Underutilization *
Native Americans	0.32%	1.26%	25.14	Underutilization *
Nonminority Women	1.92%	33.39%	5.75	Underutilization *
Nonminority Firms	94.78%	49.55%	191.28	Overutilization

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

**EXHIBIT 5-23
REGION 1
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
T-TEST RESULTS FOR PRIME CONSULTANTS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.24%	0.00	4.49%	0.00
Hispanic Americans	2.04%	0.00	4.13%	0.00
Asian Americans	0.70%	0.00	7.18%	0.00
Native Americans	0.32%	0.00	1.26%	0.00
Nonminority Women	1.92%	-91.20 *	33.39%	-54.15 *
Nonminority Firms	94.78%	80.83 *	49.55%	47.99 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

**EXHIBIT 5-24
REGION 1
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
DISPARITY ANALYSIS OF SUBCONSULTANTS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Subcontract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
All Fiscal Years				
African Americans	0.00%	4.31%	0.00	Underutilization *
Hispanic Americans	0.00%	3.97%	0.00	Underutilization *
Asian Americans	0.00%	7.07%	0.00	Underutilization *
Native Americans	0.00%	1.38%	0.00	Underutilization *
Nonminority Women	100.00%	32.59%	306.88	Overutilization

5.2.9 Region 2 – Construction-Related Professional Services Contracts

In **Exhibit 5-25**, we show the disparity indices for construction-related professional services consultants in Region 2. Minorities were consistently underutilized across each year in the construction-related professional services category. Nonminority-owned firms were overutilized in each year. In addition:

- African American firms were not utilized as prime consultants, resulting in a disparity index of 0.0.

- Hispanic American firms were underutilized in this business category, thus the disparity index of 16.1.
- Asian American firms were not utilized as prime consultants in this study, resulting in a disparity index of 0.0.
- Native American firms were not utilized as prime consultants.
- Nonminority women firms were underutilized as prime consultants with a disparity index of 6.2.
- Nonminority male firms were overutilized as prime consultants, with a disparity index of 167.8.

The corresponding t-tests for the construction-related professional services contracts, shown in **Exhibit 5-26**, indicate that the respective findings were statistically significant for nonminority women underutilization, as well as the overutilization of nonminority male firms over the study period. **Exhibit 5-27** shows the disparity indices for construction-related professional services subconsultants in Region 2. Nonminority women were overutilized over the eight-year study period as subconsultants on ODOT federal construction-related professional services contracts.

**EXHIBIT 5-25
REGION 2
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
DISPARITY ANALYSIS OF PRIME CONSULTANTS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
2000				
African Americans	0.00%	0.64%	0.00	Underutilization *
Hispanic Americans	0.33%	3.18%	10.42	Underutilization *
Asian Americans	0.00%	3.82%	0.00	Underutilization *
Native Americans	0.08%	0.64%	0.00	Underutilization *
Nonminority Women	1.83%	34.39%	5.32	Underutilization *
Nonminority Firms	97.76%	57.32%	170.53	Overutilization
2001				
African Americans	0.00%	0.64%	0.00	Underutilization *
Hispanic Americans	0.61%	3.18%	19.18	Underutilization *
Asian Americans	0.00%	3.82%	0.00	Underutilization *
Native Americans	0.00%	0.64%	0.00	Underutilization *
Nonminority Women	4.01%	34.39%	11.67	Underutilization *
Nonminority Firms	95.37%	57.32%	166.38	Overutilization
2002				
African Americans	0.00%	0.64%	0.00	Underutilization *
Hispanic Americans	0.00%	3.18%	0.00	Underutilization *
Asian Americans	0.00%	3.82%	0.00	Underutilization *
Native Americans	0.00%	0.64%	0.00	Underutilization *
Nonminority Women	0.25%	34.39%	0.73	Underutilization *
Nonminority Firms	99.75%	57.32%	174.01	Overutilization
2003				
African Americans	0.00%	0.64%	0.00	Underutilization
Hispanic Americans	0.32%	3.18%	10.09	Underutilization *
Asian Americans	0.00%	3.82%	0.00	Underutilization *
Native Americans	0.00%	0.64%	0.00	Underutilization *
Nonminority Women	2.32%	34.39%	6.76	Underutilization *
Nonminority Firms	97.36%	57.32%	169.83	Overutilization
2004				
African Americans	0.00%	0.64%	0.00	Underutilization
Hispanic Americans	0.10%	3.18%	3.17	Underutilization *
Asian Americans	0.00%	3.82%	0.00	Underutilization *
Native Americans	3.46%	0.64%	0.00	Underutilization *
Nonminority Women	0.73%	34.39%	2.14	Underutilization *
Nonminority Firms	95.71%	57.32%	166.96	Overutilization
2005				
African Americans	0.00%	0.64%	0.00	Underutilization *
Hispanic Americans	0.16%	3.18%	5.16	Underutilization *
Asian Americans	0.00%	3.82%	0.00	Underutilization *
Native Americans	0.00%	0.64%	0.00	Underutilization *
Nonminority Women	8.38%	34.39%	24.36	Underutilization *
Nonminority Firms	91.46%	57.32%	159.54	Overutilization
2006				
African Americans	0.01%	0.64%	0.00	Underutilization
Hispanic Americans	1.39%	3.18%	43.65	Underutilization *
Asian Americans	0.00%	3.82%	0.00	Underutilization *
Native Americans	0.00%	0.64%	0.00	Underutilization *
Nonminority Women	2.48%	34.39%	7.20	Underutilization *
Nonminority Firms	96.12%	57.32%	167.68	Overutilization
2007				
African Americans	0.00%	0.64%	0.00	Underutilization
Hispanic Americans	0.05%	3.18%	1.44	Underutilization *
Asian Americans	0.00%	3.82%	0.00	Underutilization *
Native Americans	0.00%	0.64%	0.00	Underutilization *
Nonminority Women	1.32%	34.39%	3.84	Underutilization *
Nonminority Firms	98.63%	57.32%	172.06	Overutilization
All Years				
African Americans	0.00%	0.64%	0.00	Underutilization *
Hispanic Americans	0.52%	3.18%	16.22	Underutilization *
Asian Americans	0.00%	3.82%	0.00	Underutilization *
Native Americans	0.55%	0.64%	0.00	Underutilization *
Nonminority Women	2.13%	34.39%	6.19	Underutilization *
Nonminority Firms	96.80%	57.32%	168.86	Overutilization

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

**EXHIBIT 5-26
REGION 2
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
T-TEST RESULTS FOR PRIME CONSULTANTS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.00%	0.00	0.64%	0.00
Hispanic Americans	0.52%	0.00	3.18%	0.00
Asian Americans	0.00%	0.00	3.82%	0.00
Native Americans	0.55%	0.00	0.64%	0.00
Nonminority Women	2.13%	-65.84 *	34.39%	-28.02 *
Nonminority Firms	96.80%	66.05 *	57.32%	28.11 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

**EXHIBIT 5-27
REGION 2
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
DISPARITY ANALYSIS OF SUBCONSULTANTS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Subcontract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
All Fiscal Years				
African Americans	0.00%	0.57%	0.00	Underutilization *
Hispanic Americans	0.00%	2.84%	0.00	Underutilization *
Asian Americans	0.00%	3.41%	0.00	Underutilization *
Native Americans	0.00%	0.57%	0.00	Underutilization *
Nonminority Women	100.00%	31.82%	314.29	Overutilization

5.2.10 Region 3 – Construction-Related Professional Services Contracts

In Exhibit 5-28, we show the disparity indices for construction-related professional services consultants in Region 3. Hispanic Americans and nonminority women were the only available minorities to perform work as a prime consultant in Region 3 construction-related professional services contracts. Both nonminority women and Hispanic

Americans were consistently underutilized across each year of the study period.

Nonminority-owned firms were overutilized each year. In addition:

- African American firms were not available as prime consultants.
- Hispanic American firms were not utilized in this business category, thus the disparity index of 0.0.
- Asian American firms were not available as prime consultants.
- Native American firms were not available as prime consultants.
- Nonminority women firms were underutilized as prime consultants with a disparity index of 11.8.
- Nonminority male firms were overutilized as prime consultants, with a disparity index of 135.2.

The corresponding t-tests for the construction-related professional services contracts, shown in **Exhibit 5-29**, indicate that the respective findings were statistically significant for nonminority women underutilization, as well as the overutilization of nonminority male firms over the study period.

**EXHIBIT 5-28
REGION 3
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
DISPARITY ANALYSIS OF PRIME CONSULTANTS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
2000				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	6.25%	0.00	Underutilization*
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	21.88%	0.00	Underutilization*
Nonminority Firms	100.00%	71.88%	139.13	Overutilization
2001				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	6.25%	0.00	Underutilization*
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	21.88%	0.00	Underutilization*
Nonminority Firms	100.00%	71.88%	139.13	Overutilization
2002				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	6.25%	0.00	Underutilization*
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	21.88%	0.00	Underutilization*
Nonminority Firms	100.00%	71.88%	139.13	Overutilization
2003				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	6.25%	0.00	Underutilization*
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	21.88%	0.00	Underutilization*
Nonminority Firms	100.00%	71.88%	139.13	Overutilization
2004				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	6.25%	0.00	Underutilization*
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	21.88%	0.00	Underutilization*
Nonminority Firms	100.00%	71.88%	139.13	Overutilization
2005				
African Americans	0.00%	0.00%	0.00	Underutilization*
Hispanic Americans	0.00%	6.25%	0.00	Underutilization*
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	21.88%	0.00	Underutilization*
Nonminority Firms	100.00%	71.88%	139.13	Overutilization
2006				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	6.25%	0.00	Underutilization*
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.46%	0.00%	0.00	Not Applicable
Nonminority Women	3.86%	21.88%	17.63	Underutilization*
Nonminority Firms	95.68%	71.88%	133.12	Overutilization
2007				
African Americans	0.00%	0.00%	0.00	Underutilization*
Hispanic Americans	0.00%	6.25%	0.00	Underutilization*
Asian Americans	0.00%	0.00%	0.00	Underutilization*
Native Americans	0.00%	0.00%	0.00	Underutilization*
Nonminority Women	2.80%	21.88%	12.80	Underutilization*
Nonminority Firms	97.20%	71.88%	135.24	Overutilization
All Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	6.25%	0.00	Underutilization*
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.23%	0.00%	0.00	Not Applicable
Nonminority Women	2.57%	21.88%	11.76	Underutilization*
Nonminority Firms	97.20%	71.88%	135.24	Overutilization

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

**EXHIBIT 5-29
REGION 3
PROFESSIONAL SERVICES
T-TEST RESULTS FOR PRIME CONSULTANTS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.00%	0.00	0.00%	0.00
Hispanic Americans	0.00%	0.00	6.25%	0.00
Asian Americans	0.00%	0.00	0.00%	0.00
Native Americans	0.23%	0.00	0.00%	0.00
Nonminority Women	2.57%	-13.07 *	21.88%	-6.90 *
Nonminority Firms	97.20%	16.47 *	71.88%	8.69 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

5.2.11 Region 4 – Construction-Related Professional Services Contracts

In **Exhibit 5-30**, we show the disparity indices for construction-related professional services consultants in Region 4. Asian Americans and nonminority women were consistently underutilized across each year in the construction-related professional services category. Nonminority-owned firms were overutilized in each year. In addition:

- African American firms were not available or utilized as prime consultants.
- Hispanic American firms were not available or utilized as prime consultants.
- Asian American firms were not utilized as prime consultants in this study, with a disparity index of 0.0.
- Native American firms were not available or utilized as prime consultants.
- Nonminority women firms were underutilized as prime consultants with a disparity index of .11.
- Nonminority male firms were overutilized as prime consultants, with a disparity index of 173.3.

The corresponding t-tests for the construction-related professional services contracts, shown in **Exhibit 5-31**, indicate that the respective findings were statistically significant for nonminority women underutilization, as well as the overutilization of nonminority male firms over the study period in Region 4.

**EXHIBIT 5-30
REGION 4
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
DISPARITY ANALYSIS OF PRIME CONSULTANTS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars ¹	% of Available Firms ²	Disparity Index ³	Disparate Impact of Utilization
2000				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	7.69%	0.00	Underutilization *
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	34.62%	0.00	Underutilization *
Nonminority Firms	100.00%	57.69%	173.33	Overutilization
2001				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	7.69%	0.00	Underutilization *
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	34.62%	0.00	Underutilization *
Nonminority Firms	100.00%	57.69%	173.33	Overutilization
2002				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	7.69%	0.00	Underutilization *
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	34.62%	0.00	Underutilization *
Nonminority Firms	100.00%	57.69%	173.33	Overutilization
2003				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	7.69%	0.00	Underutilization *
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	34.62%	0.00	Underutilization *
Nonminority Firms	100.00%	57.69%	173.33	Overutilization
2004				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	7.69%	0.00	Underutilization *
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.04%	34.62%	0.10	Underutilization *
Nonminority Firms	99.96%	57.69%	173.27	Overutilization
2005				
African Americans	0.00%	0.00%	0.00	Underutilization *
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	7.69%	0.00	Underutilization *
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	34.62%	0.00	Underutilization *
Nonminority Firms	100.00%	57.69%	173.33	Overutilization
2006				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	7.69%	0.00	Underutilization *
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.11%	34.62%	0.32	Underutilization *
Nonminority Firms	99.89%	57.69%	173.14	Overutilization
2007				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	7.69%	0.00	Underutilization *
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	34.62%	0.00	Underutilization *
Nonminority Firms	100.00%	57.69%	173.33	Overutilization
All Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	0.00%	0.00	Not Applicable
Asian Americans	0.00%	7.69%	0.00	Underutilization *
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.04%	34.62%	0.11	Underutilization *
Nonminority Firms	99.96%	57.69%	173.27	Overutilization

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

**EXHIBIT 5-31
REGION 4
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
T-TEST RESULTS FOR PRIME CONSULTANTS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.00%	0.00	0.00%	0.00
Hispanic Americans	0.00%	0.00	0.00%	0.00
Asian Americans	0.00%	0.00	7.69%	0.00
Native Americans	0.00%	0.00	0.00%	0.00
Nonminority Women	0.04%	-375.47 *	34.62%	-90.76 *
Nonminority Firms	99.96%	459.00 *	57.69%	110.95 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

5.2.12 Region 5 – Construction-Related Professional Services Contracts

In **Exhibit 5-32**, we show the disparity indices for construction-related professional services consultants in Region 5. Nonminority women and Hispanic Americans were the only minority groups available to perform work as prime consultants in Region 5 construction-related professional services contracts. Nonminority women and Hispanic Americans were consistently underutilized across each year in the construction-related professional services category. Nonminority-owned firms were overutilized in each year. In addition:

- African American firms were not available or utilized as prime consultants.
- Hispanic American firms were not utilized as prime consultants, thus the disparity index of 0.0.
- Asian American firms were not available or utilized as prime consultants.
- Native American firms were not available or utilized as prime consultants.

- Nonminority women firms were underutilized as prime consultants with a disparity index of 9.8.
- Nonminority male firms were overutilized as prime consultants, with a disparity index of 141.2.

The corresponding t-tests for the professional services contracts, shown in **Exhibit 5-33**, indicate that the respective findings were statistically significant for nonminority women underutilization, as well as the overutilization of nonminority male firms over the study period.

**EXHIBIT 5-32
REGION 5
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
DISPARITY ANALYSIS OF PRIME CONSULTANTS
IN THE RELEVANT MARKET AREA
BY RACE/ETHNICITY/GENDER CLASSIFICATION
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	% of Contract Dollars¹	% of Available Firms²	Disparity Index³	Disparate Impact of Utilization
2000				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	5.00%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	30.00%	0.00	Underutilization *
Nonminority Firms	100.00%	65.00%	153.85	Overutilization
2001				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	5.00%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	30.00%	0.00	Underutilization *
Nonminority Firms	100.00%	65.00%	153.85	Overutilization
2002				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	5.00%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	30.00%	0.00	Underutilization *
Nonminority Firms	100.00%	65.00%	153.85	Overutilization
2003				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	5.00%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	30.00%	0.00	Underutilization *
Nonminority Firms	100.00%	65.00%	153.85	Overutilization
2004				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.80%	5.00%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	30.00%	0.00	Underutilization *
Nonminority Firms	99.20%	65.00%	152.61	Overutilization
2005				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	5.00%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	11.70%	30.00%	38.99	Underutilization *
Nonminority Firms	88.30%	65.00%	135.85	Overutilization
2006				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	5.00%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	0.00%	30.00%	0.00	Underutilization *
Nonminority Firms	100.00%	65.00%	153.85	Overutilization
2007				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.00%	5.00%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	5.29%	30.00%	17.62	Underutilization *
Nonminority Firms	94.71%	65.00%	145.72	Overutilization
All Years				
African Americans	0.00%	0.00%	0.00	Not Applicable
Hispanic Americans	0.33%	5.00%	0.00	Underutilization *
Asian Americans	0.00%	0.00%	0.00	Not Applicable
Native Americans	0.00%	0.00%	0.00	Not Applicable
Nonminority Women	3.08%	30.00%	10.28	Underutilization *
Nonminority Firms	96.59%	65.00%	148.59	Overutilization

¹ The percentage of dollars is taken from the prime utilization exhibit previously shown in Chapter 3.0.

² The percentage of available contractors is taken from the availability exhibit previously shown in Chapter 3.0.

³ The disparity index is the ratio of % utilization to % availability times 100.

* An asterisk is used to indicate a substantial level of disparity – index below 80.00.

**EXHIBIT 5-33
REGION 5
CONSTRUCTION-RELATED PROFESSIONAL SERVICES
T-TEST RESULTS FOR PRIME CONSULTANTS
BASED ON VENDOR DATA
OCTOBER 1, 1999 THROUGH SEPTEMBER 30, 2007**

Business Owner Classification	Contract Dollars¹	T-Value for Contract Dollars	% of Available Firms²	T-Value for Available Firms
African Americans	0.00%	0.00	0.00%	0.00
Hispanic Americans	0.33%	0.00	5.00%	0.00
Asian Americans	0.00%	0.00	0.00%	0.00
Native Americans	0.00%	0.00	0.00%	0.00
Nonminority Women	3.08%	-11.75 *	30.00%	-6.96 *
Nonminority Firms	96.59%	13.13 *	65.00%	7.78 *

¹ Percentage of related prime contract dollars awarded to firms within the relevant market area.

² Percentage of available firms in the relevant market area.

* Statistically significant at the 0.05 level.

N/A denotes that the t-test cannot be applied in these cases due to the mathematical constraint of division by zero. This occurred because there is zero utilization in this category. Because the utilization percentage is the denominator in the final calculation for the t-test value, the existence of disparity can be inferred due to the prima facie evidence of zero utilization levels.

**EXHIBIT 5-33
SUMMARY OF MINORITY UNDERUTILIZATION
STATEWIDE**

Business Category	African American	Hispanic American	Asian American	Native American	Nonminority Women
Construction Primes	N/A	Yes	Yes	Yes	Yes
Construction Subcontractors	Yes	No	Yes	No	No
Construction-Related Professional Services Consultants	Yes	Yes	Yes	Yes	Yes
Construction-Related Professional Services Subconsultants	Yes	Yes	Yes	Yes	No

**EXHIBIT 5-33
SUMMARY OF MINORITY UNDERUTILIZATION
REGION 1**

Business Category	African American	Hispanic American	Asian American	Native American	Nonminority Women
Construction Primes	N/A	Yes	Yes	No	Yes
Construction Subcontractors	Yes	No	Yes	No	Yes
Construction-Related Professional Services Consultants	Yes	Yes	Yes	Yes	Yes
Construction-Related Professional Services Subconsultants	Yes	Yes	Yes	Yes	No

**EXHIBIT 5-33
SUMMARY OF MINORITY UNDERUTILIZATION
REGION 2**

Business Category	African American	Hispanic American	Asian American	Native American	Nonminority Women
Construction Primes	N/A	Yes	Yes	Yes	Yes
Construction Subcontractors	N/A	No	No	Yes	No
Construction-Related Professional Services Consultants	Yes	Yes	Yes	Yes	Yes
Construction-Related Professional Services Subconsultants	Yes	Yes	Yes	Yes	No

**EXHIBIT 5-33
SUMMARY OF MINORITY UNDERUTILIZATION
REGION 3**

Business Category	African American	Hispanic American	Asian American	Native American	Nonminority Women
Construction Primes	N/A	Yes	Yes	Yes	Yes
Construction Subcontractors	Yes	No	Yes	No	No
Construction-Related Professional Services Consultants	N/A	Yes	N/A	N/A	Yes
Construction-Related Professional Services Subconsultants	N/A	N/A	N/A	N/A	N/A

**EXHIBIT 5-33
SUMMARY OF MINORITY UNDERUTILIZATION
REGION 4**

Business Category	African American	Hispanic American	Asian American	Native American	Nonminority Women
Construction Primes	N/A	N/A	N/A	N/A	Yes
Construction Subcontractors	N/A	Yes	Yes	Yes	No
Construction-Related Professional Services Consultants	N/A	N/A	Yes	N/A	Yes
Construction-Related Professional Services Subconsultants	N/A	N/A	N/A	N/A	N/A

**EXHIBIT 5-33
SUMMARY OF MINORITY UNDERUTILIZATION
REGION 5**

Business Category	African American	Hispanic American	Asian American	Native American	Nonminority Women
Construction Primes	N/A	N/A	N/A	N/A	Yes
Construction Subcontractors	N/A	No	N/A	No	No
Construction-Related Professional Services Consultants	N/A	Yes	N/A	N/A	Yes
Construction-Related Professional Services Subconsultants	N/A	N/A	N/A	N/A	N/A