

**Annual Report to the  
Governor and Legislature**

**Use of Project Labor Agreements  
in Public Works Building Projects  
in Fiscal Year 2008**

**As Required by the  
Project Labor Agreement (PLA) Act  
P.L. 2002, Chapter 44  
(C.52:38-et seq.)**

**New Jersey Department of Labor  
And Workforce Development  
October 2010**

## Table of Contents

	Page
Executive Summary	3
Introduction	5
Data Sources and Methodology	6
Presentation of Available Data	9
Use of Project Labor Agreements in Public Projects	9
Project Awards	11
Building Costs	12
Employment Work Hours for Minorities, Females and Apprentices	14
Employment Work Hours for Minorities and Apprentices by Construction Trade	17
Construction Duration	20
Appendix I : Cost Information for Completed New Schools, July 2002 to June 2007	21
Appendix II : Regression Estimates	29
Appendix III : Minority, Female and Apprentice Construction Employment Participation Rates for All Projects	30
Appendix IV: Project Durations for PLA and Non-PLA School Projects	34

## EXECUTIVE SUMMARY

The Project Labor Agreement Act (P.L. 2002, Chapter 44) which was signed into law on July 25, 2002, authorized the use of Project Labor Agreements (PLAs) on public works building projects in New Jersey with total costs of \$5 million or more. The Act specifies that beginning December 31, 2003, an annual report evaluating the effectiveness of projects utilizing Project Labor Agreements be prepared by the Commissioner of Labor and Workforce Development.

This report summarizes the public building projects which were completed from July 1, 2007 through June 30, 2008. The report, based on data provided by the Department of the Treasury, Division of Contract Compliance and Equal Employment Opportunity in Public Contracts and the School Development Authority (SDA), summarizes:

- Use of Project Labor Agreements (PLAs)
- Cost and duration of public building projects that use PLAs compared to those that do not use PLAs, and
- Minority and apprentice participation in both PLA and non-PLA projects.

The comparative analysis in this report again focuses on completed school projects because of the relatively small number to-date of PLA non-school projects (3) compared with non-PLA, non-school public building projects (123). The report has four primary findings.

### Finding #1. Usage of PLAs

- **Project Labor Agreements continued to be used on a limited basis in public works building projects in the State and continued to be used nearly exclusively for school construction projects.**

Only 12 of the 108 (11%) eligible public works building projects completed in FY 2008 used a PLA. Of the eligible projects completed between July 2002 and June 2007, only 19% (a total of 58) used a PLA. Of the 72 school projects completed in FY 2008, 12 used a PLA and 60 did not use a PLA. None of the 36 other non-school building projects used a PLA.

Eleven new schools were completed during FY 2008, below the average annual rate of the previous four years (16). The majority of new schools completed during FY 2008 were constructed using a PLA (8). Since the enactment of the PLA Act in 2002 to date, a total of 409 construction projects meeting the PLA criteria have been completed. Of these 409 total projects, 70 (17.1%) used PLAs, with projects administered by the Schools Development Authority (SDA) accounting for nearly 96 percent (67), or all but three of the PLA projects identified to date.

### Finding #2. Building Costs

- **School projects that used a PLA tended to have higher building costs, as measured on a per square footage and per student basis, than those that do not use a PLA.**

The building cost analysis in the current report compares the awarded cost of new school construction for both PLA and non-PLA schools from July 2002 through June 2008 and is based on 40 PLA new school projects and 35 non-PLA new school projects. The Department of Treasury does not collect information on the total final cost of projects, thus limiting this analysis to a comparison of initial contracted costs.

The average indexed cost per square foot and the average indexed cost per student were both higher for all categories of PLA new schools than for non-PLA new schools. The indexed cost per square foot for all PLA projects was \$260.00, or 30.5 percent higher than for all non-PLA projects, which averaged \$199.19 per square foot. When statistical analysis was used to control for the effects of region, type of

school and size of school on building costs, overall, the average cost of PLA school projects appeared to be higher than that of non-PLA school projects. However, the nature of school projects administered by the SDA may differ from non-PLA school projects in ways that could affect building costs. There are also other data elements not currently available which could potentially allow a better analysis of building costs, including the number of stories in the building, and, for SDA projects, the planned completion date (planned completion date is available in the DCC database).

#### Finding #3. Duration

- **PLA projects tended to have a longer duration than non-PLA projects.**

For fiscal year 2008, the average duration of PLA projects (12) was 100 weeks compared with 78 weeks for non-PLA projects (60). A variety of factors may explain this difference in duration.

The average construction duration for all 72 school projects completed from July 1, 2007 through June 30, 2008 was 81 weeks, compared to 94 weeks for the 59 school projects completed during the previous fiscal year.

#### Finding #4. Minority and Apprentice Participation

- **While PLA projects had a slightly higher rate of minority employment participation than non-PLA projects, both types of projects fell short of their goals.**

During FY 2008, the actual minority employment participation rate on PLA school projects was 24.8 percent, below the goal obligation of 36.4 percent, while the actual minority participation rate for non-PLA school projects of 18.8 percent was slightly below the target participation rate of 20.0 percent.

Statewide apprentice participation rates in FY 2008 were 8.6 percent for PLA construction projects, compared with 10.5 percent for non-PLA projects. During FY 2007, the statewide apprentice participation rate for PLA projects was 11.3 percent, while non-PLA projects had an apprentice participation rate of 9.4 percent.

## INTRODUCTION

On July 25, 2002, the “Project Labor Agreement Act” (P.L. 2002, Chapter 44) was signed into law. The law authorizes all public agencies (state, county, municipal, others) in New Jersey to include project labor agreements (PLAs) in all public works projects for the construction, reconstruction, demolition or renovation of buildings (other than pumping stations and water/sewage treatment plants) at public expense, for which the total cost of the project, exclusive of land acquisition cost, will equal or exceed \$5 million.

Project labor agreements are a form of pre-hire collective bargaining agreements permitted under State law between a public agency or its representative or a construction manager and one or more labor organizations. The project labor agreement is binding on all public works contractors and subcontractors working on the project and concerns important issues of employment, including work hours, starting times, and procedures for resolving disputes. Project labor agreements cover project terms and conditions of employment for construction trade workers, and are often used for major, multi-year construction projects. Project labor agreements typically require contractors to hire employees through the union hall referral systems. In return for this advantage, the unions agree to a no strike and no work stoppage provision.

A model public works PLA between the New Jersey Schools Development Authority (SDA), formerly the Schools Construction Corporation (SCC), the New Jersey Building and Construction Trades Council and several construction trade unions was completed on February 28, 2003.

The PLA Act spells out New Jersey’s compelling interest in carrying out public works projects to meet certain beneficial business and public policy performance objectives. Project labor agreement projects are expected to: advance public interests with respect to costs; efficiency; quality; timeliness of completion; the use of skilled labor; guarantees against strikes, work stoppages, or similar actions; and the effective resolution of jurisdictional and labor disputes. These projects also require contractors to have an apprenticeship program and to implement set-aside goals for women- and minority-owned businesses. The PLA Act also requires each agreement to achieve employment and apprenticeship shares for minorities and women in conformance with applicable requirements, as well as to allow the contracting agency or another State agency to monitor the amount and share of work performed by minorities and women and their progression into apprentice and journey worker positions.

The PLA Act requires the Commissioner of Labor and Workforce Development (LWD) to annually provide an analysis and comparison of PLA and non-PLA projects.<sup>1</sup> The 2008 PLA Report primarily analyzes information for projects completed during the one-year period from July 1, 2007 through June 30, 2008, similar to the format of the 2007 PLA report which evaluated annual data obtained from July 1, 2006 to June 2007. While the focus of the 2008 report is on annual data, any significant differences between the periods are also discussed. To date, most of the projects completed with a PLA have been school projects; therefore, the comparative analysis focuses primarily on completed school projects. The data sources and methodology for this report are presented in the following section.

---

<sup>1</sup> While the annual report was in part intended to evaluate the effectiveness of project labor agreements in advancing the public interests of safety, efficiency, quality, timeliness and skilled labor force of public works projects, there are no data available to measure these goals.

## **DATA SOURCES AND METHODOLOGY**

### **DATA SOURCES**

The obligation to evaluate and report on the effectiveness of the PLA Act entails, first and foremost, a considerable data collection effort and a comprehensive retrospective analysis of the many different public construction projects in New Jersey. When LWD research staff began to plan ways to compile the information needed for the annual reports, it was reasoned that it would not be in the best interest of New Jersey to create a new, costly, unfunded, computerized database if LWD could get access to appropriate existing data collection systems at other State agencies. Consequently, various State agencies were contacted to identify the availability and accessibility of suitable operational data collection systems, which could serve the needs of LWD. After careful consideration, it was concluded that the New Jersey Department of the Treasury, Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (DCC); the New Jersey Schools Development Authority (SDA), previously called the Schools Construction Corporation (SCC); and the New Jersey Department of Education (DOE) could be of valuable assistance as primary data sources. LWD believes that the use of these primary data providers is the best way to systematically, routinely, comprehensively and cost-effectively collect PLA and non-PLA project information.

Neither the DCC nor the SDA tracking system was originally designed with the objective to monitor the implementation of the PLA Act. The DCC database primarily functions as a workforce compliance and equal employment opportunity in public contracts monitoring system. The SDA tracking system mainly serves as a school construction planning and management tool. Therefore, project-specific information are not available on: safety; strikes, lockouts or other similar actions; specific contractor and subcontractor apprenticeship programs; set-aside goals for contracts which should be issued to minority- and women-owned businesses; and other project performance indicators, such as final construction costs, efficiency, quality and, in some instances, timeliness.

#### **Division of Contract Compliance and Equal Employment Opportunity in Public Contracts, New Jersey Department of the Treasury**

The Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (DCC) tracks certain information on all State construction contracts and has become a significant contributor of raw data. To formalize this critical relationship, a Memorandum of Understanding was negotiated and signed on February 11, 2004 between the New Jersey Department of the Treasury, the Office of Information Technology, and the New Jersey Department of Labor and Workforce Development. DCC agreed to modify its tracking forms to include the designation of all projects as PLA or non-PLA. The DCC database includes all non-school public projects plus school projects not administered by the SDA. Of great benefit is their information on the use of minority, female and apprentice employees in public works contracts. If the private construction contractors correctly and responsibly fill out the required reports, it should be possible to analyze this important public policy issue. Appropriate access to the DCC database has been established which gives LWD the capabilities to review the monitored projects.

LWD received electronically the most recent updated database from DCC covering all public works projects in New Jersey through June 2008, which was the cut-off date for the analysis. Several screens and hundreds of individual examinations, validations and queries were subsequently applied to obtain relevant information for the 96 Treasury-monitored projects completed from July 1, 2007 through June 30, 2008 which are included in this analysis.

**New Jersey Schools Development Authority (SDA)  
(Previously named: Schools Construction Corporation (SCC))**

On July 29, 2002, Governor James E. McGreevey signed Executive Order No. 24, creating the New Jersey Schools Construction Corporation, as a subsidiary corporation of the New Jersey Economic Development Authority (EDA). Executive Order No. 24 spelled out several objectives, with the essential purpose to ensure that the State's \$8.6 billion schools construction program, required by the New Jersey Supreme Court's 1998 Abbott decision, is implemented in an efficient and timely manner. On February 7, 2006, Governor Jon S. Corzine signed Executive Order No. 3 creating a new working group to oversee a full review of the schools construction program. The group issued an initial written report on March 15, 2006, recommending various reforms.

On August 6, 2007, legislation creating the New Jersey Schools Development Authority (SDA) was signed into law by Governor Jon S. Corzine. The SDA, an independent authority in but not of the Department of Treasury, is the successor to the New Jersey Schools Construction Corporation (SCC). The SDA is no longer a subsidiary of the EDA, though the EDA retains its role to provide financing for the SDA if new bonding authorization is approved by the legislature. The legislation mandated that the Governor appoint and the Senate confirm new SDA members with backgrounds directly relevant to the Authority's mission. These members collectively function as a board. Other reforms included creating a process that will allow Abbott districts to take on the responsibility to manage and construct their own projects, if they demonstrate the eligibility and capacity, with the SDA retaining ultimate responsibility for the project.

The SDA is responsible for financing, designing, and constructing all of the school facilities projects: in the 31 Abbott districts (special needs districts); in districts which receive 55 percent or more in State funding for education; and in the districts that are in level II State monitoring (districts that failed to show sufficient educational progress and are required to develop and implement a remedial plan). In the Abbott districts, the State provides 100 percent of the funding without the need for a voter referendum and without any financial, operational or management responsibility by local stakeholders. All school projects over \$5 million in these districts have been constructed by the SDA under a PLA. In addition, the SDA is responsible for providing grants to fund the State share of school facilities projects approved by the Department of Education in districts with a district aid percentage of less than 55 percent (Section 15 districts<sup>2</sup>). Those districts, which receive less than 55 percent funding may elect to have the SDA undertake construction of their school facilities projects.

In the past, the DCC tracked all public works projects including schools. The monitoring of Abbott school projects was transferred to the SDA in November 2003, and the SDA elected to develop its own data monitoring system to track all school projects under its oversight. In response to a March 10, 2004 letter from the Commissioner of Labor and Workforce Development to the SCC Chief Executive Officer, the SDA agreed to provide LWD appropriate access to its computerized database. The SDA supplied LWD with updated data for 11 completed school projects with a cut-off date of June 30, 2008 in addition to previously supplied data on 55 completed school projects; one PLA school project completed during fiscal year 2008 was monitored by the DCC and data were obtained from the Treasury database.

Fifty-nine of the cumulative total of completed SDA school projects were in Abbott districts, while eight projects were in non-Abbott districts,<sup>3</sup> including: two school projects in Manchester Township, Ocean

---

<sup>2</sup>Stipulated in the New Jersey Educational Facilities Construction and Financing Act which became law on July 18, 2000.

<sup>3</sup> Subsequent to 2008 changes in the law, SDA is no longer permitted to manage construction of projects in non-Abbott districts.

County; two projects in Barnegat, Ocean County; two projects in Egg Harbor Township, Atlantic County; one project in Clark, Union County and one project in Fairfield, Cumberland County.

### **New Jersey Department of Education (DOE)**

Beginning as an enhancement to the 2006 report, and continuing with the 2007 and 2008 reports, DOE has provided data to LWD for conducting a comparative cost analysis of PLA and non-PLA school projects. DOE provided information regarding the size (square footage) and student capacity from the identified completed new schools. The DOE data has assisted in the analysis of the building cost aspects of PLA and non-PLA schools.

The definitions used by DOE for student capacity are as follows: “Student capacity” means the ideal number of full-time equivalent students for which the school is designed in order to have sufficient space for the building to be educationally adequate for the delivery of programs and services necessary for student achievement of the Core Curriculum Content Standards. Student capacity is 100 percent of maximum capacity in the case of early childhood centers, 90 percent of maximum capacity in the case of elementary schools and middle schools, and 85 percent of maximum capacity in the case of high schools. The DOE also points out that the data are self-reported by the school districts and not necessarily validated.

### **METHODOLOGY**

To complete the evaluation on the effectiveness of the PLA Act required the identification of the appropriate public works projects in New Jersey. Therefore, edits were applied to the DCC and SDA databases to eliminate all projects awarded prior to July 25, 2002, and all projects not completed by the cut-off date of June 30, 2008. Other screens eliminated all pumping stations and water/sewerage treatment plants, as well as all non-buildings, such as roads (improvements, re-surfacing, paving and drainage), tunnels, bridges, and golf courses. Following this, projects with less than \$5 million in estimated total costs were excluded. At the end of this process, 108 new projects were identified for FY 2008, for a cumulative total of 409 PLA and non-PLA projects for the period July 25, 2002 to June 30, 2008.

In most cases, the 2008 analysis evaluated annual data, but some statistics have been examined on a cumulative basis, including building costs. In order to inflation-adjust the cost of projects completed in different years, the analysis applied the building cost index available on the U.S. Navy Facilities Cost Engineering website. All projects were indexed up to June 2008.

All information entered into the databases are self-reported and provided by the construction contractors themselves. The information was not audited. SDA and Treasury field representatives may occasionally catch an obvious error and question certain data, but in the end, the responsibility for and ownership of the information’s accuracy and quality rests with the reporting contractors. LWD checks the records and attempts to validate the information for reasonableness.

Comparing a sufficient number of PLA and non-PLA projects with similar characteristics, such as location, type of project (elementary school, municipal building), construction mode (new, renovation or addition) and building size, was challenging. All Abbott and “fifty-five (55) percent plus” school district projects must be covered by PLAs. Because districts differ with respect to population and occupational characteristics and workforce readiness, geographic location, cost (urban vs. suburban, North versus South Jersey) and construction work site environment/logistics (congested inner city versus open suburban space), differences between projects with and without PLAs could certainly be due to factors other than the use of PLAs.



**PRESENTATION OF AVAILABLE DATA**

**Use of Project Labor Agreements in Public Projects in New Jersey**

In the most recent fiscal year, July 1, 2007 to June 30, 2008, a total of 108 newly completed public building projects of all types were identified. There were 72 completed school projects (12 PLAs and 60 non-PLAs) and 36 other non-school building projects.

**Table 1. Completed Projects, July 1, 2007 – June 30, 2008 By Project Type and PLA/Non-PLA Designation**

	<b>PLA</b>	<b>Non-PLA</b>
<b>School Projects</b>		
New School Construction	8 <sup>(1)</sup>	3
New School Addition	0	2
School Renovation and Addition	1 <sup>(2)</sup>	39
School Renovation	3 <sup>(3)</sup>	16
<b>Total Number of School Projects</b>	<b>12</b>	<b>60</b>
<b>Total School Projects</b>		<b>72</b>
<b>Non School Projects</b>		
University/College Academic Buildings/Student Center		7
Sports/Recreation/Community		7
County/Municipal Building/Record Hall/Fire & Police		5
County/Municipal Building/Public Works		4
Railroad/Ferry Terminal		3
Technology Center		3
Airport Baggage Facility		1
Juvenile Detention Center		1
Parking Garage/Deck		1
Public Health Center		1
Sports Arena/Gym/Ice Rink		1
Student Housing/Residence		1
War Memorial		1
<b>Total</b>	<b><u>0</u></b>	<b><u>36</u></b>
<b>Total Non-School Projects</b>		<b>36</b>
<b>Total School and Non-School Projects</b>	<b><u>12</u></b>	<b><u>96</u></b>
<b>Grand Total of Projects</b>		<b><u>108</u></b>

Source: Author’s analysis based on data provided by the New Jersey Department of the Treasury, Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (DCC); and the New Jersey Schools Development Authority (SDA).

Notes: (1) Includes two non-Abbott schools implemented by the SDA with a PLA and one SDA school project monitored by the DCC.

(2) Includes one non-Abbott school implemented by the SDA with a PLA.

(3) Includes one non-Abbott school implemented by the SDA with a PLA.

Since the enactment of the PLA Act on July 25, 2002 to June 30, 2008, a statewide total of 409 identifiable publicly-funded building construction projects of all types, each with total building costs of \$5 million or more, have been completed. A comparison of all construction projects with a PLA agreement and those without a PLA is shown in Table 2.

**Table 2. Completed Projects by Type and PLA/Non-PLA Designation July 25, 2002 – June 30, 2008**

<u>School Projects</u>	<u>PLA Projects</u>	<u>Non-PLA Projects</u>
New School Construction	40 <sup>(1)</sup>	35
New School Addition	4	12
School Renovation and Addition	16 <sup>(2)</sup>	146
School Renovation	7 <sup>(3)</sup>	23
<b>Total</b>	<b>67</b>	<b>216</b>
<b>Total School Projects</b>	<b>283</b>	
<u>Non-School Projects</u>		
University/College/Tech. Institute Research & Education	1	32
County/Municipal/Police/Public Works/Social Services	2	23
Sports/Recreation/Community/Youth Center	-	16
Parking Garage/Deck	-	10
Student Housing (College/University)	-	9
Library	-	8
Railroad/Ferry Terminal	-	7
Technology Center	-	4
Courthouse/Justice/Detention Centers	-	3
Public Health Centers	-	2
Other <sup>(4)</sup>	-	9
<b>Total Non-School Projects</b>	<b>126</b>	
<b>Total School &amp; Non-School Projects</b>	<b>70</b>	<b>339</b>
<b>Grand Total of Projects</b>	<b>409</b>	

Source: Author's compilation using data provided by New Jersey Department of the Treasury, Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (DCC); and New Jersey Schools Development Authority (SDA).

- Notes: (1) Includes four non-Abbott schools implemented by the SDA with a PLA and one SDA school project monitored by the DCC.  
(2) Includes three non-Abbott schools implemented by the SDA with a PLA.  
(3) Includes one non-Abbott school implemented by the SDA with a PLA.  
(4) "Other" includes: 2 Veterans Affairs/Long Term Care Facilities; and 1 each: Theater, Children's Center, Armory, Cemetery Building, River Boathouse, War Memorial Building and Airport Baggage Facility.

As shown in Table 2, 339 (82.9%) of the 409 projects were completed without a PLA agreement. The majority (63.7%) of the non-PLA projects were school construction projects. Of the 67 PLA school projects completed as of June 2008, eight were non-Abbott<sup>4</sup> schools implemented by the SDA and one was a SDA project monitored by the DCC at the Treasury Department.

Table 3 shows the 283 school construction projects completed since July 2002 by time period. There were 67 PLA projects compared with 216 non-PLA school projects. Of the 75 completed new schools, 40 were PLAs and 35 were non-PLAs.

**Table 3. Completed Schools Projects by Time Period**

Time Period	All School Projects			New Schools Only		Total New Schools Only
	PLA <sup>(1)</sup>	Non-PLA	Total All Schools	PLA <sup>(1)</sup>	Non-PLA	
07/02 to 09/04	12	40	52	6	6	12
10/04 to 09/05	5	29	34	3	16	19
10/05 to 06/06	14	52	66	6	6	12
07/06 to 06/07	24	35	59	17	4	21
<b>Total 7/02 to 6/07</b>	<b>55</b>	<b>156</b>	<b>211</b>	<b>32</b>	<b>32</b>	<b>64</b>
7/07 to 6/08	12	60	72	8	3	11
<b>Total 7/02 - 6/08</b>	<b>67</b>	<b>216</b>	<b>283</b>	<b>40</b>	<b>35</b>	<b>75</b>

Source Calculations based on data provided by New Jersey Department of the Treasury, Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (DCC); and New Jersey Schools Development Authority (SDA).

Notes: (1) PLA school projects include one SDA school monitored by the DCC.

### Project Awards

The award amount (the term used in the DCC database<sup>5</sup>) and the construction award (the term used in the SDA database) are essentially synonymous, and can be defined as the dollar amount originally approved by the awarding agency or project owner (e.g., Board of Education, Township, College/University, SDA) at the beginning of a construction project. To put it another way, it is the originally anticipated total cost for a particular construction project and the dollar amount awarded to the prime contractor. The award amount does not include: the costs of land acquisition; architectural design; engineering; project management; change orders, deviations and upgrades from the original design and construction plan; or cost-overruns. The award amount is not the final, total or complete actual costs of a construction project.

<sup>4</sup> Abbott refers to the 1998 New Jersey Supreme Court decision finding the State responsible for funding school districts in special needs districts. Today there are 31 special needs districts in New Jersey. All Abbott schools are built by the New Jersey Schools Development Authority (SDA) with a PLA in effect.

<sup>2</sup> Much of the data used in this report is derived from administrative records maintained by the Division of Contract Compliance and Equal Employment Opportunity in Public Contracts, New Jersey Department of the Treasury (DCC), the New Jersey Schools Development Authority (SDA), and the New Jersey State Department of Education (DOE). For further information, please consult Appendix I: Data Sources and Methodology.

A truly valid and fair “apple to apple” cost comparison between different school projects is not easy. For instance, projects vary in terms of type and size (early childhood center versus high school), location (inner city in the North versus rural area in the South), construction design (one-story versus multi-level), materials used, and year of construction. Labor costs also vary by geographical location. To illustrate, Table 4 presents the hourly prevailing wage rates (wages and benefits) for certain construction occupations in Hudson County (northern county) and Burlington County (southern county).

**Table 4. Hourly Prevailing Wage/Benefit Rates for Selected Trades in Burlington and Hudson Counties, 2007/2008**

Trades	Burlington County	Hudson County	Difference	
			Amount	Percent
Electrician	\$71.35 North/\$68.57 South	\$70.45	\$1.88	2.7
Plumber	\$67.63 North/\$66.21 South	\$68.80	\$2.59	3.9
Sheet Metal Worker	\$70.17	\$71.42	\$1.25	1.8
Structural Iron Worker	\$64.33	\$66.68	\$2.35	3.7
Roofer	\$50.60	\$60.35	\$9.75	19.2
Sprinkler Fitter	\$59.30	\$64.88	\$5.58	9.4
Tiler	\$63.11	\$63.11	\$0.00	0.0

Source: Author’s calculations using data provided by New Jersey Department of Labor and Workforce Development, Prevailing Wage Rate Determination. The contract durations vary among trades, they range from January 1, 2007 to June 30, 2008.

### Building Costs

The following analysis consists of 75 new schools, of which more than half (40) were built using PLAs, and includes school construction projects that were started and completed between July 2002 and June 2008. All non-school construction projects were excluded from the analysis because of the small number of non-school PLA projects and because of major differences in the types of buildings constructed. Due to the limited availability of data, all projects that were not considered new construction were excluded.

LWD obtained the building size (square footage) and student capacity for all 75 completed new schools from the State of New Jersey Department of Education (DOE). This information was used to calculate the cost per square foot and the cost per student for each project. In order to compare the school construction costs of PLAs with those of non-PLAs, it was first necessary to adjust for the rising construction costs during the reference period, so that all costs could be expressed in 2008 prices. Specifically, a cost index was constructed that included both the trend in construction labor costs and the trend in materials costs between 2002 and 2008. The indexed cost was calculated using the Building Cost Index History (1990-2009) from the U.S. Navy Facilities Engineering Command website (NAVFAC). The Building Cost Index is based on a monthly 20-city average of four components: the cost of cement, the cost of 2 x 4 lumber, the cost of structural steel, and the cost of skilled labor. The indexed cost for each project is calculated by applying the monthly changes in the building cost index from each project’s completion date to June 2008. Information on cost, size and student capacity for the 75 completed new schools is listed in Appendix II.

The index-adjusted average cost per square foot and the index-adjusted average cost per student for all PLA and non-PLA schools and for all types of schools are shown in Table 5. The average indexed cost per square foot and the average indexed cost per student were both higher for all categories of PLA

schools than for non-PLA schools. The indexed cost per square foot for all PLA projects was \$260.00, or 30.5 percent higher than for all non-PLA projects, which averaged \$199.19 per square foot. This analysis primarily focused on a comparison of average cost per square foot because of differences in how student capacity is defined for the various types of schools (see Appendix I).

Possible reasons for the cost differences between PLA and non-PLA projects were examined, including type of school and location. Elementary schools (including early childhood centers and primary schools) were expected to be less expensive (per square foot) since schools for the lower grades tend to be single-story buildings and consist of basic classrooms (rather than science labs, athletic facilities, etc.) which are less expensive to construct. Also, building projects in the northern region of the state were expected to be more expensive due to higher labor costs, as discussed in the previous section.

**Table 5. New School Project Construction Cost per Square Foot and per Student July 2002 – June 2008**

School Type	Indexed Cost Per Square Foot		Indexed Cost Per Student	
	PLA	Non-PLA	PLA	Non-PLA
Early Childhood Centers (8 PLA Projects)	\$279.44	N/A	\$42,632	N/A
Primary Schools (4 Non-PLA Projects)	N/A	\$196.39	N/A	\$26,515
Elementary Schools (15 Non-PLA/ 19 PLA Projects)	\$245.74	\$218.36	\$42,746	\$36,540
Middle Schools (10 Non-PLA/ 8 PLA Projects)	\$249.40	\$180.81	\$48,849	\$28,690
High Schools (6 Non-PLA / 5 PLA Projects)	\$296.12	\$179.10	\$63,963	\$45,815
<b>All Schools (35 Non-PLA/ 40 PLA Projects)</b>	<b>\$260.00</b>	<b>\$199.19</b>	<b>\$47,723</b>	<b>\$39,978</b>

Source: Author’s calculations using data provided by the New Jersey State Department of Education (DOE); and NAVFAC Building Cost Index History (1990-2009).

N/A: Not Applicable

One method for determining whether the difference in costs between PLA projects and non-PLA projects is valid and not due to the correlation between PLA projects and other factors is to use a statistical technique called regression analysis. This is a standard method for measuring the effect one factor has upon a particular outcome (e.g. project cost) while controlling for the effects of other things such as location, type of school, project size and project type. The regression analysis examined the differences in costs between PLA and non-PLA projects controlling for the effects of the type of school, size of school (in square feet) and the geographic location. (The regression results are shown in Appendix III.)

The regression analysis was able to explain approximately 37 percent of the cost difference between PLA and non-PLA projects. The effects of geographic location, size of school and type of school were all found to be statistically significant factors in explaining cost differences. School projects built in the northern region of the state on average were found to cost more, as did middle and high schools. There were economies of scale on larger projects which reduced average costs. After controlling for the effects of these factors, the average cost of PLA projects remained higher than that of non-PLA projects, and the difference was significant at a 99-percent confidence level. These results are similar to the previous report which found the cost differences to be statistically significant.

As discussed above, the regression analysis was only able to explain approximately 37 percent of the variation in project costs between PLA and non-PLA new school construction. The remaining 63 percent of the cost difference cannot be explained by this analysis and is likely due to factors which cannot be quantified or for which there are no data currently available. For example, while data can be examined by type of school (e.g. elementary vs. middle school), there could be other differences within each school category which could influence building costs for which there are no data, such as the number of floors, the types of materials used or the types of amenities included in the building. There could also be other factors which are not easily quantified or measured, such as differences in the quality of building construction, improved efficiency or societal benefits from the increased participation of minority and female workers and apprentices learning new trades (see sections below).

Another important caveat is the fact that all PLA School projects are administered by the School Development Authority (SDA). As indicated earlier, the nature of school projects administered by the SDA may be different from non-PLA school projects in ways that could affect the relative costs.

### **Employment Work Hours for Minorities, Females and Apprentices**

This section discusses the total cumulative work hours and the share of the total work hours for minorities, females, and apprentices for completed projects. Appendix IV provides the details of the information for all new projects completed from July 1, 2007 through June 30, 2008. As with the other data, this information is also self-reported by the various contractors based on payroll records and other records.

The State of New Jersey has established minority<sup>6</sup> and female employment goal obligations for public works contractors and subcontractors for each county. Both the SDA and the Department of Treasury use these goal obligations as guidelines.

The minority and female goals for each county are determined by the New Jersey Department of the Treasury, Affirmative Action Office. The methodology takes into account the actual availability of qualified minorities and females utilizing decennial Census data for affirmative action programs. Depending on the construction start date, the 2008 report uses the minority county goals based on either the 1990 or the 2000 Census. The year 2000 Census-based minority targets, which in some counties changed significantly, did not become available to Treasury's DCC until December 2004. The updated targets were revised in February 2005 and applied to new projects, which began in and after March 2005. Projects already underway prior to March 2005 continue to be subject to the 1990 Census-based minority targets. Table 6 shows the established minority goal obligation rates for each county based on the 1990 and 2000 Census figures. The female employment goal obligation for all counties in New Jersey is 6.9 percent. It should be noted that these are goals, and not quotas. Therefore, these goals do not have to be strictly satisfied if the contractor attempted in good faith to reach the applicable targets.

The participation rate of minorities, females and apprentices in the construction industry is of interest to many policy makers. To evaluate the extent to which minority, female and apprentice workers are included in these construction projects, the analysis uses the actually-achieved participation rate on a

---

<sup>6</sup> The term "minority" includes all minority males and all minority females. The category female is defined as both minority females as well as non-minority females. In other words, minority females are counted twice in the cumulative total employment statistics: once under females and a second time under minorities. The double count of minority females is inconsequential since their participation rate in the construction trades at the present time is extremely low.

project and the established minority employment goal obligation for the county in which the project is located. This is done because of the substantial differences in the racial composition of the counties.

**Table 6. Minority Goal Obligation Percentage in Public Contracts By County Based on 1990 and 2000 Census**

County	Minority Goal		County	Minority Goal	
	1990 Census	2000 Census		1990 Census	2000 Census
	(Percent)			(Percent)	
Atlantic	20	18	Mercer	19	30
Bergen	10	22	Middlesex	16	24
Burlington	16	15	Monmouth	11	15
Camden	16	19	Morris	7	16
Cape May	8	5	Ocean	6	7
Cumberland	21	27	Passaic	24	36
Essex	42	53	Salem	15	10
Gloucester	10	9	Somerset	8	20
Hudson	38	60	Sussex	5	4
Hunterdon	5	3	Union	24	45
			Warren	5	5

Source: New Jersey State Department of the Treasury, Division of Contract Compliance & EEO in Public Contracts, Affirmative Action Office, Goals for Construction Contractors and Subcontractors, Revised 02/05.

Out of the 72 total school projects completed during the past year, 4 were subject to the 1990 Census-based guidelines, while 68 took place after the 2000 Census targets were issued. Of the 12 PLA school projects, 2 were subject to the 1990 Census-based minority targets and 10 projects were subject to goals set under the 2000 Census. For non-PLA school projects, 2 projects fell under the 1990 goals and 58 projects were subject to the generally higher targets for minority hiring.

Table 7 shows actual participation rates for minorities, females and apprentices for PLA and non-PLA school projects completed during FY 2008. The actual minority participation rate for PLA projects (24.8%) exceeded the rate for non-PLA schools (18.8%). However, in contrast to prior years, actual PLA and non-PLA minority participation rates both fell short of their weighted state average goals during FY 2008. This can be partially explained by the greater proportion of PLA and non-PLA projects using the generally higher targets based on the 2000 Census.

The female participation rates actually achieved on school construction projects are low for both PLA and non-PLA projects. However, the percentage of hours worked by females on PLA projects (1.4%) was nearly three times the percentage worked on non-PLA projects (0.5%).

The table also includes apprentice participation rates for PLA and non-PLA school projects, although there are no goals set for apprentice participation. The non-PLA apprentice participation rate (10.5%) was a few percentage points higher than the rate for PLA projects (8.6%).

**Table 7. Participation Rate for Minorities, Females, Apprentices School Projects Completed July 1, 2007 – June 30, 2008**

	<u>PLA Projects (12)</u>		<u>Non-PLA Projects (60)</u>	
	<u>Achieved</u> <u>(Percent)</u>	<u>Goal</u> <sup>(1)</sup>	<u>Achieved</u> <u>(Percent)</u>	<u>Goal</u> <sup>(1)</sup>
Minority	24.8	36.4	18.8	20.0
Female	1.4	6.9	0.5	6.9
Apprentice	8.6	-	10.5	-

Source: Author’s calculations using data provided by the New Jersey Department of Treasury and New Jersey Schools Development Authority (SDA).

<sup>(1)</sup>Weighted State average minority goal is determined by multiplying each county’s total work hours by the respective county minority goal percentage divided by the total statewide work hours.

Table 8 shows the minority participation rate (total hours worked by minorities as a percentage of total work hours) during Fiscal Years 2004 through 2008 for all projects. The work hours data collected by Treasury only provide an aggregate number for all minorities (Black, Hispanic, American Indian, Asian). The purpose is to determine the fluctuation of the minority work hours (participation rate) over time.

The minority participation rate for PLA projects rose to 24.8 percent in fiscal year 2008 from 24.0 percent in fiscal year 2007, but was still somewhat below the results achieved two years prior when the rate was 25.2 percent. For all non-PLA projects, the minority participation rate decreased slightly to 18.4 percent from 18.5 in the previous year.

**Table 8. Annual Minority Participation Rates All Projects Completed July 1, 2003 – June 30, 2008**

Fiscal Year	PLA Projects			Non-PLA Projects		
	Total Hours	Total Minority Hours	Minority Percent	Total Hours	Total Minority Hours	Minority Percent
2004 <sup>(1)</sup>	-	-	-	919,177	143,569	15.6
2005	1,381,827	361,172	26.1	4,359,829	745,341	17.1
2006	2,032,484	512,608	25.2	5,119,843	871,242	17.0
2007	2,380,746	571,871	24.0	2,748,322	509,177	18.5
2008	963,473	239,196	24.8	4,386,170	806,673	18.4

Source: Author’s calculations using data provided by the New Jersey Department of Treasury, DCC and New Jersey Schools Development Authority (SDA).

<sup>(1)</sup> Fiscal Year 2004 data for PLA projects are not shown because only one project was completed.



## **Employment Work Hours for Minorities and Apprentices by Construction Trade**

This section of the report presents the participation rates for minorities and apprentices for the different construction trades or occupations. There are no set trade-specific minority county goal obligations, but the minority work hours for all trades combined should reach or exceed the calculated weighted minority county goal obligation percentage. Table 9 shows the achieved minority participation rate for each construction trade and compares it with the work-hour-based weighted 6 county-wide goal obligations.

The data are based on 25 school construction projects (new, addition, renovation, or addition and renovation) both for PLA (8) and non-PLA (17) school projects in the 6 counties with at least one PLA and one non-PLA project.<sup>7</sup> The analysis is limited to school projects because they have a greater similarity in the occupational mix used than with non-school type projects.

The analysis includes the following 18 trades or crafts: Asbestos Worker, Bricklayer or Mason, Carpenter, Electrician, Glazier, HVAC (heating, ventilation and air conditioning) Mechanic, Iron Worker, Laborer, Operating Engineer, Painter, Plumber, Roofer, Sheet Metal Worker, Sprinkler Fitter, Steam fitter, Tiler and Truck Driver, with all residual trades reported as “Other”.

For PLA projects, four of the 18 trades (asbestos worker, laborer, painter and truck driver) achieved a minority participation rate above the goal obligation. Also, for non-PLA projects, four trades (asbestos worker, laborer, roofer and truck driver) scored above the county goal obligations.

---

<sup>7</sup>The 6 counties with at least one PLA and one non-PLA project are: Essex, Hudson, Middlesex, Monmouth, Passaic and Union.

**Table 9. Minority Participation in School Projects by Construction Trade<sup>(1)</sup> Projects Completed  
July 1, 2007 – June 30, 2008**

PLA/SDA School Projects				Non-PLA School Projects		
Weighted Minority County Goal Obligation <sup>(2)</sup> (Percent)	Actual Minority Participation (Percent)	Above/Below County Goal Obligation	Construction Trade	Above/Below County Goal Obligation	Weighted Minority County Goal Obligation <sup>(2)</sup> (Percent)	Actual Minority Participation (Percent)
34.9	85.9	Above	Asbestos Worker	Above	15.7	57.6
47.5	35.8	Below	Bricklayer/Mason	Below	36.2	27.2
48.0	17.1	“	Carpenter	“	24.0	9.4
44.4	22.0	“	Electrician	“	30.8	10.1
38.7	9.7	“	Glazier	“	27.2	25.5
41.5	22.0	“	HVAC	“	32.8	6.9
47.8	15.5	“	Iron Worker	“	25.4	19.7
44.7	47.5	Above	Laborer	Above	28.4	49.3
38.8	11.1	Below	Operating Engineer	Below	23.0	8.4
37.8	58.6	Above	Painter	“	20.2	17.2
42.9	20.7	Below	Plumber	“	34.5	7.8
47.2	30.0	“	Roofer	Above	22.5	22.8
48.1	35.3	“	Sheet Metal	Below	20.1	8.5
47.4	32.9	“	Sprinkler	“	25.0	19.0
53.8	0.0	“	Steam Fitter	“	34.8	16.5
30.0	3.5	“	Tiler	“	28.0	18.3
53.0	54.7	Above	Truck Driver	Above	50.0	60.6
50.7	24.1	Below	Other	Below	26.2	13.6
45.7%	28.0%	4 Above 14 Below	6 counties	4 Above 14 Below	28.3%	21.8%

Source: Author’s calculations using data provided by the New Jersey Department of Treasury, DCC and New Jersey Schools Development Authority (SDA).

Notes: (1) The sample includes 8 PLA and 17 non-PLA School Projects in 6 Counties with at least 1 PLA and 1 non-PLA Project.

(2) A weighted minority goal was calculated for each construction trade for the six counties included in the table. First, each county’s goal for a specific trade was computed by multiplying the county’s total work hours in that trade by the respective county’s minority goal percentage. The county goals for the specific trade were then added together to get a total goal for that trade in work hours. The weighted 6-county minority goal obligation for each trade was then obtained by dividing this total by the trade’s total work hours for the 6 counties.

Overall, for the 6 counties, the actual minority work hour participation rate for all trades was higher for PLA projects (28.0%) than for non-PLA projects (21.8%). However, both groups fell below their respective weighted minority county goals. For PLA projects, the weighted minority county goal obligation was 45.7 percent, compared with a weighted minority county goal of 28.3 percent for non-PLA projects.

Table 10 presents data on the extent to which the different trades use apprentices on all PLA and non-PLA projects completed during Fiscal Year 2008. The apprentice participation by trade is expressed as a percentage of the actual total work hours for all workers of the same trade. As mentioned earlier, there are no goals set for the use of apprentices in New Jersey.

**Table 10. Apprentice Participation by Construction Trade All Projects Completed July 1, 2007 – June 30, 2008**

PLA (12 Projects)		Construction Trade	Non-PLA (96 Projects)	
Actual Apprentice Participation (Percent)	Ranking <sup>(1)</sup>		Ranking <sup>(1)</sup>	Actual Apprentice Participation (Percent)
3.3	13	Asbestos Worker	19	0.5
4.1	11	Bricklayer	12	7.5
8.0	6	Carpenter	8	12.3
23.6	1	Electrician	1	20.4
3.0	14	Glazier	10	11.1
7.3	8	HVAC	2	16.7
2.4	15	Iron Worker	16	3.8
1.8	16	Laborer	15	4.1
0.7	17	Operating Engineer	18	1.4
3.4	12	Painter	13	7.2
9.8	4	Plumber	4	15.1
7.5	7	Roofer	6	13.8
8.7	5	Sheet Metal	7	12.6
16.1	2	Sprinkler Fitter	9	12.2
0.0	18	Steam Fitter	3	15.5
0.0	18	Surveyor	17	3.4
6.0	10	Tiler	5	14.9
7.2	9	Truck Driver	14	6.7
11.1	3	Other	11	10.9
8.6%	-	Statewide	-	10.5%

Source: Author's calculations using data provided by the New Jersey Department of the Treasury DCC and New Jersey Schools Development Authority (SDA).

<sup>(1)</sup>The ranking of 1 represents the highest proportion of work hours by apprentices in a trade.

The statewide weighted average participation rates for all trades were 10.5 percent for non-PLAs and 8.6 percent for PLAs. The highest apprentice participation rates of over 20 percent occurred in the electrician trade for both PLA and non-PLA projects. Five trades accounted for more than 70 percent of total work hours for both PLA and non-PLA projects; the trades were laborers, electricians, carpenters, bricklayers and plumbers. These same five trades also accounted for 47 percent of all PLA apprentice work hours and 59 percent of total non-PLA apprentice work hours.

Apprentice participation rates were generally low, less than four percent, for asbestos workers, ironworkers and operating engineers for both PLA and non-PLA projects. Apprentice participation in

some trades varied more between PLA and non-PLA designated projects, including glaziers, HVAC workers and tilers. It should be noted that these three trades each comprised three percent or less of total work hours for both PLA and non-PLA projects.

### **Construction Duration**

The final performance factor measured is the construction duration for all PLA and non-PLA projects.

The SDA and DCC definitions of construction start and construction completion are slightly different. The SDA's construction start is called "Construction Notice to Proceed" (NTP) and the completion date is called "Substantial Completion." It is understood that it may take a contractor several weeks after receiving the NTP certificate before actually starting the work on the construction site. Substantial completion means that the project essentially is completed, but finishing and clean-up activities may still be ongoing. For the DCC, the "Award Date" is used as the official construction start date, even though the contractor may take several more weeks before actually beginning the work. The "Closed Date" is the official construction end date, which usually is recorded at approximately 90 percent of the actual construction completion. Thus, construction duration is the time difference in weeks between the notice to proceed and the substantial completion dates for SDA projects, and the difference between award date and closed date for DCC monitored non-PLA projects.

There are myriad factors that influence construction duration. Variables, such as project size and complexity, permitting, financing, material availability and delivery, change order requests, staffing and available resources, weather, unanticipated circumstances and more, play a crucial role in determining the projected and actual start and completion times of a construction project. Further, authorities with several school projects under construction may shift the priority from one construction site to another to accommodate the school calendar.

The length of time indicated for construction duration is an approximation based on how the start and completion dates are recorded. There are disparities and variations in how projects are recorded. As a consequence, the findings should not be rigidly interpreted.

The average construction duration for all 72 school projects completed from July 1, 2007 through June 30, 2008 was 81.3 weeks, compared with 93.9 weeks for the 59 school projects completed from July 1, 2006 through June 30, 2007. The average construction duration for the 12 PLA school projects was 100.1 weeks, versus an average of 77.5 weeks for the 60 non-PLA school projects. This is at least partially because 8 out of 12 of the PLA schools were new schools, compared with only 3 new schools out of 60 non-PLA projects, and construction of a new school generally takes longer than an addition or renovation. The average duration of new school projects completed during the period from July 1, 2007 to June 30, 2008 was similar for both PLA and non-PLA projects, with an average duration for PLA new school projects and for non-PLA new school projects of 106.9 and 105.5 weeks, respectively. Average duration data for the 72 school projects completed from July 1, 2007 through June 30, 2008 are presented in Appendix V.

**Appendix I. Cost Information for 75 Completed New School Projects July 2002 – June 2008**

PLA	County	Location	Project Description	End Date	Square Footage	Student Capacity	Award Amount	Index Award Amount	Index Cost per Square Foot	Index Cost per Student
<b>Early Childhood Centers</b>										
Y	Union	Elizabeth	Early Childhood Center #44	9/1/04	47,355	300	\$11,377,736	\$13,245,061	\$279.70	\$44,150
Y	Union	Elizabeth	Early Childhood Center #45	9/28/05	46,675	300	\$11,064,000	\$12,227,037	\$261.96	\$40,757
Y	Bergen	Garfield	Early Childhood Center	7/15/04	37,057	316	\$8,875,000	\$10,367,616	\$279.77	\$32,809
Y	Middlesex	Perth Amboy	Ignacio Cruz Early Childhood Center	8/1/04	68,396	540	\$11,922,535	\$13,927,692	\$203.63	\$25,792
Y	Warren	Phillipsburg	Phillipsburg Early Childhood Center	12/23/05	89,829	524	\$19,340,000	\$21,989,880	\$244.80	\$41,965
Y	Union	Elizabeth	Monsignor Antao School #31	8/15/06	110,194	742	\$34,038,500	\$36,606,369	\$332.20	\$49,335
Y	Hudson	Union City	Schlemm Early Childhood Center	9/1/2007	40,405	223	\$14,805,875	\$15,312,143	\$378.97	\$68,664
Y	Middlesex	New Brunswick	McKinley K Center 3	8/10/2007	37,000	181	\$9,232,737	\$9,590,754	\$259.21	\$52,988
<b>Total Early Childhood Centers</b>					<b>476,911</b>	<b>3,126</b>		<b>\$133,266,550</b>	<b>\$279.44</b>	<b>\$42,632</b>
<b>Primary Schools</b>										
N	Cape May	Dennis	Primary School	9/28/05	45,321	340	\$7,513,814	\$8,303,658	\$183.22	\$24,423

**Appendix I. Cost Information for 75 Completed New School Projects July 2002 – June 2008 (Continued)**

PLA	County	Location	Project Description	End Date	Square Footage	Student Capacity	Award Amount	Index Award Amount	Index Cost per Square Foot	Index Cost per Student
N	Ocean	Plumstead	New Egypt Primary School	9/26/03	39,382	261	\$6,873,300	\$8,668,670	\$220.12	\$33,213
N	Middlesex	South River	South River Primary School	2/4/05	53,026	445	\$11,053,456	\$12,601,571	\$237.65	\$28,318
N	Ocean	Stafford	The Primary Learning Center	12/1/05	49,263	339	\$6,575,705	\$7,148,966	\$145.12	\$21,088
<b>Total Primary Schools</b>					<b>186,992</b>	<b>1,385</b>	<b>\$36,722,865</b>	<b>\$196.39</b>	<b>\$26,515</b>	
<b>Elementary Schools</b>										
N	Ocean	Berkeley	5-6 Elementary School	10/7/04	75,300	567	\$15,443,753	\$17,649,683	\$234.39	\$31,128
N	Passaic	Clifton	K-5 Elementary School	6/7/04	82,010	420	\$12,139,881	\$14,385,927	\$175.42	\$34,252
N	Monmouth	Freehold	West Freehold Elementary School	7/27/04	82,025	622	\$15,506,203	\$18,114,069	\$220.84	\$29,122
N	Burlington	Medford	Kirby's Mill - North 70 Elementary School	12/30/04	57,963	423	\$11,584,956	\$13,172,275	\$227.25	\$31,140
N	Burlington	Medford	Chairville - South 70 Elementary School	7/30/04	59,766	451	\$10,443,037	\$12,199,369	\$204.12	\$27,050
N	Mercer	West Windsor C. Special Services	Elementary School	6/6/05	88,421	333	\$25,303,940	\$28,317,669	\$320.26	\$85,038

**Appendix I. Cost Information for 75 Completed New School Projects July 2002 – June 2008 (Continued)**

PLA	County	Location	Project Description	End Date	Square Footage	Student Capacity	Award Amount	Index Award Amount	Index Cost per Square Foot	Index Cost per Student
N	Essex	Newark	Belmont Runyon Elementary School	5/20/04	112,001	536	\$19,989,000	\$23,687,242	\$211.49	\$44,193
N	Burlington	North Hanover	Upper Elementary School	4/27/06	124,934	472	\$24,376,432	\$26,360,931	\$211.00	\$55,849
N	Hunterdon	Tewksbury	Tewksbury Elementary School	1/1/05	63,662	375	\$12,361,777	\$14,055,532	\$220.78	\$37,481
N	Morris	Washington	B. Cucinella Elementary School	9/19/05	86,640	683	\$18,427,557	\$20,364,643	\$235.05	\$29,816
N	Gloucester	Woolwich	Elementary School	9/25/03	98,000	618	\$6,609,675	\$8,336,183	\$85.06	\$13,489
N	Bergen	Carlstadt	Elementary/Middle School	12/18/06	111,350	573	\$21,293,039	\$22,476,567	\$201.86	\$39,226
N	Hunterdon	Union Twp	Union Township Elementary School	9/8/06	52,005	337	\$12,500,000	\$13,443,002	\$258.49	\$39,890
N	Middlesex	Monroe Township	Oak Tree Elementary School	5/19/2008	73,970	570	\$22,393,000	\$22,488,943	\$304.03	\$39,454
<b>Total Non PLA Elementary Schools</b>					<b>1,168,047</b>	<b>6,980</b>		<b>\$255,052,035</b>	<b>\$218.36</b>	<b>\$36,540</b>
Y	Union	Elizabeth	Dr. Albert Einstein Academy, PreK-8	11/25/05	124,572	722	\$31,250,000	\$33,974,336	\$272.73	\$47,056
Y	Union	Elizabeth	Ronald Reagan Academy	6/15/06	125,380	722	\$27,987,000	\$30,230,569	\$241.11	\$41,871
Y	Hudson	Jersey City	PS3 Elementary School	12/30/05	117,939	490	\$25,100,000	\$27,181,026	\$230.47	\$55,471

**Appendix I. Cost Information for 75 Completed New School Projects July 2002 – June 2008 (Continued)**

PLA	County	Location	Project Description	End Date	Square Footage	Student Capacity	Award Amount	Index Award Amount	Index Cost per Square Foot	Index Cost per Student
Y	Monmouth	Neptune	Summerfield Elementary School	4/15/06	106,750	432	\$21,804,700	\$23,579,833	\$220.89	\$54,583
Y	Passaic	Paterson	Roberto Clemente School	4/6/05	117,820	591	\$26,598,000	\$30,213,025	\$256.43	\$51,122
Y	Mercer	Trenton	Mott Elementary School	6/14/05	64,944	315	\$7,056,000	\$7,885,083	\$121.41	\$25,032
Y	Mercer	Trenton	Columbus Elementary School	8/1/06	59,655	279	\$17,077,177	\$18,378,130	\$308.07	\$65,871
Y	Mercer	Trenton	Joyce Kilmer Elementary School	8/1/06	97,803	732	\$20,498,000	\$22,059,554	\$225.55	\$30,136
Y	Essex	East Orange	New Langston Hughes Replacement	8/19/06	101,805	559	\$17,966,900	\$19,322,325	\$189.80	\$34,566
Y	Cumberland	Fairfield	Fairfield New Elementary School	8/30/06	73,546	427	\$13,136,000	\$14,126,981	\$192.08	\$33,084
Y	Middlesex	Perth Amboy	Dr. Herbert N. Richardson Elementary School #10	8/31/06	95,887	691	\$22,374,000	\$24,061,897	\$250.94	\$34,822
Y	Hudson	West New York	Elementary School #4	5/1/07	110,413	708	\$25,400,000	\$26,963,593	\$244.21	\$38,084
Y	Cumberland	Vineland City	Pauline J. Petway Elementary School	6/1/07	68,813	500	\$15,602,904	\$16,345,022	\$237.53	\$32,690
Y	Monmouth	Long Branch	Gregory Elementary School	6/27/07	79,216	537	\$24,331,000	\$25,511,054	\$322.04	\$47,507



**Appendix I. Cost Information for 75 Completed New School Projects July 2002 – June 2008 (Continued)**

PLA	County	Location	Project Description	End Date	Square Footage	Student Capacity	Award Amount	Index Award Amount	Index Cost per Square Foot	Index Cost per Student
Y	Essex	Irvington Township	Mt. Vernon Avenue Elementary School	8/1/2007	93,821	543	\$27,471,553	\$28,536,814	\$304.16	\$52,554
Y	Ocean	Barnegat Township	Joseph T Donahue Elementary	5/12/2008	72,300	487	\$19,690,000	\$19,774,362	\$273.50	\$40,604
Y	Essex	Newark	New First Avenue Elementary School	8/24/2007	183,200	714	\$46,189,139	\$47,980,209	\$261.90	\$67,199
Y	Atlantic	Egg Harbor Township	Slaybaugh Elementary School	8/24/2007	55,471	424	\$13,392,859	\$13,850,810	\$249.69	\$32,667
Y	Atlantic	Egg Harbor Township	Davenport Elementary School	9/5/2007	55,741	504	\$13,150,426	\$13,600,088	\$243.99	\$26,984
<b>Total PLA Elementary Schools</b>					<b>1,805,076</b>	<b>10,377</b>		<b>\$443,574,711</b>	<b>\$245.74</b>	<b>\$42,746</b>
<b>Middle Schools</b>										
N	Burlington	Burlington	Burlington Middle School	4/27/06	181,700	1,293	\$16,342,850	\$17,673,331	\$97.27	\$13,668
N	Hunterdon	Flemington	Flemington - Raritan Middle School	8/16/05	155,165	848	\$30,028,912	\$34,957,284	\$225.29	\$41,223
N	Atlantic	Hamilton	William Davies Middle School	9/6/05	162,533	1,071	\$21,013,160	\$23,398,551	\$143.96	\$21,847
N	Gloucester	Kingsway	Kingsway Middle School	2/2/06	96,196	921	\$18,780,398	\$20,309,320	\$211.12	\$22,051
N	Ocean	Toms River	Intermediate School South	7/8/05	161,557	1,167	\$27,524,160	\$30,758,263	\$190.39	\$26,357

**Appendix I. Cost Information for 75 Completed New School Projects July 2002 – June 2008 (Continued)**

PLA	County	Location	Project Description	End Date	Square Footage	Student Capacity	Award Amount	Index Award Amount	Index Cost per Square Foot	Index Cost per Student
N	Passaic	Wayne	Anthony Wayne Middle School	9/15/05	95,808	588	\$22,015,300	\$24,329,526	\$253.94	\$41,377
N	Essex	West Orange	Liberty Middle School	9/13/05	106,880	540	\$21,935,000	\$24,425,038	\$228.53	\$45,232
N	Hunterdon	Clinton Twp	Clinton Township Middle School	9/8/06	125,000	682	\$26,690,000	\$28,703,497	\$229.63	\$42,087
N	Burlington	Burlington Township	New Middle School Springside	5/31/2008	181,700	1,058	\$19,698,250	\$19,698,250	\$108.41	\$18,618
N	Monmouth	Millstone Township	Millstone Middle School	11/16/2007	111,557	517	\$23,598,900	\$24,917,037	\$223.36	\$48,195
<b>Total Non PLA Middle Schools</b>					<b>1,378,096</b>	<b>8,685</b>	<b>\$249,170,098</b>	<b>\$180.81</b>	<b>\$28,690</b>	
Y	Hudson	Jersey City	Middle School #4	12/30/05	169,678	810	\$37,644,000	\$40,765,041	\$240.25	\$50,327
Y	Hudson	Union City	Jose Marti Middle School	7/30/04	132,318	602	\$24,749,000	\$28,911,339	\$218.50	\$48,025
Y	Hudson	West New York	Middle School	7/30/04	171,281	872	\$29,794,000	\$34,804,817	\$203.20	\$39,914
Y	Cumberland	Vineland City	Thomas W. Wallace Jr. Middle School	8/1/06	102,662	555	\$26,243,100	\$28,242,320	\$275.10	\$50,887
Y	Monmouth	Long Branch	New Middle School	11/1/06	224,218	935	\$50,739,000	\$53,680,093	\$239.41	\$57,412
Y	Burlington	Burlington City	Wilbur Watts Intermediate School	5/1/07	92,637	499	\$29,239,500	\$31,039,447	\$335.07	\$62,203

**Appendix I. Cost Information for 75 Completed New School Projects July 2002 – June 2008 (Continued)**

PLA	County	Location	Project Description	End Date	Square Footage	Student Capacity	Award Amount	Index Award Amount	Index Cost per Square Foot	Index Cost per Student
Y	Bergen	Garfield	New Middle School	5/1/07	144,078	1,018	\$37,413,746	\$39,716,890	\$275.66	\$39,015
Y	Hudson	Jersey City	Heights Middle School #03	5/1/07	158,096	810	\$38,500,000	\$40,870,012	\$258.51	\$50,457
<b>Total PLA Middle Schools</b>					<b>1,194,968</b>	<b>6,101</b>	<b>\$298,029,960</b>	<b>\$249.40</b>	<b>\$48,849</b>	
<b>High Schools</b>										
N	Burlington	Bordentown	Bordentown High School	4/27/06	175,619	714	\$31,170,900	\$37,391,638	\$212.91	\$52,369
N	Burlington	Florence	Florence High School	4/27/06	120,791	714	\$29,676,500	\$35,058,937	\$290.24	\$49,102
N	Somerset	Franklin	Franklin High School	3/8/05	319,083	1,316	\$50,585,800	\$57,614,655	\$180.56	\$43,780
N	Ocean	Jackson	Jackson High School	9/30/05	299,805	1,033	\$48,003,581	\$53,049,670	\$176.95	\$51,355
N	Somerset	Montgomery	Montgomery High School	6/10/05	321,932	796	\$57,464,805	\$64,308,931	\$199.76	\$80,790
N	Mercer	Washington	Washington High School	5/13/05	224,681	1,142	\$12,808,478	\$14,406,203	\$64.12	\$12,615
<b>Total Non PLA High Schools</b>					<b>1,461,911</b>	<b>5,715</b>	<b>\$261,830,034</b>	<b>\$179.10</b>	<b>\$45,815</b>	
Y	Passaic	Paterson	PANTHER Academy	8/1/04	26,666	149	\$8,461,200	\$9,884,222	\$370.67	\$66,337
Y	Essex	Newark	Science Park High School	9/30/06	221,769	1,033	\$64,499,000	\$69,111,136	\$311.64	\$66,903

**Appendix I. Cost Information for 75 Completed New School Projects July 2002 – June 2008 (Continued)**

PLA	County	Location	Project Description	End Date	Square Footage	Student Capacity	Award Amount	Index Award Amount	Index Cost per Square Foot	Index Cost per Student
Y	Ocean	Barnegat	Barnegat High School	5/8/07	106,769	560	\$26,252,560	\$27,868,635	\$261.02	\$49,765
Y	Hudson	Harrison	Harrison High School	6/1/07	160,000	900	\$56,202,300	\$58,875,438	\$367.97	\$65,417
<i>Y</i>	<i>Monmouth</i>	<i>Long Branch</i>	<i>New High School</i>	<i>8/1/2007</i>	<i>292,000</i>	<i>1,095</i>	<i>\$70,552,837</i>	<i>\$73,288,655</i>	<i>\$250.99</i>	<i>\$61,074</i>
<b>Total PLA High Schools</b>					<b>807,204</b>	<b>3,737</b>		<b>\$239,028,086</b>	<b>\$296.12</b>	<b>\$63,963</b>
<b>Special Education</b>										
N	Gloucester	Gloucester Special Services	Bankbridge Development Center	5/4/2007	40,375	192	\$8,080,161	\$8,577,566	\$212.45	\$44,675
<b>Total Special Education</b>					<b>40,375</b>	<b>192</b>		<b>\$8,577,566</b>	<b>\$212.45</b>	<b>\$44,675</b>

Y: Constructed with a PLA

N: Not constructed with a PLA

*New projects completed July 1, 2007 – June 30, 2008 shown in italics.*

## Appendix II – Project Cost Regression July 2002 – June 2008

Dependent Variable: Indexed cost per square foot

Dependent Mean: 235.20

Independent

Estimated

Variable	Coefficient	t-Statistic	p-value <sup>1</sup>
Constant	753.52*	4.62	<.0001
PLA	48.80*	4.00	0.0002
Northern <sup>2</sup>	32.44**	2.47	0.0158
Elementary <sup>3</sup>	-32.93**	-2.13	0.0366
Log Square Feet <sup>4</sup>	-47.50*	-3.46	0.0009

Model R<sup>2</sup> .3674

Sample Size 75

\*Statistically significant at the 99 percent confidence level.

\*\*Statistically significant at the 95 percent confidence level.

<sup>1</sup>p-value: probability that the observed relationship between project cost and the independent variable occurred by chance.

<sup>2</sup>Location dummy variable: 1=Northern. 0=Other. Northern includes the following counties: Bergen, Essex, Hudson, Hunterdon, Mercer, Monmouth, Morris, Passaic, Somerset, Sussex, Union and Warren.

<sup>3</sup>Dummy variable representing type of school. 1=Elementary, early childhood centers, primary and special education. 0=Middle and high school.

<sup>4</sup>The logarithm of building square feet is a variable representing the size of the school.

**APPENDIX III Minority, Female and Apprentice Construction Employment Participation by Project All 108 Projects Completed July 1, 2007 - June 30, 2008**

<b>District/Board of Education</b>	<b>Project Name</b>	<b>Total Project Work Hours</b>	<b>Minority Participation</b>	<b>Minority Obligation</b>	<b>Female Participation</b>	<b>Apprentice Participation</b>
<i>Atlantic County</i>						
Atlantic City	All Wars Memorial Building	59,080	23.3%	18.0%	0.1%	12.6%
*Egg Harbor Township	Egg Harbor Township Community Center	71,733	11.4%	18.0%	1.0%	10.9%
*Egg Harbor Township	New Davenport E.S. #2	90,128	13.4%	18.0%	0.2%	4.4%
Egg Harbor Township	New Slaybaugh E.S. #3	7,334	13.8%	18.0%	0.0%	9.4%
Hammonton Town (Atlantic)	Hammonton Town Hall	25,555	5.6%	18.0%	0.0%	19.6%
Richard Stockton College of NJ	Richard Stockton College Student Housing	163,563	13.6%	18.0%	1.8%	16.1%
South Jersey Transportation Authority	Atlantic City Intl Airport- Baggage Facility	25,635	9.0%	18.0%	0.0%	17.4%
South Jersey Transportation Authority	Atlantic City Intl Airport- Parking Garage	103,631	16.1%	18.0%	0.0%	24.5%
<i>Bergen County</i>						
Bergen County Vo-Tech Schls B.O.E.	Bergen Academy	17,255	12.6%	22.0%	0.0%	10.5%
Cresskill B.O.E	Cresskill Junior Senior High School	94,682	23.3%	22.0%	0.3%	13.9%
Dumont B.O.E	Grant Elementary School	7,469	6.4%	22.0%	0.0%	16.9%
Maywood B.O.E	Maywood Avenue School	45,845	19.2%	22.0%	1.3%	8.2%
Maywood B.O.E	Memorial Elementary School	7,588	11.2%	22.0%	0.0%	11.3%
	NJ Meadowlands Commission					
NJ Meadowlands Commission	Observatory/Classroom	12,517	9.2%	22.0%	0.0%	5.3%
NJ Sports & Exposition Authority	NJ Sports and Exposition Authority	59,570	13.6%	22.0%	1.0%	3.0%
NJ Sports & Exposition Authority	Woodbridge Offtrack Wagering Facility	23,315	7.3%	22.0%	0.0%	25.4%
NJ Sports & Exposition Authority	Monmouth Park Patio Terrace	19,809	13.9%	22.0%	0.0%	11.9%
Oradell B.O.E	Oradell Public School	67,464	16.8%	22.0%	0.0%	7.5%
Paramus B.O.E	Paramus High School	43,058	19.2%	22.0%	0.1%	16.3%
Ramapo College of New Jersey	Ramapo College Ctr for Sci, Educ & Tech.	62,606	15.4%	22.0%	0.0%	12.1%
River Dell Reg. School Dist B.O.E	River Dell High School	91,415	17.5%	22.0%	0.0%	8.0%
River Edge B.O.E	Cherry Hill Elementary School	49,873	17.5%	22.0%	0.0%	11.1%
Rutherford B.O.E	Union Intermediate School	31,363	18.1%	22.0%	1.5%	7.5%
Tenafly B.O.E	Tenafly High School	49,786	24.1%	22.0%	0.0%	9.9%
Tenafly B.O.E	Tenafly Middle School	40,555	14.0%	22.0%	0.0%	4.4%
Wyckoff Township B.O.E	Eisenhower Middle School	36,516	11.5%	22.0%	0.0%	4.8%
Wyckoff Township B.O.E	Sicomae Elementary School	2,799	26.0%	22.0%	0.0%	10.9%

\*Indicates PLA Project

**APPENDIX III Minority, Female and Apprentice Construction Employment Participation by Project All 108 Projects Completed July 1, 2007 - June 30, 2008**

District/Board of Education	Project Name	Total Project Work Hours	Minority Participation	Minority Obligation	Female Participation	Apprentice Participation
<b><i>Cape May County</i></b>						
Collingswood Borough B.O.E	Collingswood High School	37,393	18.7%	19.0%	0.7%	27.8%
Collingswood Borough B.O.E	Collingswood Middle School	52,211	15.3%	19.0%	1.6%	26.9%
County of Camden	Camden County Fire Training Academy	29,836	10.2%	19.0%	0.9%	16.2%
<b><i>Cape May County</i></b>						
Cape May County Technical B.O.E	Cape May County Technical School	65,217	11.3%	5.0%	1.3%	10.5%
<b><i>Essex County</i></b>						
*Irvington Township	Mt. Vernon Avenue E.S.	148,782	32.2%	42.0%	0.6%	8.2%
Maplewood Township	Maplewood Twp Municipal/Police Bldg.	67,190	13.2%	53.0%	0.3%	7.6%
Montclair State University	Montclair State University Student Center	35,148	30.9%	53.0%	0.0%	11.3%
*Newark	First Avenue Elementary School (new)	340,755	27.5%	42.0%	2.1%	10.0%
NJ Transit Corporation	NJ Transit Broad Street Station	186,787	20.6%	53.0%	0.1%	5.4%
NJ Transit Corporation	Hoboken Ferry Terminal Rehab	165,264	29.5%	53.0%	0.3%	2.6%
NJ Transit Corporation	Mt. Arlington Rail Station	29,863	11.8%	53.0%	0.0%	7.6%
Roseland B.O.E	Lester Noecker School	37,284	45.5%	53.0%	0.8%	12.4%
Univ. of Medicine and Dentistry of NJ	Univ of Medicine and Dentistry of NJ	95,214	29.7%	53.0%	0.5%	8.0%
<b><i>Gloucester County</i></b>						
Gloucester County Improveme. Auth.	Gloucester County Equine DREAM Park	43,560	14.4%	9.0%	1.5%	13.4%
Rowan University of New Jersey	Rowan University Co-Generation Plant	16,390	9.7%	9.0%	0.4%	24.0%
Rowan University of New Jersey	South Jersey Technology Park	15,206	8.3%	9.0%	0.0%	7.7%
South Harrison Twp B.O.E	South Harrison Elementary School	66,609	12.6%	9.0%	0.5%	10.6%
Woodbury B.O.E	Woodbury High School	21,261	17.9%	9.0%	1.7%	9.1%
<b><i>Hudson County</i></b>						
Bayonne B.O.E	Public School #14	63,598	46.6%	60.0%	0.0%	4.9%
*Hoboken	Salvatore R. Calabro, No. 4 E.S.	14,351	27.3%	60.0%	1.4%	10.4%
Secaucus Town	Secaucus Recreation Center	15,224	11.2%	60.0%	0.0%	3.1%
*Union City (Hudson Co.)	Union City Early Childhood Center	20,511	20.2%	38.0%	0.6%	9.4%
<b><i>Hunterdon County</i></b>						
South Hunterdon Regional B.O.E	South Hunterdon Regional High School	79,966	10.4%	3.0%	0.2%	11.7%
<b><i>Mercer County</i></b>						
East Windsor Regional B.O.E	Ethel McKnight Elementary School	21,268	23.6%	19.0%	0.6%	5.3%
East Windsor Regional B.O.E	Perry L. Drew Elementary School	21,268	23.6%	19.0%	0.6%	5.3%
Trenton City B.O.E	Trenton Daylight/Twilight High School	75,458	37.0%	30.0%	1.7%	7.8%
<b><i>Middlesex County</i></b>						

\*Indicates PLA Project

**APPENDIX III Minority, Female and Apprentice Construction Employment Participation by Project All 108 Projects Completed July 1, 2007 - June 30, 2008**

District/Board of Education	Project Name	Total Project Work Hours	Minority Participation	Minority Obligation	Female Participation	Apprentice Participation
North Brunswick Township B.O.E	Adams Elementary School	21,198	38.5%	24.0%	0.0%	11.9%
North Brunswick Township B.O.E	Linwood Middle School	10,352	28.6%	24.0%	0.3%	11.2%
North Brunswick Township B.O.E	Parsons Elementary School	10,892	27.2%	24.0%	0.0%	20.7%
Rutgers Univ. Purchasing Dept.	Rutgers Food Innovation Center	11,754	9.8%	24.0%	1.9%	19.5%
Woodbridge Township B.O.E.	John F. Kennedy Memorial High School	24,942	3.3%	24.0%	0.0%	10.2%
<b>Monmouth County</b>						
Eatontown B.O.E.	Meadowbrook Elementary School	19,684	22.9%	15.0%	0.2%	18.4%
Eatontown B.O.E.	Woodmere Elementary School	19,684	22.9%	15.0%	0.2%	18.4%
*Long Branch	New H.S. (-x03)	69,234	24.2%	11.0%	3.1%	6.8%
Manasquan B.O.E	Manasquan Elementary School	49,812	17.7%	15.0%	0.1%	9.8%
Millstone Twp B.O.E	Millstone Middle School	117,774	20.9%	15.0%	0.0%	10.8%
<b>Chester County</b>						
Chester Township	Bragg Elementary School	20,702	11.1%	16.0%	0.0%	3.0%
Chester Township B.O.E	Dickerson Elementary School	20,702	11.1%	16.0%	0.0%	3.0%
Hanover Park Reg. Dist B.O.E	Hanover Park High School	74,600	34.5%	16.0%	0.2%	9.5%
Hanover Park Reg. Dist B.O.E	Whippany Park High School	45,988	26.8%	16.0%	0.1%	8.9%
Madison B.O.E	Central Avenue Elementary School	589	8.8%	16.0%	0.0%	41.6%
Madison B.O.E	Madison High School	28,340	22.3%	16.0%	0.1%	13.4%
Madison B.O.E	Sabatini Elementary School	589	8.8%	16.0%	0.0%	41.6%
Parsippany-Troy Hill Twp B.O.E	Brooklawn Middle School	16,593	30.3%	16.0%	0.0%	17.3%
Parsippany-Troy Hill Twp B.O.E	Central Middle School	51,035	10.9%	16.0%	1.4%	11.1%
Randolph Township B.O.E	Randolph High School	69,819	10.0%	16.0%	0.0%	3.5%
<b>Ocean County</b>						
*Barnegat Township/SDA	Joseph Donahue E.S.	32,354	7.2%	7.0%	0.3%	6.8%
*Barnegat Township	Russell O. Brackman M.S.	77,231	18.8%	7.0%	1.5%	3.6%
County of Ocean	Jakes Branch County Park Nature Center	28,249	9.8%	7.0%	0.9%	1.9%
County of Ocean	Ocean County Recycling Facility	17,037	44.5%	7.0%	1.3%	18.6%
County of Ocean	So. Ocean Cnty Offices/Recycling Facility	38,680	16.3%	7.0%	0.2%	6.8%
Ocean County College	Ocean County College Fine Arts Building	29,882	17.6%	7.0%	0.0%	20.4%
<b>Passaic County</b>						
North Haledon B.O.E	High Mountain School	35,920	6.6%	36.0%	0.3%	13.9%

\*Indicates PLA Project



**APPENDIX III Minority, Female and Apprentice Construction Employment Participation by Project All 108 Projects Completed July 1, 2007 - June 30, 2008**

District/Board of Education	Project Name	Total Project Work Hours	Minority Participation	Minority Obligation	Female Participation	Apprentice Participation
<b><i>Union County</i></b>						
Berkeley Heights B.O.E.	Governor Livingston High School	25,078	17.9%	45.0%	0.0%	18.0%
City of Elizabeth	Elizabeth Emergency Response Facility	13,420	25.2%	45.0%	0.0%	10.8%
City of Elizabeth	Elizabeth Public Works Maint. Facility	51,921	19.4%	45.0%	0.0%	6.2%
*Clark Township	Arthur L. Johnson H.S.	28,988	23.0%	45.0%	1.5%	21.9%
County of Union	Union County Arts Center	34,604	18.3%	45.0%	0.0%	4.1%
Joint Mtg. of Essex & Union Counties	Joint Meeting of Essex and Union Counties	6,569	7.9%	45.0%	0.0%	7.6%
Union County Improvement Authority	Union County Juvenile Detention Center	1,615	1.5%	45.0%	0.0%	0.5%
Union County Vo-Tech. B.O.E.	Union County Vo-Tech	70,087	16.2%	45.0%	0.0%	15.6%
<b><i>Warren County</i></b>						
Warren Hills Reg H.S. B.O.E.	Warren Hills Regional High School	81,660	10.4%	5.0%	0.1%	9.9%

\*Indicates PLA Project

**Appendix IV. Project Construction Durations Includes All 72 School Projects Completed July 1, 2007 – June 30, 2008 PLA Projects are Marked with an Asterisk (\*) (Continued)**

<u>District/Board of Education</u>	<u>Project Name</u>	<u>Construction Duration (Weeks)</u>
<i>Atlantic County</i>		
*Egg Harbor Township	Davenport Elementary School	76
*Egg Harbor Township	Slaybaugh Elementary School	76
<i>Bergen County</i>		
Bergen County Vo-Tech	Bergen Academy	105
Cresskill	Cresskill Jr/Sr High School	101
Oradell	Oradell Public School	99
Paramus	Paramus High School	73
River Dell Regional	River Dell High School	122
River Edge	Cherry Hill Elementary School	71
Rutherford	Union Intermediate School	18
Tenaflly	Tenaflly Middle School	79
Wycoff Township	Sicomae Elementary School	16
Wycoff Township	Eisenhower Middle School	43
Dumont	Grant Elementary School	93
Maywood	Maywood Avenue School	82
Maywood	Memorial Elementary School	74
Tenaflly	Tenaflly High School	78
<i>Burlington County</i>		
Eastampton Township	Eastampton Middle School	79
Maple Shade Township	Maple Shade High School	65
Maple Shade Township	Wilkins Elementary School	65
Maple Shade Township	Steinhauer Elementary School	65
Maple Shade Township	Yocum Elementary School	65
Burlington Township	Middle School at Springside	122
Lenape Regional	Cherokee High School	33
<i>Camden County</i>		
Collingswood Borough	Collingswood Middle School	68
Collingswood Borough	Collingswood High School	68
<i>Cape May County</i>		
Cape May County Technical	Cape May County Vo-Tech	64
<i>Essex County</i>		
*Irvington Township	Mt. Vernon Ave. Elementary	134
*Newark	New First Ave. Elementary	98
Roseland	Lester Noecker School	57
<i>Gloucester County</i>		
South Harrison Township	South Harrison Elementary	66
Woodbury	Woodbury High School	50

**Appendix IV. Project Construction Durations Includes All 72 School Projects Completed July 1, 2007 – June 30, 2008 PLA Projects are Marked with an Asterisk (\*) (Continued)**

<u>District/Board of Education</u>	<u>Project Name</u>	<u>Construction Duration (Weeks)</u>
<i>Hudson County</i>		
Bayonne	Public School #14	87
*Hoboken	Salvatore Calabro Elementary	56
*Union City	Schlemm Early Childhood Ctr.	132
<i>Hunterdon County</i>		
South Hunterdon Regional	South Hunterdon Regional H.S.	52
<i>Mercer County</i>		
*Trenton	Trenton Daylight/Twilight H.S.	110
East Windsor Regional	Ethel McKnight Elementary	203
East Windsor Regional	Perry L. Drew Elementary	203
<i>Middlesex County</i>		
East Brunswick Township	Hammarkjold Middle School	83
North Brunswick Township	Parsons Elementary School	57
North Brunswick Township	Adams Elementary School	57
North Brunswick Township	Judd Elementary School	57
North Brunswick Township	Linwood Middle School	57
Woodbridge Township	John F. Kennedy Memorial H.S.	74
Monroe Township	Oak Tree Elementary School	63
*New Brunswick	McKinley K Center 3	69
<i>Monmouth County</i>		
Manasquan	Manasquan Elementary School	79
Millstone Township	Millstone Middle School	132
Eatontown	Meadowbrook Elementary	40
Eatontown	Woodmere Elementary School	40
*Long Branch	New High School	187
<i>Morris County</i>		
Chester Township	Bragg Elementary School	74
Chester Township	Dickerson Elementary School	74
Hanover Park	Whippany Park High School	94
Hanover Park	Hanover Park High School	98
Madison	Madison High School	63
Parsippany-Troy Hills	Central Middle School	69
Parsippany-Troy Hills	Brooklawn Middle School	59
Randolph Township	Randolph High School	62
Madison	Sabatini Elementary School	46
Madison	Central Avenue Elementary	46

**Appendix IV. Project Construction Durations Includes All 72 School Projects Completed July 1, 2007 – June 30, 2008 PLA Projects are Marked with an Asterisk (\*) (Continued)**

<u>District/Board of Education</u>	<u>Project Name</u>	<u>Construction Duration (Weeks)</u>
<i>Ocean County</i>		
*Barnegat Township	Joseph Donahue Elementary	84
*Barnegat Township	Russell Brackman	84
<i>Passaic County</i>		
North Haledon	High Mountain School	87
*Paterson	Number 24 Elementary School	95
Wanaque	Haskell Elementary School	54
Wanaque	Wanaque Elementary School	54
<i>Somerset County</i>		
Somerset County Vo-Tech	Somerset County VO-Tech	186
Somerville Borough	Somerville Middle school	109
<i>Union County</i>		
Berkeley Heights	Governor Livingston H.S.	61
*Clark	Arthur L. Johnson H.S.	111
<i>Warren County</i>		
Warren Hills Regional	Warren Hills Regional H.S.	91