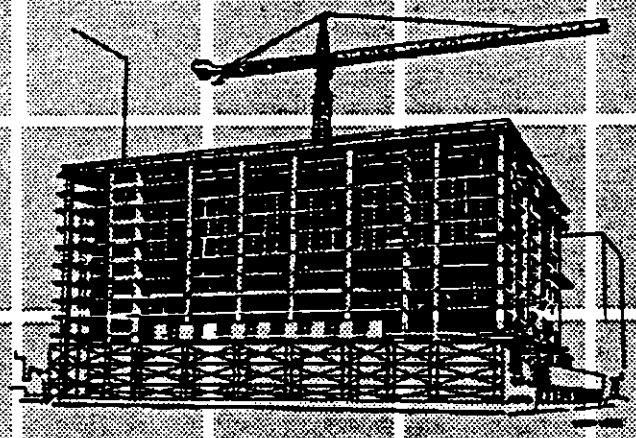
TECHNICAL PUBLICATION NO. 122

INVENTORY OF APPRENTICESHIP PROGRAMS IN THE STATE SYSTEM

This report was sponsored by
the Building Construction Industry Advisory Committee
under a grant from the
State of Florida Department of Education



John M. Dye
Project Director

William T. Stroop
Research Associate

Florida International University
Department of Construction Management
Miami, Florida
1997

INVENTORY OF APPRENTICESHIP PROGRAMS IN THE STATE SYSTEM

GRANT 95-5

John M. Dye
Project Director

William T. Stroop
Research Associate

Department of Construction Management
College of Engineering & Design
Florida International University
Miami, Florida

1997

This report was sponsored by the
Building Construction Industry Advisory Committee
under a grant from the
State of Florida Department of Education

ACKNOWLEDGMENTS

The research and work represented by this report were accomplished through the strong support and cooperation of persons both in and outside of the University system. Although many gave of their time and assistance, the following merit special recognition:

George Belcher and Lynn Murkerson
Bureau of Apprenticeship and Training, US Department of Labor, Tallahassee, Florida

Stephen Ciriaco
Apprenticeship Director, Associated General Contractors of America, South Florida Chapter

Dennis W. Coffey, Ph.D.
Visiting Instructor, Department of Construction Management, Florida International University

Betty S. Coffey, Ph.D.
Appalachian State University

Dan Faughn
Labor Employment Training Specialist, Apprenticeship Section, Bureau of Job Training, Florida Department of Labor and Employment Security

Joel Jarrett
Bureau of School Business Services, Financial Management Section, Department of Education State of Florida

Tal Rushing
Florida Department of Education

Richard Russell
Navy's National Apprenticeship Program, Pensacola, Florida

Joseph Stephens, Jr.
Administrator, Apprenticeship Section, Bureau of Job Training, Florida Department of Labor and Employment Security

In addition, the Project Director wishes to acknowledge that the preponderance of the work done in obtaining and collating the data, as well as writing this report was done by William T. Stroop in his capacity as a Research Associate. The findings, conclusions and recommendations are the responsibility of the Project Director.

TABLE OF CONTENTS

Section		Page
I.	**Executive Summary**	1
II.	**Introduction**	
	Background	6
	Scope and Limitations of the Study	6
	Definitions	7
	How Workers Are Trained	8
	Overview of Legislation	9
	Formalized Apprenticeship Training	11
III.	**The Study**	
	The Study Tasks	15
	Sources of Information	15
	Solicitation of Information	16
	Analysis of the Data	18
	Navy's National Apprenticeship Program	27
	The Need for Skilled Labor	29
	'Suspected' Construction Apprenticeship Organizations	32
IV.	**Findings, Conclusions and Recommendations**	33

APPENDICES

Appendix A. Survey Form Used by the survey team to query the Program Sponsors

Appendix B. Construction Apprenticeship Program Sponsors

Appendix C. Group or Individual, Joint or Non-Joint

Appendix D. Number of Registered Apprentices and Completions by year, by Occupation, by Program Sponsor

Appendix E. Prerequisites and Requirements by Program Sponsor and Occupation

Appendix F. Sources of Curriculum

Appendix G. Sources of Funding

Appendix H. 'Suspected' Construction Apprenticeship Training Organizations

TABLES

Table		Page Number
Table 1.	Typical Training Hour Requirements	12
Table 2.	Number of Program Sponsors By Type of Organization	19
Table 3.	Number of Program Sponsors - Joint or Non-Joint	19
Table 4.	Number of Apprenticeship Programs by Occupational Title	21
Table 5.	Number of Completions	22
Table 6.	Apprenticeship Training in the Armed Forces	27
Table 7.	State of Florida Construction Industry Employment	30
Table 8.	Occupational Employment Estimates	31

FIGURES

Figure 1.	Apprenticeship Completion Data	23

I. EXECUTIVE SUMMARY

The origin of the project covered by this report was a request by the Building Construction Industry Advisory Committee (BCIAC) that a study effort be initiated by the Department of Construction Management of Florida International University to catalog, review, and analyze data concerning the construction apprenticeship programs in the State of Florida. The specific concerns that the Committee expressed were related to funding and governance of the programs, the number of program graduates, and the value and effectiveness of the programs to the construction industry and consumers of its products. The response by the study team to fulfill the tasks listed the following as points that would be addressed:

- a survey of apprenticeship training providers to accumulate a database of information;
- a presentation of the survey results providing a listing of apprenticeship programs in Florida described by their various characteristics;
- an assessment of the benefits of the training programs to the construction industry and the consuming public.

This report fulfills the request with respect to the items requested and provides additional information concerning the subject area.

The study team consulted with the Bureau of Apprenticeship, an agency within the Florida Department of Labor and Employment Security, and the Bureau of Apprenticeship and Training, United States Department of Labor, to enlist their support for the study and to profit from their knowledge and experience. In addition to these agencies, the team interviewed apprenticeship training providers, individuals within the State of Florida Department of Education and the United States Department of Labor, and solicited information from each entity that conceivably could be involved in the formalized apprenticeship training of construction workers.

The study effort was limited in several aspects. It essentially focused on formalized construction training and did not deal with training not recognized by the state's Bureau of

Apprenticeship; it covered only the training done in Florida; and not all organizations that were asked for information responded. In addition to the initial tasking the team investigated the methodology by which construction workers obtain training and reviewed both the federal and state laws that are applicable to apprenticeship training. Discussions of these two items are included in the report.

The federal government recognizes 835 apprenticeable occupations. The Tallahassee office of the federal Department of Labor, which is responsible for apprenticeship training in Florida, provided inconsistent information on the number of those that were applicable to construction. The surveys from the providers indicated that they are currently providing training in 35 different occupational areas, from acoustical carpenter through welder.

Formalized apprenticeship training is a combination of classroom instruction and on-the-job training in the related occupation. Federal and state law and regulation establish the minimum number of instructional and work hours for each occupation. Providers establish related instruction and work hours through documents named "Work Processes Schedules", which list the types of training, the specific number of hours, and what is to be covered in the training. These are reviewed and approved by the state's Bureau of Job Training as a part of the process by which organizations become approved providers. The individual providers are then responsible for the solicitation and enrollment of students. The funding for the programs comes from a variety of sources, including federal and state funds, funds provided by the employers of individuals undergoing the training, funds provided by local school boards and other governmental jurisdictions, funds provided by labor unions and construction trade associations, and fees paid by individuals.

Data provided by the survey respondents, correlated with that provided by the federal government, indicated that the programs range from a minimum of 2 years to a maximum of 6 years, with the most common being four. The annual classroom hours established by the federal standards is 144, and the respondents indicated that the programs in Florida ranged from 140 hours to , in one case, 440.

The team determined that there were nearly 6,000 individuals enrolled in formalized construction related apprenticeship programs in the state. Information provided by the federal government indicated 5,820, while the survey responses, which the team

acknowledges to be incomplete, indicated 4,317. However, the number of individuals to whom the state issued certificates of completion in 1996 was only 392. Given a nominal 4 year program and the possibility of one fourth of the enrollees completing in any one year, this amounts to an attrition rate of approximately 70%.

In order to assess the benefits of the current training programs, the study team has carefully reviewed the data and synthesized the various reports. The benefits of the training program are described qualitatively but not quantitatively.

Throughout the period during which the study was conducted there was a noticeable lack of cooperation from employees in the state agency directly responsible for oversight of the apprenticeship programs. Data requested, by letter, facsimile, and by telephone, were furnished only after repeated requests or not at all. The team does not know whether or not this was simply a case of bureaucratic turf protection, a lack of knowledge of the subject area, incomplete record keeping, or the lack of ability to process data. Information cited in the report indicates that this is not a series of isolated instances. A similar reluctance was encountered when discussing sources of funding with individual sponsors of training programs.

The primary effort of the team was focused on the assembling of a data base of information received from the organizations that conduct formalized construction related apprenticeship training within the state. The data base assembled from the study is available from the research team in magnetic format for the use of individuals and organizations that may be interested in continuing work in this area. Pertinent details are presented in the Appendices to this report.

II. INTRODUCTION

Background

The objective of providing a formal mechanism for construction workers to improve their skills, to improve the quality of construction, and to increase individual earnings, encompasses areas of interest to union and non-union organizations alike. Apprenticeship programs have been a part of the construction industry for hundreds of years. Their heritage runs back to the European guilds, where a strong tradition of craft quality and tradesman integrity was begun. In the United States, construction apprenticeship training was traditionally provided by the labor unions. Although their influence in this area has diminished in recent years, the tradition of training new tradesmen remains an important hallmark of the union organizations. Apprenticeship training remains one of their most important and successful activities.

More recently, there has been an expansion of formal apprenticeship training programs by non-union organizations. Formal apprenticeship training is now being conducted by both union and non-union entities.

Scope and Limitations of the Study

The scope of this study is limited. First, the study is limited to apprenticeship as it relates to construction in the State of Florida. All of the various types of construction, including residential, commercial and infrastructure, are included within the scope of the project. (Infrastructure includes categories such as highways and utility transmission lines.)

Secondly, the objective of the study was to catalog the apprenticeship training programs in the state. The term 'cataloging' suggests an exhaustive listing. This report does not contain an exhaustive listing of apprenticeship training programs. It was a goal that was not attainable as it was not possible to ensure that the project team became aware of each program existing within the State. The Bureau of Job Training (F-BJT), Florida Department of Labor and Employment Security was the primary source of information in identifying apprenticeship training sponsors; their list was not totally accurate. Some of the program sponsors on the list have ceased work; the study team was able to identify additional

SUMMARY FINDINGS AND CONCLUSIONS

The nature of the tasking and the work undertaken for this report do not lend themselves well to the normal "findings, conclusions, and recommendations" associated with the more traditional research type of work done for the study sponsors. However, there are specific items and shortcomings in the overall construction related apprenticeship program in Florida that need to be addressed.

1. Absence of Accountability

The study team is not able to state, with certainty, the exact number of organizations providing construction related apprenticeship training. Similarly, the state and federal agencies charged with tracking and monitoring the training were unable to provide the information. Additionally, there appears to be pro-forma acceptance of training times and standards rather than a true oversight function for these agencies.

2. Recognition of the Value of Formalized Apprenticeship Training

Approximately 60% of the counties in the state issue licenses for journeymen in construction related trades. Half of these require a specific ratio of journeymen to lesser trained individuals on construction sites. These requirements provide a strong motivation for the strengthening and continuation of the programs

3. Statewide Acceptance and Reciprocity for Graduates

The completion certificate provided by the state for individuals finishing an apprenticeship program does not recognize that the individual meets the definition of a journeyman and is not necessarily recognized by local jurisdictions as a sufficient accomplishment for licensing.

4. Enrollment and Completion

The data collected during the study indicate that approximately 70% of those individuals that start formalized construction related apprenticeship training fail to complete the work /study that is required.

5. Commonality of Training

Interviews with providers of construction related apprenticeship training and with knowledgeable members of the construction profession indicate that there is a common core of knowledge that is required of all individuals completing such training, such as elementary blue print reading and construction mathematics. It may be cost effective to establish

regional training centers for these fundamental skills rather than each provider setting up training and facilities for these subjects.

6. Oversight and Regulation

The apparent reluctance or inability of the state's Apprenticeship Section of the Bureau of Job Training , referred to in the report as F-BJT, to provide even the most elementary data concerning apprenticeship training in Florida raises questions as to their purpose and ability to maintain an oversight and regulatory function in this area.

RECOMMENDATIONS

The following specific items are recommended for action by appropriate agencies:

1. Reciprocity

Appropriate legislation and regulation should be provided that will ensure that individuals completing a recognized program for construction trades apprenticeship programs can be licensed as journeymen in any jurisdiction of the state without further testing or examination.

2. Enrollment and Completion Rates

A study should be undertaken to determine the causes of attrition prior to completion of apprenticeship training.

3. Commonality of Training

An effort should be made to determine the cost effectiveness of collectively conducting common training requirements for construction related apprenticeship training, such as blue print reading and construction mathematics, rather than in each individual program.

4. Oversight and Regulation

An audit should be conducted of the functioning of the Apprenticeship Section of the Bureau of Job Training in the Florida Department of Labor to determine its capability and effectiveness in monitoring the apprenticeship training programs in the state.

sponsors during the course of the study. Databases tend to evolve over time and require constant revising and the capability of the F-BJT to maintain an up-to-date record of the relevant programs is questionable.

Another limitation was the number of responses provided by the institutions surveyed. The study team could only report and evaluate the information obtained from survey responders. The fact that certain providers of apprenticeship training neglected or failed to supply the requested information, is a limitation that could not be overcome by the research team. However, when the survey response rate is considered from the point of view of normal survey situation where there is a survey based on sampling parameters, the overall response rate of approximately 60% would be considered very successful.

A final limitation is mentioned only for completeness. Some readers may consider the term 'journeyman' to include an explicit reference to the male sex. While there are increasing numbers of women in the trades, there do not appear to be many gender neutral terms to be in common use in construction. 'Chairperson' as compared to 'Chairman' is a common use appellation that we have grown accustomed to. However, nowhere in the literature or legislation did the study team find reference to a 'journeyperson'. Consequently, the terms 'journeyman' and 'journeymen' are utilized throughout and are intended to include both men and women. Maintaining this same convention the authors abided by the convention of using the masculine form of the third person singular pronoun ('his' instead of 'his/her') with the intent that it included both genders. However, the authors have substituted the term "workers" for the term "workmen" because it is more inclusive.

Definitions

An understanding of the following definitions is necessary in order to understand the remainder of the report[1]:

(1) "Preapprentice" means any person 16 years of age or over engaged in any course of instruction in the public school system or elsewhere, which course is registered as a pre-apprenticeship program with the Division of Jobs and Benefits of the Department of Labor and Employment Security.

(2) "Apprentice" means a person at least 16 years of age who is engaged in learning a recognized skilled trade through actual work experience under the supervision of journeymen craftsmen, which training should be combined with properly coordinated studies of related technical and supplementary subjects, and who has entered into a written agreement, hereinafter called an apprentice agreement, with a registered apprenticeship sponsor who may be either an employer, an association of employers, or a local joint apprenticeship committee.

(3) "Trainee" means a person at least 16 years of age who is engaged in learning a specific skill, trade, or occupation within a formalized, on-the-job training program.

(4) "Journeyman" means a person working in an apprenticeable occupation who has successfully completed a registered apprenticeship program or who has worked the number of years required by established industry practices for the particular trade or occupation.

(5) "Joint employee organization" means an apprenticeship sponsor which participates in a collective bargaining agreement and represents employees.

(6) "Nonjoint employer organization" means an apprenticeship sponsor which does not participate in a collective bargaining agreement and who represents management."

How Workers Are Trained

In a previous study conducted at the University of Florida for the BCIAC, Oppenheim and George identified three basic methods of providing construction industry training:[2]

1. formal and informal on-the-job training;
2. training off the job in schools and/or training centers;
3. formal apprenticeship with academic vocational instruction and structured, supervised, on-the-job training.

It is important to differentiate between formal apprenticeship training and the other types of training. as this report deals primarily with the formalized aspects.

The University of Florida study projected an annual demand for journeyman-level craft workers of 5,750 individuals and determined that only 16% of the demand was being filled by apprenticeship program completers; an additional 19% of the demand was filled by "semi-

skilled vocational and technical education job preparation program graduates.[3] The UF study concluded: "This investigation confirmed that Florida's construction industry is providing the craft work force with insufficient formal training opportunities." The conclusion is based on the assumption that the demand for formal training opportunities (that is, formal apprenticeship programs) should equal the demand for journeyman-level craft workers.

The conclusion also minimizes the importance and utility of formal or informal on-the-job training programs that are not affiliated with formal apprenticeship training programs. However, a significant source of training in the construction industry, as in other industries, is provided by contractors and subcontractors to employees in the normal course of their everyday work routine. This on-the-job training (OJT) occurs regardless of whether the organizations are registered with the State as formal apprenticeship training programs. Because a significant amount of skill development does take place, either formally or informally, in circumstances that are not affiliated with a formal apprenticeship training program, studies are incomplete if they fail to take this fact into account.

Overview of Legislation

Apprenticeship training has been the subject of legislation at both the federal and state levels. The federal legislation empowers the United States Department of Labor (USDOL) to oversee apprenticeship programs and pursue the goals enumerated in the legislation. At the state level, the Florida Department of Labor and Employment Security (FDLES) has been given a comparable mandate.

At the federal level, the National Apprenticeship Act of 1937 (29 U.S.C. 50) directed the Secretary of Labor "to formulate and promote the furtherance of labor standards necessary to safeguard the welfare of apprentices, to extend the application of such standards by encouraging the inclusion thereof in contracts of apprenticeship, to bring together employers and labor for the formulation of programs of apprenticeship, to cooperate with State agencies engaged in the formulation and promotion of standards of apprenticeship, and to cooperate with the Office of Education under the Department of Health, Education, and Welfare."[4]

The United States Department of Labor, operating through its Bureau of Apprenticeship and Training (US-BAT), has the responsibility for implementing the congressionally

mandated objectives. The US-BAT has published a statement of purpose, which succinctly states the goals of the agency: "To stimulate and assist industry in developing and improving apprenticeship and other training programs designed to provide the skilled workers needed to compete in a global economy."[5]

At the state level, Florida Statutes, Chapter 446: Job Training, expresses the governmental intention of promoting apprenticeship training in occupations that "require physical manipulative skill." The statute says the FDLES shall have the responsibility for the development of uniform minimum standards for the apprenticeable trades. The Bureau of Apprenticeship within the Division of Jobs and Benefits has the responsibility to "promote, register, monitor and service apprenticeship and training programs and ensure that such programs adhere to the standards."[6] The Statute refers to the "Bureau of Apprenticeship" within the Division of Jobs and Benefits while the agency refers to itself as the Apprenticeship Section within the Florida Bureau of Job Training (for clarity, F-BJT) The statute specifically states that it is not the intention of the legislature to require the use of apprentices on construction projects financed by the state or any county... or other agency of state or local government.[7]

The Florida statute creates the State Apprenticeship Council (SAC), composed of 13 members, which is advisory to the Division of Jobs and Benefit.[8] The SAC is to advise the division on matters relating to apprenticeship but is not to establish policy. Five members represent joint employee organizations and five members represent nonjoint employer organizations. The other three seats are held by the director of the Division of Jobs and Benefits, the administrator of industrial education for the Department of Education and the state director of the Division of Jobs and Benefits of the United States Department of Labor.

Criteria for apprenticeship occupations

As excerpted, Florida Statutes section 446. 092 provides:

An apprenticeable occupation is a skilled trade which possesses all of the following characteristics:

(1) It is customarily learned in a practical way through a structured, systematic program of on-the-job, supervised training.

(2) It is commonly recognized throughout the industry or recognized with a positive view towards changing technology.

(3) It involves manual, mechanical, or technical skills and knowledge which require a minimum of 2,000 hours of work and training, which hours are excluded from the time spent at related instruction.

(4) It requires related instruction to supplement on-the-job training. Such instruction may be given in a classroom or through correspondence courses.

(5) It involves the development of skill sufficiently broad to be applicable in like occupations throughout an industry, rather than of restricted application to the products or services of any one company.

(6) It does not fall into any of the following categories:

a. Selling, retailing, or similar occupations in the distributive field.
b. Managerial occupations.
c. Professional and scientific vocations for which entrance requirements customarily require an academic degree.

Formal Apprenticeship Training

Formal apprenticeship is only one way to acquire construction skills. However, there are key differences between construction skills acquired through apprenticeship and construction skills acquired through other training mechanisms consisting primarily of OJT. The first of these relates to the breadth of training. It is generally considered that graduates of formal apprenticeship programs are more broadly trained.[9] Conversely, construction workers engaged in specific types of work would tend to become very proficient in that particular type of work but may lack the breadth of training to allow an immediate transition to another type of work. For example, a residential electrical worker, who has received training from his employer, but has not participated in a formal apprenticeship training program, will typically require additional training to make the transition to commercial electrical work. On the other hand, an electrical journeyman, having competed a formal apprenticeship training program, will be prepared to more readily make a transition from residential work to commercial work.

The breath of training is assured by the related classroom instruction and the skill areas that are included in the OJT.

The second key difference is the standard which determines when an apprentice has completed his apprenticeship. In the formal system, each step towards completion can be readily determined. In the less formal training systems, the determination of when an individual makes the transition from apprentice to journeyman is less distinct, although no less important. In the informal system, pay rates and responsibilities will be more closely associated with the performance reviews conducted by superiors. In the formal system, the pay rates and changes in responsibilities are rigorously linked to the passage of a predetermined amount of time as well as the achievement of a prescribed level of skill.

Formal apprenticeship training is only provided by organizations that are registered with the F-BJT as an approved provider of apprenticeship training according to an agreed upon work process schedule. The work process schedule sets forth the formal training requirements for the apprentice, including hours of OJT in particular skill areas and the hours of training in a class room setting--known as "related instruction." Typically, the number of hours of OJT ranges from 4000 hours to 8000 hours in the aggregate, depending on the occupation. Table presents information for typical construction related programs.

Table 1
Typical Training Hour Requirements[10]
Construction Related Trades

Occupational Title	Training Hours*
Bricklayer	6,000
Carpenter	8,000
Electrician	8,000
Landscape Technician	4,000
Plumber	8,000
Roofer	4,000
Refrigeration Mechanic	6,000
Sheet Metal Worker	8,000

*A training hour requirement of 2,000 hours is equivalent of 1 year. The training hour requirement is normally a combination of formal instruction and on-the-job experience.

The minimum number of hours of related training is typically 144 hours per year. These parameters are set at the federal level by the US-BAT in cooperation with the SAC's and are part of the work process schedule established by the F-BJT for the individual apprenticeship program trainer.

Another typical feature of the formal apprenticeship process is the execution of an indenture agreement between the apprentice and the apprenticeship program sponsor. The indenture creates a committed contractual relationship between the apprentice and the program sponsor.

The OJT is provided by the employer and the wages are set according to an agreed percentage of the journeyman's prevailing wage rate. The related instruction is provided by or through the program sponsor, and might be held in a union training facility, a trade association facility, a public school facility or a community college facility.

Upon completion of a registered apprenticeship training program, the apprentice is eligible to receive a Certificate of Completion of Apprenticeship from the F-BJT and a separate certificate from the US-BAT. Interviews with representative of the F- BJT and US-BAT indicate that not everyone completing a program receives a certificate; in order to receive a certificate, the certificate must be requested, which is not always done.

Once a person receives his apprenticeship completion certificate, he has every right under the prevailing definitions to consider himself and to wear the accouterments of a "journeyman". An individual who completes an apprenticeship program that is registered with the F-BJT and the US-BAT meets that definition. However, it is noteworthy that the certificate does not mention the term "journeyman." While one might expect that the completion of an apprenticeship training program would lead to certification as a journeyman, that is not the case. Instead, the completer of a registered apprenticeship program is merely certified as having completed the apprenticeship.

Local jurisdictions that license journeymen do not always recognize either the state certificate or the completion of the program as sufficient evidence to obtain a license. Unlike state certified contractors, who are free to pursue their occupation in any jurisdiction in the state without further testing or examination, the holder of a certificate of completion from an approved apprenticeship program is subject to the vagaries of local jurisdictions in so far as

additional testing, examination, and licensing is concerned. Approximately 60% of the counties in Florida issue journeyman licenses, while the remaining do not. Half of those that do issue licenses also require that journeymen be employed on construction sites in a particular ratio of licensed to non-licensed individuals. (It should be noted that the courts have found that this latter requirement restriction cannot be applied to state certified contractors, and that legislation is pending which will further restrict the local jurisdictions in the establishment of personnel requirements as they apply to contractors.)

A legislative committee staff report on the subject of control over state certified contractors noted that, in the case of journeymen, that certain counties indicated "...a willingness to reciprocate..." but that industry sources had stated that non-reciprocity was more likely than not.[11] The Construction Industry Study Committee (CISC), appointed by the Governor in 1996 in response to a legislative mandate, recommended that there be mandatory reciprocity by local jurisdictions for journeymen who meet (or exceed) an established standard.[12] However, the legislature has taken no action on any of the recommendations made by the CISC.

A further anomaly present in the certification procedure is that completion of a federally approved apprenticeship training program in another state does not provide certification in the State of Florida. Similarly, certification in this state does not provide for reciprocity or certification in another.

III. THE STUDY

The Study Tasks

The study team was tasked with the following: (1) the identification of sources of information concerning the apprenticeship program; (2) the solicitation of information; (3) the analysis of the data ; and (4) provide a report on the information gathered.

Sources of Information

As a result of the preliminary investigation done by the study team, it became clear that the Apprentice Section of the Bureau of Job Training (F-BJT) should be the primary information source for apprenticeship training in the state. The corresponding agency, at the federal level, is the Bureau of Apprenticeship and Training (US-BAT) of the US Department of Labor.

The F-BJT and the state US-BAT offices are headquartered in Tallahassee. There are eleven regional service areas of the F-BJT in the state, of which nine are currently staffed by Apprenticeship Representatives. No staff has been provided for the other two offices and their sites have not been chosen. Those staffed are located in: Pensacola, Tallahassee, Jacksonville, Orlando, West Palm Beach, Miami, Fort Myers, Tamp/St. Petersburg, and Pinellas.

Initial contact with the F-BJT and the US-BAT was made by mail and telephone. The team found F-BJT to be generally reluctant or unable to provide the information requested. It should be noted that a portion of the requested information was furnished without delay, but the majority of the key information was either provided slowly or not provided at all. Researchers at the University of Florida had similar problems with both the federal and state agencies involved. "To gain access to the US-BAT records, the researcher would have to sue under the Freedom of Information Act, a convoluted and lengthy process. Upon a request from the researcher, F-BAT supplied a dated list of all registered apprenticeship training providers in Florida. F-BAT does not, however, summarize apprenticeship records or keep running totals of the number of apprentices enrolled in each of the registered training

programs. Apprenticeship records are kept in hard-copy form at the F-BAT office and are not computerized. "[13] Other than the fact that the acronym for F-BAT has been changed to F-BJT in this report, there has been no appreciable change since those words were written in 1994.

In the current instance, when queried for registration data concerning apprenticeship training, the F-BJT, the agency charged with the responsibility of registering all apprenticeship programs in the state, could not provide the data. Additionally, the information could not be provided by the regional service areas. Subsequently, the project team also requested the following data:

1. Data indicating the number of completion certificates issued by the F-BJT, by year, by trade (by program sponsor) for 1993 through 1996;
2. Data indicating the number of apprentices currently registered with the F-BJT (by trade, by program sponsor);
3. A listing of the program sponsors along with the F-BJT-assigned program ID number.

The F-BJT was unable to provide the information. When the survey team made its data request directly to the state US-BAT office the information was forthcoming. Failure of F-BJT to provide the requested data may be indicative of the fact that they have an imperfect knowledge of the programs for which they have an oversight responsibility.

In addition to requests for information made to US-BAT and F-BJT, the team interviewed sponsors of apprenticeship training. This was done to determine the types of programs that were in existence, the funding sources for these, sources of instructional material, and to gather back ground information.

Solicitation of Information

The second task of the study group was to develop an understanding of where the apprenticeship programs are and what organizations sponsor them. The vehicle for doing this was a survey to obtain the following essential characteristics:

- trade addressed;
- enrollment procedures and standards;

- enrollment caps;
- rate of completion;
- source and length of curriculum;
- funding types and sources;
- governance;
- program graduates.

The original design of the survey was accomplished by the study team and validated through interviews with providers. Subsequent to initial validation of the instrument it was submitted to individuals knowledgeable in the construction and preparation of surveys for their review prior to use. A copy of the final survey is included as Appendix A.

The distribution (mailing) list for the survey was provided by the F-BJT. However, since this agency is concerned with apprenticeship training in all areas of the work force, construction and non-construction, considerable sorting was required. An initial mailing of the survey and the cover letter was made; a follow up letter was sent to the program sponsors as a reminder to complete and return the survey; a third letter was sent with another copy of the survey to those who had not responded.

The initial mailing was to 216 construction apprenticeship training program sponsors. In some cases, the survey responses indicated that the recipient was not involved in apprenticeship training or that they trained apprentices in occupations other than construction. Additionally, although not necessarily reflected on the F-BJT mailing list, there were several organizations which have multiple locations around the state. In those cases, one survey may have been returned reflecting multiple locations. In all, it appears that the universe of "suspected" construction trainers is approximately 135 different entities. Survey responses were received from 76 of these organizations. There are additional organizations that did not reply and for which data have not been obtained to determine if they are providing construction related training.

Analysis of the Data

The project team entered all of the available data from the surveys into a database. This data base will be made available to F-BJT in magnetic format and is available to any reader of this report. However, no attempt will be made to update the data and to maintain the data base beyond the end of the project. Individual tabular reports from this data base are included in the Appendices to this report. Summary data from the individual tables are discussed below.

Construction Apprenticeship Program Sponsors

Appendix B contains a listing, including addresses, telephone, and facsimile transmission links for those program sponsors responding to the survey. The usefulness of the Appendix is primarily that it is the most complete listing of construction related apprenticeship programs that is available. The origin of the listing was similar data provided by the F-BJT. Unfortunately, neither the data provided by F-BJT nor that gathered by the research team is complete. A portion of the incompleteness of the team's data was caused by the lack of response from individuals and organizations that were, at some time, registered with the state as providers of apprenticeship training. A second cause for incompleteness was errors contained in the F-BJT data. Approximately 12% of the organizations listed on the F-BJT data sheet had no current mailing address. Compilation of a correct and complete database containing the organizations concerned with apprenticeship training is something that should be vigorously pursued.

Group or individual, joint or non-joint

Question 3 of the survey asked the program sponsors to identify the organizational nature of their program. The results are of the survey are reported in Appendix C and summarized in Table 2. Of the 76 organizations that responded to the survey, approximately 34 were 'joint' (union) organizations and 42 were 'nonjoint' (non-union) organizations.

Table 2
Number of Program Sponsors by Type of Organization

Description of Type of Organization	Type of Organization (Abbreviation)	Program type as described by Program Sponsor	Program type as described by F-BJT
Group joint	GJ	3	0
Individual joint	IJ	2	4
Joint Apprenticeship Council	JAC	9	25
Joint Apprenticeship Training Committee	JATC	20	4
Group non-joint	GNJ	30	28
Individual non-joint	INJ	12	15
TOTAL RESPONSES		**76**	**76**

Examination of the table shows a lack of consistency between what the program sponsors consider to be their type of organization as compared to the program type as described by F-BJT. This discrepancy could be caused by: a lack of precision in definitions; a lack of agreement between the program sponsors and F-BJT; or errors in the data held by F-BJT. However, when comparisons were made based only upon a joint and non-joint distinction, the results, as shown in Table 3, provided a high degree of correlation between the data. This indicates a lack of understanding on the part of either the sponsor or F-BJT as to the meaning of the descriptors in the definitions.

Table 3
Number of Program Sponsors - Joint vs. Non-Joint

Type of Organization	Types of Organizations Included	Program type as described by Program Sponsor	Program type as described by F-BJT
Joint	GJ, IJ, JAC, JATC	34	33
Non-Joint	GNJ, INJ	42	43
TOTAL RESPONSES		**76**	**76**

Types of apprentices being trained

The US Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training (US-BAT) recognizes (or approves) occupations as

apprenticeable by the Bureau. The USDOL publishes an index and codes for occupational titles which is revised periodically as new occupational fields are defined. The codes and titles utilized in this report are from the Revised Fourth Edition of the Dictionary of Occupational Titles (DOT). The US-BAT currently recognizes 835 occupations as apprenticeable.

As can be seen from the Table 4, on the following page, survey respondents provided information about 142 construction related apprenticeship training programs within the State. The table also demonstrates a further difficulty in analyzing data gathered through the survey. In response to a query concerning the number of apprentices currently registered in training programs in Florida, the US-BAT provided information to the research team indicating that there are 17 apprenticeable occupations in construction related fields. In response to another query concerning the program sponsors and the corresponding training areas, they provided information indicating that there are 26 apprenticeable occupations in the construction trades. The responses to the project survey indicated that apprenticeship training is provided in 35 apprenticeable occupations. The study team was not able to resolve the correctness of the three different responses despite repeated requests to US-BAT and F-BJT. Consequently it was unable to reach a definitive conclusion regarding the exact number of construction related apprenticeable occupations for which training is provided in Florida.

Table 4
Number of Apprenticeship Programs by Occupational Title as reported by Survey Responders

Count	Occupational Title	DOT code*
1	Acoustical Carpenter	860.381-010
1	Boiler operator	950.382-010
4	Bricklayer (const)	861.381-018
14	Carpenter	860.381-022
1	Carpenter, maintenance	860.281-010
1	Carpenter, Pile driver	860.381-581
1	Cement Mason	844.364-010
2	Electric Meter Repairer	729.281-014
23	Electrician	824.261-010
2	Electrician, maintenance	829.261-018
2	Electrician, substation	820.261-018
1	Elevator constructor	825.361-010
11	Heating & Air-Cond Inst-Serv	637.261-014
2	Insulation Worker	863.364-014
3	Line erector	821.361-018
1	Line Maintainer	821.261-014
2	Line Repairer	821.361-026
2	Maintenance mechanic (any ind)	638.281-014
1	Maintenance mechanic, telephone	822.281-018
2	Maintenance Repairer, Build	899.381-010
2	Millwright	638.281-018
6	Operating Engineer	859.683-010
3	Painter (const)	840.381-010
14	Pipefitter (const)	862.281-022
1	Plant maintenance mechanic	638.281-014
1	Plasterer	842.361-018
17	Plumber	862.381-030
1	Powerhouse electrician	820.261-014
4	Refrigeration mechanic (any ind)	637.261-026
3	Roofer	866.381-010
9	Sheet Metal Worker	804.281-010
1	Structural-Steel Worker	801.361-014
1	Tile setter	861.381-054
1	Waste-treatment operator	955.382-014
1	Welder, Combination	819.384-010
142	**Total Programs**	
35	**Number of occupational codes**	

* The DOT codes are from the Revised Fourth Edition of the Dictionary of Occupational Titles (DOT)

Number of Registered Apprentices and Completions

The study team attempted to determine the number of individuals undergoing apprenticeship training, the number of completions, and the number of completion certificates issued over a period of years. Given that the survey data were incomplete the information provided by the program sponsors is also incomplete. Data were not made available by F-BJT. That agency indicated that they did not track the statistics although they would make the manually kept records in Tallahassee available at that site. US-BAT provided the data that they maintain on the subject. Data provided by the survey concerning enrollments and completions are reported fully in Appendix D.

As would be expected, there is a discrepancy between the numbers of individuals that US-BAT indicates are currently enrolled in construction related apprenticeship trades in Florida (5,820), and those that are indicated in the survey responses (4,317). There are at least two sources for the error: lack of completeness of the survey data; lack of consistency in definitions as to those apprenticeship programs that are related to construction.

The data for completions as reported by the two sources are summarized and depicted in Table 5.

Table 5
Number of Completions Reported by Registered Construction Apprenticeship Training in Florida by Year

Reporting Organization	1996	1995	1994	1993	Total
US-BAT	392	751	961	1109	2628
Surveys	435	454	452	NA	NA

Despite the fact that the data obtained through the survey are incomplete, they indicate a relatively level trend in the number of apprenticeship completions, while the US-BAT data shows a seriously declining trend in the number of certificates issued. The disparity may be caused by a combination of factors: the reporting periods may be different; it is not necessary to receive a certificate in the same year that the training was completed; the number of occupational fields considered is not necessarily the same. However, if the trend shown in Figure 1 for the US-BAT data are accurate, there is a remarkable decline in the

Number of Registered Apprentices and Completions

The study team attempted to determine the number of individuals undergoing apprenticeship training, the number of completions, and the number of completion certificates issued over a period of years. Given that the survey data were incomplete the information provided by the program sponsors is also incomplete. Data were not made available by F-BJT. That agency indicated that they did not track the statistics although they would make the manually kept records in Tallahassee available at that site. US-BAT provided the data that they maintain on the subject. Data provided by the survey concerning enrollments and completions are reported fully in Appendix D.

As would be expected, there is a discrepancy between the numbers of individuals that US-BAT indicates are currently enrolled in construction related apprenticeship trades in Florida (5,820), and those that are indicated in the survey responses (4,317). There are at least two sources for the error: lack of completeness of the survey data; lack of consistency in definitions as to those apprenticeship programs that are related to construction.

The data for completions as reported by the two sources are summarized and depicted in Table 5.

Table 5.

Number of Completions Reported by Registered Construction Apprenticeship Training in Florida by Year

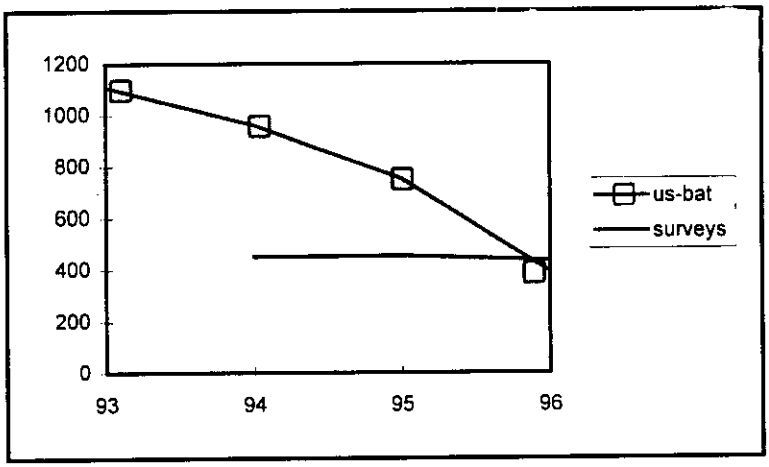
Reporting Organization	1996	1995	1994	1993	Total
US-BAT	392	751	961	1109	2628
Surveys	435	454	452	NA	NA

Despite the fact that the data obtained through the survey are incomplete, they indicate a relatively level trend in the number of apprenticeship completions, while the US-BAT data shows a seriously declining trend in the number of certificates issued. The disparity may be caused by a combination of factors: the reporting periods may be different; it is not necessary to receive a certificate in the same year that the training was completed; the number of occupational fields considered is not necessarily the same. However, if the trend shown in Figure 1 for the US-BAT data are accurate, there is a remarkable decline in the

overall number of individuals completing apprenticeship programs in this state, and this decline has occurred in a very short period of time.

Figure 1

Apprenticeship Completion Data



Prerequisites and Requirements of Apprenticeship Training

Individual apprenticeship training organizations were surveyed as to the requirements for entrance into, and completion of, their programs. The survey requested information concerning the educational prerequisites. The most common response, 64.4%, was a minimum of high school or G.E.D. diploma. The replies ranged from none (4.9%) to "read and write."

In addition to the educational prerequisite, the prospective trainee normally must agree to become employed in the field and remain so for the period of training. The term used for this latter part of the agreement is indenture, but with a slightly different meaning than normal. In this case the agreement is between the individual and the training organization, rather than the individual and a firm. Only 17% of the responding organizations did not report an indenture type of requirement.

The survey responses revealed a consistency of the number of years of OJT that are required within each occupational field with two exceptions: pipe fitters and air-conditioning installation and servicing. In these two fields, there can be two years difference in the OJT

requirements between training organizations, some being higher, others being lower. The study team did not request information with the surveys that would indicate if this is due to unusual training conditions or specialized training requirements not normally associated with the trade.

The annual number of hours of formalized class requirements reported varied from a low of 140 to a high of 440. US-BAT requirement for this training element is 144 hours, per year, for all trades. The data reported for the training programs in Florida show a mean classroom training requirement of 168.7 hours, with a median of 150 hours, and a mode of 144 hours. The standard deviation from the sample mean is 37.22 hours for the entire sample. If the single reported classroom training requirement of 440 hours is deleted from the sample, mean decreases slightly (to 166.6) and the standard deviation decreases to 28.48 hours, the median and the mode remaining unchanged.

The classroom training hours translate directly into program costs. Instructors are paid on the basis of the number of classes and the number of hours for these classes. Space must be contracted for, and there are academic supplies which are directly related to time. Programs with a higher number of annual class hours should be expected to be more expensive. A question that individuals and organizations that provide the funding for apprenticeship training programs may want to address is the requirement for providing the number of hours reported if those numbers exceed one standard deviation from the norm. Put another way, if the average apprenticeship program can perform the necessary training utilizing approximately 167 classroom hours, annually, what are the peculiar requirements of those that require significantly more expensive programs?

The survey utilized by the study team also requested information to determine if the capacity of the individual providers in any way limited access to the training programs. The overwhelming response (88%) was that there are no capacity constraints. However, the team considered that this was indicative of the fact that the programs are essentially underutilized. There is some limitation for each provider, but the survey failed to elicit a correct response. Detailed information on the responses to this section of the survey, showing the individual respondents, occupations, and perquisites, and training requirements, is included as Appendix E.

Sources of Curriculum

The survey form requested information on the sources of the curriculum used by each of the respondents, divided into three areas: internal; furnished by a parent organization; and other. While not reducible to statistical format, the data provides a general pattern for sources of training material. Sponsors with parent organizations use material provided by that organization, whether it is provided directly (as in the case of the Associated Builders and Contractors) or indirectly (as in the case of the Associated General Contractors). A second grouping indicates that the material is provided through an educational institution or organization, including private firms, school boards, an individual vocational school, or a community college. The third grouping contains those which utilize materials provided by manufacturers, materials that are self generated, or other sources. The information provided by the sponsors is tabulated in Appendix F.

Sources of Funding

The survey responses with respect to the sources of funding for the various programs revealed that funding comes from various, and at times, multiple sources. Funds flowing from the Florida Department of Education (FDE) are the most frequently mentioned source. Typically, this group of providers are the non-joint (non-union) organizations. The second largest grouping indicated that funding came primarily through contractors who, either in association or individually, were providing funds for the training. However, most organizations reported more than one source. Consequently joint providers (union) could report both contractor and union funds as well as funding through the FDE. It should be noted, however, that the responses for this portion of the survey were often incomplete both in source and in amount of the funds being utilized. The tabulated data are present in Appendix G. Much of the data are missing as this is apparently an area that sponsors, and the state agency responsible for the programs, are least willing to discuss.

Legislation that has been approved by the current legislature will significantly impact the manner of funding for those programs which are receiving state funds. The bill is a comprehensive revision of the state's funding mechanism for adult and vocational education.

All funding procedures for these programs are moved into a new Workforce Development Education Fund. The funding formula for the providers is based upon the cost of instruction, by program type, by length of program, and is in part contingent upon student completion and placement. A new division within the department of Education is created to administer the funds and the responsibilities for the programs that are not in the formula is transferred to the Division of Community Colleges and the Division of Public Schools. One pertinent definition is added: "occupational completion point" is defined as when the student should have acquired the required competencies to enter a related occupation. Payment of the full amount due for each student is contingent upon the student reaching this point.

The total impact of the bill ranges across the program of vocational and apprenticeship training. One effect of the bill will be to increase the number of vocational education choices open to the public since both community colleges and school boards will be able to offer competing courses. This will, of course, impact the non-educational institutions that also offer apprenticeship training. The total shift in funds to the new Workforce Development Education Funds is dramatic: approximately three quarters of a billion dollars in appropriations for each year are affected.

The drop out rate

A comparison of the number of apprentices completing the program in 1996 (392) to the number of apprentices currently enrolled (5,820), combined with the fact most of the apprenticeship programs are four years or less in duration, leads to the inescapable conclusion that a great many people currently registered will not complete the program. Of 5,820 people in a four year program, one would expect that approximately 25% or 1,455 could complete the program each year in an optimal situation. There will be some variation in this number caused by the fact that not all of the programs are four years in length. Since only 392 completed their program in 1996, it appears that only about 30% of the possible number will complete the program. The reciprocal of this statement is that approximately 70% will either drop out, fail, or simply fail to notify the F-BJT of their completion.

Navy's National Apprenticeship Program

The Navy's National Apprenticeship Program is one of the largest training programs reported by the survey respondents. The Navy's Education and Training Command in Pensacola (NETC), provided the following information:

- There are approximately 74,000 apprentices, working in 89 different trades, in locations across the world.
- There are approximately 7,000 apprentices worldwide in construction related field.
- There are 142 apprentices registered and working in construction related fields in Florida.

Pensacola, Jacksonville (Mayport), Key West, and Tampa have the largest concentrations of apprentices in Florida. The program is not limited to individuals in the Navy and includes all five armed services. However, the program is limited to active duty military personnel.

The Navy offers apprenticeship training in 89 of the trades out of the 835 apprenticeable occupations identified by the USDOL. Seven of these trades are clearly associated with the construction industry. They are shown in Table 6.

Table 6
Apprentice Training in the Armed Services
(Florida Portion)

Occupational Title	DOT Code	Hours Req..	Instruction Hours	Apprentices in Florida
Carpenter	860.381-022	8000	576	9
Cement Mason (construction)	844.364-010	6000	432	0
Electrician (construction)	824.261-010	8000	576	46
Pipe Fitter (construction)	862.281-022	8000	576	5
Refrigeration Mechanic (any ind)	637.261-026	8000	576	48
Sheet Metal Worker (any ind)	804.281-010	8000	576	4
Welder, Combination	819.384-010	8000	432	30
TOTAL				142

Personnel at the NETC indicated that the Navy does not track attrition rate, as such, since there are individuals that are discharged from the service before completion of the

training. Additionally, there is no effort made to determine whether or not the individuals are assigned to duties consistent with their training, or if those leaving the service continue in the trade. However, they indicated that it was their understanding that individuals released or discharged prior to completion of the training are normally given an hour-for-hour credit in civilian sponsored apprenticeship training programs.

These same personnel considered that the certificates granted by the state F-BJT were more valuable to individuals than those provided by the Navy. Their rationale was that there is no reciprocity between states, and that the Navy certificates are not generally recognized by local jurisdictions. This is despite the fact that the Navy programs are required to meet the same federal standards as the civilian programs. Similarly, when asked about the acceptability of the Navy training by various unions, the NETC personnel indicated that it was pretty much a matter of timing and the circumstances existing in the local economy. If there is a shortage of trained workers, the Navy training is welcomed. On the other hand, if there is a shortage of work for those already trained and waiting, then the Navy trained personnel are not welcome.

The total number of individuals enrolled in the Navy's training program in the State of Florida is only 2% of those enrolled in the civilian program. There are no data available showing that individuals either complete the training; having completed the training leave the military services; and having left the military services remain in the State. Consequently it does not appear that this very large apprenticeship training program can be made into a reliable source of trained personnel for the construction industry in the State of Florida . The Navy does maintain a family services operation to serve people about to separate or retire. Individual employers may list job openings with this family services operation as a way to attract some of the best possible journeymen.

Sources at NETC indicated that individuals separating from the Navy have difficulty in obtaining employment in their occupational field when they desire to remain in the same area as the larger military bases. Consequently contractors and construction firms that are outside of the local area of the bases and who are interested in this particular source of trained individuals may be able to access this pool of trained personnel providing they are willing to make arrangements for relocation costs.

The Need for Skilled labor

A 1995 study done at the University of Florida, proposed the hypothesis that the construction industry within the state is training an insufficient number of individuals to meet the industry's demand for skilled craft workers. The study concluded that the hypothesis was true and, in the words of the authors, "Objective evidence was presented confirming that the current levels of construction craft training are shamefully short of the needs of Florida's construction industry. Without significant increases in craft training levels, serious shortages of skilled craft workers will occur, and these shortages will adversely affect the industry."[14]

The University of Florida report was based, in part, on 1992 projections from the Florida Department of Labor and Employment Security, Bureau of Labor Market Information (BLMI) for construction industry employment.[15] The BLMI reported construction industry employment of 323,278 for the year 1990 and projected construction employment at 390,154 by the year 2005.

The study team obtained more recent data from the BLMI (June 1996) representing occupational employment as of 1994, and employment projections for the year 2005.[16] These latest projections are based on the assumptions that "...construction (in Florida) will be one of the slowest growing major industry divisions...due to a slow down in population growth and the decline of household formations." The Bureau noted that specialty trade contractors, i.e. "...plumbers, electricians, roofers, etc..." will account for over three fourths of new construction job openings in the state due to the trend from in-house work done by general contractors to subcontracting for all but the management of projects. Table 7 presents the projections for total construction employment in the state, and provides a breakdown by three categories.

The difference in the level of construction employment reported in 1990 and 1994 is dramatic; actual construction employment in 1990 was 323,278 while actual construction employment in 1994 was 295,834 -- a decline of 27,444 jobs over the four year period! The 1992 projections for the year 2005 also differ significantly from the 1996 projections: 390,154 versus 330,952, respectively.

Table 7
State of Florida Construction Industry Employment
1994 Average and 2005 Projected[17]

Construction Employment	1994	2005	CHANGE	PER CENT CHANGE
Total Construction Employment	295,834	330,952	35,118	11.87
General Building Contractors	67,129	71,443	4,314	6.43
Other General Contractors	39,813	44,124	4,311	10.83
Specialty Trade Contractors	188,892	215,385	26,493	14.03

Succinctly, the demand for construction workers, predicted by the employment projection data, has changed significantly from 1994, when the University of Florida study was undertaken. In 1994 it appeared that there would be significant growth and the attendant demand for construction training. That picture has apparently changed significantly. A more recent work, which dealt only peripherally with the matter, concluded that evidence of a future shortfall in trained construction labor has not been fully identified.[18]

The BLMI also produces employment reports and projections for *occupations*, many of which are substantially similar to the apprenticeable occupations for which apprenticeship training is provided in the State of Florida. While not a specific requirement of this study, the information is especially interesting and useful as compared to the actual numbers of apprentices being trained. Table 8, on the following page, presents the occupational projections from the BLMI for the construction related trades.

The University of Florida study reported that approximately 11,934 individuals would need to be trained to fill occupational vacancies created by growth plus separations from employment.[19] However, the data presented in Table 8 from the 1996 BLMI projection indicate approximately 6,189 individuals will be needed. This is slightly more that one half of the need projected by the UF team.

Despite the reduction by nearly 50% in the predicted annual increase in construction workers required, the tabulated total of approximately 6,000 additional workers, annually, would not appear to bode well for the industry when compared to the number of apprenticeship graduates reported earlier. If one uses only electricians, plumbers, and air

conditioning workers, which are trades currently covered by most of those jurisdictions having journeyman requirements, the average annual increase in trained workers decreases to 2,586. Using a ratio of journeymen to untrained of 25% (one journeyman for every three non-journeymen) the average training requirement in these fields is approximately 650

Table 8

Occupational Employment Estimates
State of Florida Construction Related Trades[20]

Occupation (BLMI)	Corresponding Occupation (USDOL)	1994	2005	Total Increase	Due to Growth 1	Due to Separation 1	Average Annual Increase 1
Brick Mason	Bricklayer (const)	5,257	5,832	575	52	87	139
Carpenter	Carpenter	43,387	49,280	5,893	536	785	1,321
Concrete & Terrazzo Finisher	Cement Mason	11,241	13,149	1,908	173	182	355
Drywall Installer	Dry-Wall Applicator	4,004	4,186	182	17	102	119
Electrician	Electrician	29,452	35,032	5,580	507	654	1,161
Painter & Paper Hanger	Painter/ Paper Hanger	25,129	29,888	4,759	433	533	966
Plumber, Pipefitter, Steamfitter	Pipefitter (const)	17,627	19,963	2,336	212	319	531
Plasterer	Plasterer	3,275	3,547	272	25	70	95
Included above	Plumber						
Roofer	Roofer	9,733	10,529	796	72	199	271
Sheet Metal Duct Installer	Sheet Metal Worker	2,261	2,554	293	27	49	76
Hard Tile Setter	Tile Setter	2,821	2,864	43	4	61	65
Heating, A/C, Refrig. Mechanic	Heating & Air-Cond Inst-Ser	18,697	23,875	5,178	471	423	894
Included above	Refrigeration Mechanic(any ind)						
Structural Metal Worker	Structural-Steel Worker	771	859	88	8	15	23
Insulation Worker	Insulation Worker	4,168	4,743	575	52	121	173
Included above?	Tile Finisher						
TOTALS		177,823	206,301	28,478	2,589	3,600	6,189

individuals, annually. In the latest year reported in Appendix D, there were 3,044 individuals in training programs for these trades and 353 completions. The study team realizes the limitations of crude manipulations of data and that certificates granted or completions reported are not complete statistics for the number of journeymen joining the labor force in a particular year. Still, the following generalizations can be made:

1. the current rate of training of journeymen in the State of Florida is insufficient to meet the needs of the industry;

2. the rate of completion of training, as compared to the number enrolled, is woefully inadequate and should be the subject of additional study.

'Suspected' Construction Apprenticeship Trainers.

One of the principle purposes of this study was to 'catalogue' the apprenticeship training programs in the State of Florida. However, the study can only report on the information which the survey team was able to obtain. There were 59 organizations identified by the F-BJT as providing apprenticeship training that did not respond to the survey requests. These organizations have been labeled as 'suspected' construction apprenticeship program sponsors because the survey team was not able to confirm through the survey instrument, and repeated mailings and requests for information, that they provide training in construction related fields. As noted earlier, some of these organizations may have branch organizations located at more than one physical address. In such cases, it is entirely possible that a unified response was received for the state organization and data from the non-responding branches may actually be included. In other cases, as also reported earlier, these organizations may not be engaged in construction related apprenticeship training or may have ceased to function. The "non-responding suspected" construction apprenticeship program sponsors are identified in Appendix H.

IV. Findings, Conclusions and Recommendations

The nature of the tasking and the work undertaken for this report do not lend themselves well to the normal "findings, conclusions, and recommendations" associated with the more traditional research type of work done for the study sponsors. Despite the obvious limitations that have been enunciated in the report, there are specific items that need to be addressed.

1. Training organizations

There are approximately 135 organizations in the State of Florida that are registered with the state as approved for construction related apprenticeship training. Neither the study team nor the state agency charged with tracking of apprenticeship training is able to state, with certainty, the exact number. In fairness, the number is not constant as providers enter and leave the field. Consequently any compilation made on a given date could be outdated a month later.

2. Value of formalized apprenticeship training

Approximately 60% of the counties in the state issue licenses for journeymen in construction related trades. Half of these require a specific ratio of journeymen to lesser trained individuals on construction sites. While this latter requirement has been has been held to be contrary to state law in the case of certified contractors, and may be removed entirely by legislation, it is an indication that local jurisdictions are cognizant of construction industry problems with supervision, quality, and safety. Restrictions in personnel employment policies, whether through governmental intervention or overall industry behavior, can only enhance the value of formalized apprenticeship training.

3. Certification of individual completing apprenticeship programs

The state's Department of Labor provides a certificate to individuals completing an apprenticeship training course with an organization that is registered with the Department. The certificate neither recognizes that the individual meets the definition of a journeyman in the field, and is not necessarily recognized by local jurisdictions requiring the licensing of

journeymen as a sufficient accomplishment for licensing. Similar to current state law concerning the certification and registration of contractors, the value of the certificate would be immeasurably enhanced if local jurisdictions were required to accept it as a sufficient condition for licensing.

4. Enrollment and completion

The data collected during the study indicate that approximately 70% of those individuals that start formalized construction related apprenticeship training fail to complete the work /study that is required. No data were obtained that provided an insight into the causes of non-completion or the average length of time that non-completing individuals leaving the program have spent in the program. Previously reported data indicated that the cost per completion in 1994 was approximately $19,000 for each individual, based upon a completion rate nearly double that which currently exists. The high cost and low completion rate merit further study.

5. Commonality of training

Interviews with providers of construction related apprenticeship training and with knowledgeable members of the construction profession indicate that there is a common core of knowledge that is required of all individuals completing such training, such as elementary blue print reading and construction mathematics. It may be cost effective to establish regional training centers for these fundamental skills rather than each provider setting up training and facilities for these subjects. Successful completion of programs that emphasized these basic skills may also provide a screening to ensure higher completion rates in the remainder of the apprenticeship training programs.

6. Oversight agencies

The apparent reluctance or inability of the Apprenticeship Section of the Bureau of Job Training , referred to in the report as F-BJT, raises questions as to their purpose and ability to maintain oversight in this area. At the least, it appears that the mission statement and the 'raisone d'etre' should be evaluated. Relevant performance measures should be

developed and tracked to determine if the Bureau is fulfilling that mission and serving the best interests of the public.

END NOTES

[1] FS (1995) 446.021.

[2] "Recommended Changes to the Existing Vocational/Continuing Education Programs for the Building Trades", School of Building Construction, University of Florida, Paul Oppenheim, Ph.D., P.E. and Thomas H. George, Ph. D., 1994, p. 1-1.

[3] ibid., p. 5-3.

[4] National Apprenticeship Act of 1937 (29 U.S.C. 50) Section 29.1.

[5] From a Fact Sheet by the US Department of Labor, Employment and Training Administration on the Internet.

[6] FS (1995) 446.011(3).

[7] FS (1995) 446.011(4).

[8] FS (1995) 446.045.

[9] op. cit., Oppenheim & George, p. 1-14.

[10] "Officially Recognized Apprenticeable Occupations List" (April, 1996). Bureau of Apprenticeship and Training, U. S. Department of Labor.

[11] "Jurisdictional Control Over Statewide Contractors." (1966). Staff Report of the Florida House of Representatives Committee on Regulatory Reform.

[12] "Report of Construction Industry Study Committee," p. 5, (undated). State of Florida Department of Business and Professional Regulation; Northwood Centre, 1940 N Monroe Street, Tallahassee, FL 32399-0750.

[13] op. cit., Oppenheim & George, p. 2-2.

[14] op. cit., Oppenheim & George, p. 5-16.

[15] Florida Department of Labor and Employment Security, Bureau of Labor Market Information (October 1992). Florida Industry and Occupational Employment Projections: 1990-2005.

[16] "Florida Industry and Occupational Projections: 1994-2005." (June 1996). Florida Department of Labor, Bureau of Labor Market Information, Suite 200, Hartman Building, 2012 Capital Circle, SE, Tallahassee, FL 32399-2151.

[17] "A Study of the Need for a Journeyman on Small Construction Projects." Department of Construction Management, Florida International University, J. M. Dye & W. C. Stroop, 1996. p. 11.

[18] ibid., p. 41

[19] op. cit., Oppenheim & George, p. 1-21.

[20] Data furnished by Bureau of Labor Market Information Florida Department of Labor and Employment Security, on October 29, 1996.

Apprenticeship Survey

This survey is being conducted by the Department of Construction Management, Florida International University for the Building Construction Industry Advisory Committee, Department of Education, State of Florida. Your participation is essential to obtaining meaningful results. Please complete the survey and return in the self addressed stamped envelope at your earliest convenience. Thank you for your assistance. *Note: if more space is required to complete any response, please add an additional sheet.*

Name of Organization:	
Contact person:	
Street address:	
City, State, Zip:	
Phone number:	
Fax number:	
e-mail:	

1. Does your organization train apprentices? _____Yes > Please continue; _____No > Please stop and return the survey.

2. Is the apprenticeship training offered by your organization in a construction related field? _____Yes > Please continue; _____No > Please stop and return the survey.

3. Is your program best described as group or individual, joint or non-joint? ("Joint employee organization" means an apprenticeship sponsor who participates in a collective bargaining agreement and represents employees. Non-joint employer organization means an apprenticeship sponsor who does not participate in a collective bargaining agreement and who represents management." Florida Statutes section 446.045)

Check the best selection	**Types**	**Description of Types**
	GJ	Group joint
	GNJ	Group non-joint
	IJ	Individual joint
	INJ	Individual non-joint
	JAC	Joint Apprenticeship Council
	JATC	Joint Apprenticeship Training Committee

4. What types of apprentices do your organization train?

DOT code* (if known)	**Occupational Title**	**What occupation(s) will the graduate be trained to pursue?**

* The DOT code is from the Officially Recognized Apprenticeable Occupations list as published by the US Department of Labor, Bureau of Apprenticeship and Training. The Occupational Title is the descriptor assigned to that code.

5. For each type of apprenticeship shown in Question 4, please describe the requirements for enrollment.

Occupational Title	Education Required	Employment Required	Agreement (indenture)	Program caps (Maximum enrolled)	Other

6. Is your program registered with the Bureau of Job Training, Florida Department of Labor and Employment Security?
_____Yes _____No

7. For each type of apprenticeship, please describe the requirements for graduation or certification.

Occupational Title	Years of required on-the-job training (OJT)	Hours of class work per year	Other requirements for graduation or certification

8. What is the source of your curriculum? Examples of sources include training material developed and created by your organization, training material from a parent organization, or training material from another organization (please specify).

	Source of curriculum (please check or specify)		
Occupational Title	Internal source	Parent organization	Other organization (please specify)

9. Please tell us about your apprentices.

Occupational Title	Number of Apprentices in your program	Number of Apprentices completing or graduating from the program in			Number of Apprentices receiving certificates from Bureau of Job Training (State of Florida) for 1996
		1996 (est.)	1995	1994	

10. What are the sources of funding for your programs? Please identify all significant sources of funding. Examples of funding sources would be Job Training Partnership Act, Industrial Cooperative Education dollars, Florida Department of Education, the local school system, another public agency, fees from the apprentice, dues from an associated union, or contributions from a trade association. Examples of how the amount of funding is determined would include fee amount set by management, percentage of wages or FTE's.

Questions	Primary Funding	Second Funding	Other Funding
Name and address of entity providing funding			
Description of entity providing funding			
How is the amount of funding determined?			
What percentage of your budget comes form this source?			

11. Are there significant sources of funding other than those identified above? _____Yes _____No

12. What is your most recent annual budget for your apprenticeship program(s)? $_____

The information you have provided will be made a part of a comprehensive study of the present status of construction apprenticeship programs in Florida. Your response is critically important to the study. Thank you very much for the time and effort you have contributed to completing this survey!

Construction Apprenticeship Program Sponsors

Appendix B

(As reported by Program Sponsor in response to Apprenticeship Survey.)

Org Name	Address	City State Zip	Phone	Fax
Acousti Engineering Company of Florida	4656 34th Street Southwest	OrlandoFL 32811	407-425-3467	407-422-6502
Air Conditioning Contractors Association of Central Florida	P.O. Box 180458	Casselberry FL 32718-0458	407-260-2206	407-260-5732
Air Conditioning, Refrigeration & Pipefitting Education Committee (Dade)	13201 Northwest 45th Avenue	Miami FL 33054	305-685-0311	305-685-1169
Apprenticeship Council of Trades, Inc.	2520 D Davis Blvd	Naples FL 34104-4361	941-417-2233	941-417-2234
Arizona Chemical Apprenticeship Program	P.O. Box 947	Port St. Joe FL 32456	904-229-8271	904-229-8519
Armstrong Elevator Company	1509 49th Street South	Gulfport FL 33707	813-323-3800	813-323-1406
Associated General Contractors - South Florida Chapter	P.O. Box 848120	Pembroke Pines FL 33084	954-438-3701	954-438-2895
Brevard Electrical Apprenticeship Training Program	700 N. Wickham Road Suite 108	Melbourne FL 32935	407-254-0492	407-254-0492
Carpenters Union Local 1641	3427 Enterprise Avenue	Naples FL 34104	941-643-3300	
Central Florida Building Maintenance Apprenticeship Committe	6375 West Irlo Bronson Memorial Highway	Kissimmee FL 34747	407-396-1234 X 54	407-396-5019
Central Florida Chapter ABC Incorporated	450 North Wymore Road	Winter Park FL 32789-2803	407-628-2070	407-629-0144
Central Florida Heat & Frost Insulators & Asbestos Workers	7930 U.S. 301 North	Tampa FL 33637	813-980-6646	813-985-9702
Central Florida Operating Engineers	4510 North Orange Blossom Trail	Orlando FL 32804	407-291-2210	407-291-3215
Choctawhatchee Electric Coop (Chelco)	700 West Baldwin Avenue P.O. Box 512	DeFuniak Springs FL 32435	904-892-2111	904-892-9560
City of Leesburg Electric Utility	2010 West Griffin Road	Leesburg FL 34748	352-728-9834	352-365-1927
City of New Smyrna Beach Utilities Commission	350 Slatton Street - P.O. Box 100	New Smyrna Beach, FL 32170-0	904-423-7133	904-423-7103
City of Orlando	400 South Orange Avenue	Orlando FL 32801	407-246-2579	407-246-2019
City of St. Petersburg Dept of Public Utilities	1635 3rd Avenue North	St. Petersburg FL 33713	813-893-7261	813-823-9152
City of St. Petersburg Public Utilities	1635 3rd Ave North	St. Petersburg, FL 33713	813-892-5632	813-823-9152
Cox Fire Protection Inc	2801 North 36th Street	Tampa Fl 33605	813-247-4777	813-247-5180
Dade and Monroe County Roofers	4349 Northwest 36th Street Suite 101	Miami Springs FL 33166	305-885-9759	305-884-1745
Daytona Beach Electrical JATC	5901 Airport Road	Daytona Beach FL 32124	904-756-2776	904-756-2785

Appendix B (As reported by Program Sponsor in response to Apprenticeship Survey.)

Org Name	Address	City State Zip	Phone	Fax
Daytona Beach Plumbers & Pipefitters Local 295	743 North Beach Street	Daytona Beach FL 32114	800-373-1784	904-252-7171
Electrical Council of Florida Edison Chapter	856 S. Town & River Dr.	Fort Myers FL 33919	941-481-3777	941-481-3359
F. A. E. C. Tri-County Apprenticeship Program	P.O. Box 1523	Ocala FL 32678	352-732-2638	352-732-2638
Flagler District Schools Adult & Community Education	200 Lehigh Road	Flagler Beach FL 32136	904-517-2040	904-517-2044
Florida Association of Electrical Contractors Osceola County Apprentice	P.O. Box 180458	Casselberry FL 32718-0458	407-344-5080	407-344-5089
Florida Association of Plumbing Heating & Cooling Contractors	300 NW 25th Street	Wilton Manors, FL 33311	954-565-3372	954-568-1766
Florida East Coast Chapter AGC of America Incorporated	2617 N. Australian Avenue	West Palm Beach FL 33407	561-833-3609	561-833-6024
Florida East Coast Electrical J.A.T.C.	4620 Summit Boulevard - P.O. Box 15003	West Palm Beach FL 33415	561-968-4400	561-968-1390
Florida First Coast Chapter of the Associated Builders & Contracters Inc.	5944 Richard Street	Jacksonville FL 32216	904-731-1506	904-731-1507
Florida Gulf Coast Chapter ABC Incorporated	P.O. Box 152107	Tampa FL 33684	813-879-8064	813-876-1970
Florida Plumbing/ Electrical Apprenticeship Association Inc.	2525 Old Okeechobee Road Suite 9	West Palm Beach FL 33409	561-697-2215	561-697-9067
Florida Space Coast Chapter ABC	1900 South Harbor City Blvd, Ste 320	Melbourne FL 32901	407-725-6617	407-725-2220
Florida West Coast Carpenters	7930 U.S. 301 North	Tampa FL 33637	813-988-3997	813-985-9702
Florida West Coast Sheet Metal JATC	5619 North 50th Street	Tampa FL 33610	813-623-5074	813-628-0222
Florida West Coast Trowel Trades	4502 West Dr. Martin Luther King Jr. Blvd	Tampa FL 33614	813-879-2521	813-876-4738
Housing Authority of the City of Fort Lauderdale	437 SW 4th Avenue	Fort Lauderdale FL 33315	954-525-6444	954-764-4604
Independent Electrical Contractors Florida West Coast Chapter (Iec Fwc	9500 Koger Boulevard Suite 103	St. Petersburg FL 33702	813-577-3064	813-576-8482
International Union of Operating Engineers (North Florida)	8366 Devoe Street	Jacksonville FL 32202	904-783-6181	
Jacksonville Heat & Frost Insulators & Asbestos Workers JAC	3647 Gilmore Street	Jacksonville FL 32205	904-388-1601	
Lake County H.A.R.V. Association	2001 Kurt Street	Eustis FL 32726	352-742-6486 x 202	352-357-1428
Masonry Association of Florida Inc.	2064 Apricot Drive	Deltona FL 32725	904-789-0670	904-789-2899
Mid-Florida Electrical Apprenticeship & Training Cmte	P.O. Box 292012	Port Orange FL 32129	904-255-0742	904-788-3142
North Florida Chapter ABC Inc.	1604 Sauls St	Tallahassee FL 32308	904-562-8200	904-562-1838

Appendix B (As reported by Program Sponsor in response to Apprenticeship Survey.)

Org Name	Address	City State Zip	Phone	Fax
Northeast Florida Builders Assoc.	P.O. Box 17339	Jacksonville FL 32245	904-725-4355 X 23	904-721-3372
Ocala Electric Utility - City of Ocala	P.O. Box 1270	Ocala FL 32670	352-351-6600	352-351-8263
Okaloosa-Walton Apprenticeship Committee	P.O. Box 1141	Crestview FL 32536	904-652-4542	
Orange County - Roads And Drainage Department	4200 South John Young Parkway	Orlando FL 32839-9205	407-836-7873	407-836-7839
Palm Beach County Carpenters	1000 Oklawaha Avenue	West Palm Beach FL 33409	561-689-2257	561-687-7984
Palm Beach County Ironworkers	1001 West 15th Street	West Palm Beach FL 33404	561-842-6254	561-842-7652
Palm Beach County Plumbing A/C & Pipefitting	1800 Longwood Road	West Palm Beach FL 33409	561-686-4233	561-683-3198
Pate Electric	2336 Industrial Drive	Panama City FL 32405-6038	904-763-1066	904-769-7082
Peace River Electrical Apprenticeship And Training Program	3225 Winter Lake Road	Lakeland FL 33803-9709	941-499-2700 x247	941-499-2706
Pensacola Electrical Apprenticeship Comittee	201 South "F" Street	Pensacola FL 32501	904-433-5391	904-433-3059
Pinellas Mechanical Pipe Trades	7840-40th Street North	Pinellas Park FL 33781	813-544-9437	813-545-3363
Plumbers Local 519 (Dade)	14105 NW 58th Court	Miami FL 33014	305-822-9411	305-826-9792
Plumbers Pipefitter & Refrigeration Local 592 JATC	1819 West Tennessee Street	Tallahassee FL 32304	904-222-2818	904-222-9019
Roofers Local 181 (Jacksonville)	4000 Union Hall Place	Jacksonville FL 32205	904-384-7692	904-387-4473
Selcat Inc.	4040 W. Newberry Rd Ste 1000	Gainesville FL 32607	770-964-1042	770-964-1069
South Florida Millwrights & Piledrivers Divers	2727 South Park Road	Hallandale Beach FL 33009	954-981-1810	954-962-8505
South Florida Trowel Trades	3127 W Hallandale Beach Blvd, Ste 101	Pembroke Park FL 33009	954-985-3807	954-985-3809
Southeast Enterprise Group Inc.	8431 New Kings Road	Jacksonville FL 32219	904-765-4660	904-768-5616
Suncoast Fire Sprinkler Co.	P.O. Box 2280	Pinellas Park FL 34664-2280	813-573-1556	813-572-7266
Tallahassee Electrical Contractors Association	1604 Sauls St	Tallahassee FL 32308	904-562-8200	904-562-1838
Tampa Area Electrical JATC	5625 Harney Road	Tampa FL 33610	813-621-3002	813-628-0278
Tampa Area Pipe Trades	3601 North McIntosh Road	Dover FL 33527	813-659-2184	813-659-2450
Tampa Millwrights	9711 East Hillsborough Avenue	Tampa FL 33610	813-626-1119	813-621-4782

Appendix B (As reported by Program Sponsor in response to Apprenticeship Survey.)

Org Name	Address	City State Zip	Phone	Fax
Tampa Operating Engineers	10201 E. Hillsborough Ave - P.O. Box 398	Mango FL 33550	813-626-4161	813-623-1381
Tri-County PHCC Association	P.O. Box 7142	Fort Myers FL 33911	941-728-2888	941-728-3156
United Service Training Corp	300 NW 25th Street	Wilton Manors FL 33311	954-565-3372	954-568-1766
University of Florida, Physical Plant	PO Box 117725	Gainesville FL 32611	352-392-1146	352-392-8701
US Navy National Apprenticeship Program	CNET NNAP N23/0843 250 Dallas Street	Pensacola FL 32508-5220	904-452-4940 x 307	904-452-4954
West Palm Beach Painters JATC	1213 Omar Road	West Palm Beach FL 33405	561-833-6812	561-832-7442
West Palm Beach Sheet Metal JATC	1003 Belvedere Road Room 5	West Palm Beach FL 33405	561-659-6093	561-566-2872
Withlacoochee River Electric Cooperative Inc.	14651 21st Street - P.O. Box 278	Dade City FL 33525	352-567-5133x6301	352-521-5971

Group or individual, joint or non-joint

Appendix C

Org Name	Type (BJT)	Type (response)
Acousti Engineering Company of Florida	INJ	INJ
Air Conditioning Contractors Association of Central Flo	GNJ	GNJ
Air Conditioning, Refrigeration & Pipefitting Education	JAC	JATC
Apprenticeship Council of Trades, Inc.	GNJ	GNJ
Arizona Chemical Apprenticeship Program	IJ	JAC
Armstrong Elevator Company	INJ	INJ
Associated General Contractors - South Florida Chapter	GNJ	GNJ
Brevard Electrical Apprenticeship Training Program	GNJ	GNJ
Carpenters Union Local 1641	JAC	JAC
Central Florida Building Maintenance Apprenticeship C	GNJ	GNJ
Central Florida Chapter ABC Incorporated	GNJ	GNJ
Central Florida Heat & Frost Insulators & Asbestos Wor	JAC	IJ
Central Florida Operating Engineers	JAC	JATC
Choctawhatchee Electric Coop (Chelco)	INJ	JATC
City of Leesburg Electric Utility	INJ	IJ
City of New Smyrna Beach Utilities Commission	INJ	INJ
City of Orlando	IJ	JATC

Org Name	Type (BJT)	Type (response)
City of St. Petersburg Dept of Public Utilities	INJ	INJ
City of St. Petersburg Public Utilities	INJ	INJ
Cox Fire Protection Inc	INJ	INJ
Dade and Monroe County Roofers	JAC	JAC
Daytona Beach Electrical JATC	JAC	JATC
Daytona Beach Plumbers & Pipefitters Local 295	JATC	JATC
Electrical Council of Florida Edison Chapter	GNJ	GNJ
F. A. E. C. Tri-County Apprenticeship Program	GNJ	GNJ
Flagler District Schools Adult & Community Education	GNJ	GNJ
Florida Association of Electrical Contractors Osceola Co	GNJ	GNJ
Florida Association of Plumbing Heating & Cooling Co	GNJ	GNJ
Florida East Coast Chapter AGC of America Incorporate	GNJ	GNJ
Florida East Coast Electrical J.A.T.C.	JATC	JATC
Florida First Coast Chapter of the Associated Builders &	GNJ	GNJ
Florida Gulf Coast Chapter ABC Incorporated	GNJ	GNJ
Florida Plumbing/ Electrical Apprenticeship Association	GNJ	GNJ
Florida Space Coast Chapter ABC	GNJ	GNJ
Florida West Coast Carpenters	JAC	JATC
Florida West Coast Sheet Metal JATC	JAC	JATC

Org Name	Type (BJT)	Type (response)
Florida West Coast Trowel Trades	JAC	JAC
Housing Authority of the City of Fort Lauderdale	INJ	INJ
Independent Electrical Contractors Florida West Coast C	GNJ	GNJ
International Union of Operating Engineers (North Flori	JAC	JATC
Jacksonville Heat & Frost Insulators & Asbestos Worker	JAC	JATC
Lake County H.A.R.V. Association	GNJ	GNJ
Masonry Association of Florida Inc.	GNJ	GNJ
Mid-Florida Electrical Apprenticeship & Training Cmte	GNJ	GNJ
North Florida Chapter ABC Inc.	GNJ	GNJ
Northeast Florida Builders Assoc.	GNJ	GNJ
Ocala Electric Utility - City of Ocala	INJ	INJ
Okaloosa-Walton Apprenticeship Committee	GNJ	GNJ
Orange County - Roads And Drainage Department	IJ	JAC
Palm Beach County Carpenters	JAC	JATC
Palm Beach County Ironworkers	JAC	JAC
Palm Beach County Plumbing A/C & Pipefitting	JAC	JATC
Pate Electric	INJ	INJ
Peace River Electrical Apprenticeship And Training Pro	GNJ	GNJ
Pensacola Electrical Apprenticeship Comittee	GNJ	GNJ

Org Name	Type (BJT)	Type (response)
Pinellas Mechanical Pipe Trades	JAC	JATC
Plumbers Local 519 (Dade)	JAC	JATC
Plumbers Pipefitter & Refrigeration Local 592 JATC	JATC	JATC
Roofers Local 181 (Jacksonville)	JAC	JATC
Selcat Inc.	JATC	JATC
South Florida Millwrights & Piledrivers Divers	JAC	JAC
South Florida Trowel Trades	JAC	GJ
Southeast Enterprise Group Inc.	INJ	INJ
Suncoast Fire Sprinkler Co.	INJ	GNJ
Tallahassee Electrical Contractors Association	GNJ	GNJ
Tampa Area Electrical JATC	JAC	JATC
Tampa Area Pipe Trades	JAC	JATC
Tampa Millwrights	JAC	JAC
Tampa Operating Engineers	JAC	JAC
Tri-County PHCC Association	GNJ	GNJ
United Service Training Corp	GNJ	GNJ
University of Florida, Physical Plant	IJW	GNJ
US Navy National Apprenticeship Program	INJ	INJ
West Palm Beach Painters JATC	JAC	GJ

Org Name	Type (BJT)	Type (response)
West Palm Beach Sheet Metal JATC	JAC	GJ
Withlacoochee River Electric Cooperative Inc.	INJ	INJ

Number of Registered Apprentices and Completions

Appendix D **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	No in program	1996 grad	1995 grad	1994 grad	1996 BJT certificates
Acousti Engineering Company of Florida	Acoustical Carpenter	33	0	0	0	0
University of Florida, Physical Plant	Boiler operator	0	0	0	0	0
Florida West Coast Trowel Trades	Bricklayer (const)	23	3	0	5	3
Masonry Association of Florida Inc.	Bricklayer (const)	100	5	0	0	0
North Florida Chapter ABC Inc.	Bricklayer (const)	5	0	0	0	0
South Florida Trowel Trades	Bricklayer (const)	25	2	0	0	2
Apprenticeship Council of Trades, Inc.	Carpenter	12	5	1	0	1
Associated General Contractors - South Florida Chapte	Carpenter	36	7	6	7	0
Carpenters Union Local 1641	Carpenter	4	1	1	1	1
Central Florida Chapter ABC Incorporated	Carpenter	14	1	7	0	1
City of Orlando	Carpenter	1	1	1	0	2
Flagler District Schools Adult & Community Educatio	Carpenter	3	0	0	2	0
Florida East Coast Chapter AGC of America Incorpora	Carpenter	20	0	0	0	0
Florida First Coast Chapter of the Associated Builders	Carpenter	18	0	0	0	0
Florida Gulf Coast Chapter ABC Incorporated	Carpenter	29	0	1	3	0
Florida West Coast Carpenters	Carpenter	15	5	4	2	5
North Florida Chapter ABC Inc.	Carpenter	5	0	0	0	0
Northeast Florida Builders Assoc.	Carpenter	17	3	2	3	3

Appendix D **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	No in program	1996 grad	1995 grad	1994 grad	1996 BJT certificates
Palm Beach County Carpenters	Carpenter	40	1	0	2	0
US Navy National Apprenticeship Program	Carpenter	9	0	0	0	0
University of Florida, Physical Plant	Carpenter, maintenance	0	0	0	0	0
South Florida Millwrights & Piledrivers Divers	Carpenter, Pile driver	12	2	4	4	2
US Navy National Apprenticeship Program	Cement Mason	0	0	0	0	0
Ocala Electric Utility - City of Ocala	Electric Meter Repairer	1	0	0	0	0
Withlacoochee River Electric Cooperative Inc.	Electric Meter Repairer	0	0	0	0	0
Apprenticeship Council of Trades, Inc.	Electrician	98	10	7	0	0
Brevard Electrical Apprenticeship Training Program	Electrician	80	8	7	8	
Daytona Beach Electrical JATC	Electrician	54	11	3	10	11
Electrical Council of Florida Edison Chapter	Electrician	60	12	10	10	12
F. A. E. C. Tri-County Apprenticeship Program	Electrician	21	0	0	0	0
Flagler District Schools Adult & Community Educatio	Electrician	62	12	5	10	12
Florida Association of Electrical Contractors Osceola	Electrician	48	0	0	0	0
Florida East Coast Chapter AGC of America Incorpora	Electrician	150	0	0	0	0
Florida East Coast Electrical J.A.T.C.	Electrician	142	13	24	3	24
Florida First Coast Chapter of the Associated Builders	Electrician	12	0	0	0	0
Florida Gulf Coast Chapter ABC Incorporated	Electrician	233	15	12	19	15
Florida Plumbing/ Electrical Apprenticeship Associati	Electrician	82	0	0	0	0
Florida Space Coast Chapter ABC	Electrician	0	0	0	0	0

Appendix D **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	No in program	1996 grad	1995 grad	1994 grad	1996 BJT certificates
Independent Electrical Contractors Florida West Coast	Electrician	70	14	10	13	11
Mid-Florida Electrical Apprenticeship & Training Cm	Electrician	43	7	5	7	7
Northeast Florida Builders Assoc.	Electrician	97	18	26	35	18
Okaloosa-Walton Apprenticeship Committee	Electrician	23	3	2	1	3
Pate Electric	Electrician	3	0	0	0	0
Peace River Electrical Apprenticeship And Training Pr	Electrician	34	0	0	0	0
Pensacola Electrical Apprenticeship Comittee	Electrician	112	5	5	10	5
Tallahassee Electrical Contractors Association	Electrician	19	0	0	0	0
Tampa Area Electrical JATC	Electrician	150	22	15	17	22
US Navy National Apprenticeship Program	Electrician	46	2	3	0	2
University of Florida, Physical Plant	Electrician, maintenance	0	0	0	0	0
Withlacoochee River Electric Cooperative Inc.	Electrician, maintenance	0	0	0	2	0
Ocala Electric Utility - City of Ocala	Electrician, substation	2	1	1	1	1
Withlacoochee River Electric Cooperative Inc.	Electrician, substation	0	0	0	1	0
Armstrong Elevator Company	Elevator constructor	6	0	0	0	0
Air Conditioning Contractors Association of Central Fl	Heating & Air-Cond Inst-Serv	65	16	12	13	16
Apprenticeship Council of Trades, Inc.	Heating & Air-Cond Inst-Serv	43	7	6	0	0
Flagler District Schools Adult & Community Educatio	Heating & Air-Cond Inst-Serv	19	0	0	0	0
Florida East Coast Chapter AGC of America Incorpora	Heating & Air-Cond Inst-Serv	70	0	0	0	0
Florida Gulf Coast Chapter ABC Incorporated	Heating & Air-Cond Inst-Serv	12	0	6	7	0

Appendix D **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	No in program	1996 grad	1995 grad	1994 grad	1996 BJT certificates
Lake County H.A.R.V. Association	Heating & Air-Cond Inst-Serv	1	0	0	0	0
North Florida Chapter ABC Inc.	Heating & Air-Cond Inst-Serv	8	0	0	0	0
Northeast Florida Builders Assoc.	Heating & Air-Cond Inst-Serv	56	12	9	18	12
Palm Beach County Plumbing A/C & Pipefitting	Heating & Air-Cond Inst-Serv	30	0	3	1	0
Pinellas Mechanical Pipe Trades	Heating & Air-Cond Inst-Serv	8	1	3	3	1
Tri-County PHCC Association	Heating & Air-Cond Inst-Serv	52	9	9	10	9
Central Florida Heat & Frost Insulators & Asbestos W	Insulation Worker	30	3	4	2	3
Jacksonville Heat & Frost Insulators & Asbestos Work	Insulation Worker	16	4	0	3	4
City of Leesburg Electric Utility	Line erector	4	0	0	0	0
Ocala Electric Utility - City of Ocala	Line erector	6	1	1	2	1
Withlacoochee River Electric Cooperative Inc.	Line erector	10	4	0	5	4
City of New Smyrna Beach Utilities Commission	Line Maintainer	3	1	1	0	1
Choctawhatchee Electric Coop (Chelco)	Line Repairer	6	0	2	2	0
Selcat Inc.	Line Repairer	123	26	32	33	0
University of Florida, Physical Plant	Maintenance mechanic (any ind)	0	0	0	0	1
University of Florida, Physical Plant	Maintenance mechanic (any ind)	0	0	0	1	1
University of Florida, Physical Plant	Maintenance mechanic, telepho	0	0	0	0	0
Central Florida Building Maintenance Apprenticeship	Maintenance Repairer, Build	0	0	0	0	0
Housing Authority of the City of Fort Lauderdale	Maintenance Repairer, Build	30	0	0	0	0
South Florida Millwrights & Piledrivers Divers	Millwright	12	4	4	4	4

Appendix D **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	No in program	1996 grad	1995 grad	1994 grad	1996 BJT certificates
Tampa Millwrights	Millwright	27	3	5	2	3
Central Florida Operating Engineers	Operating Engineer	34	2	2	1	2
Flagler District Schools Adult & Community Educatio	Operating Engineer	1	1	2	0	1
International Union of Operating Engineers (North Flo	Operating Engineer	20	0	4	4	0
Orange County - Roads And Drainage Department	Operating Engineer	13	0	0	0	0
Tampa Operating Engineers	Operating Engineer	14	3	5	2	3
Florida First Coast Chapter of the Associated Builders	Painter (const)	15	0	0	0	0
University of Florida, Physical Plant	Painter (const)	0	0	0	0	0
West Palm Beach Painters JATC	Painter (const)	20	3	2	3	3
Air Conditioning, Refrigeration & Pipefitting Educatio	Pipefitter (const)	175	15	14	16	15
Arizona Chemical Apprenticeship Program	Pipefitter (const)	3	0	0	0	0
Central Florida Chapter ABC Incorporated	Pipefitter (const)	105	13	9	10	13
City of St. Petersburg Public Utilities	Pipefitter (const)	50	10	10	10	10
Cox Fire Protection Inc	Pipefitter (const)	5	0	0	0	0
Florida First Coast Chapter of the Associated Builders	Pipefitter (const)	54	8	12	6	8
Florida Gulf Coast Chapter ABC Incorporated	Pipefitter (const)	49	1	6	5	1
Palm Beach County Plumbing A/C & Pipefitting	Pipefitter (const)	26	5	2	3	5
Pinellas Mechanical Pipe Trades	Pipefitter (const)	12	1	3	4	1
Plumbers Pipefitter & Refrigeration Local 592 JATC	Pipefitter (const)	7	0	0	0	0
Suncoast Fire Sprinkler Co.	Pipefitter (const)	10	0	0	0	0

Appendix D **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	No in program	1996 grad	1995 grad	1994 grad	1996 BJT certificates
Tampa Area Pipe Trades	Pipefitter (const)	40	6	9	10	0
University of Florida, Physical Plant	Pipefitter (const)	0	0	0	0	0
US Navy National Apprenticeship Program	Pipefitter (const)	5	0	0	0	0
City of St. Petersburg Dept of Public Utilities	Plant maintenance mechanic	1	1			
South Florida Trowel Trades	Plasterer	18	0	0	0	0
Apprenticeship Council of Trades, Inc.	Plumber	18	0	5	0	6
Central Florida Chapter ABC Incorporated	Plumber	85	15	6	6	15
City of Orlando	Plumber	1	0	1	0	0
Daytona Beach Plumbers & Pipefitters Local 295	Plumber	20	2	2	2	2
Flagler District Schools Adult & Community Educatio	Plumber	2	0	0	0	0
Florida Association of Plumbing Heating & Cooling C	Plumber	75	10	7	7	10
Florida Gulf Coast Chapter ABC Incorporated	Plumber	22	0	8	6	0
Florida Plumbing/ Electrical Apprenticeship Associati	Plumber	106	10	14	11	10
Northeast Florida Builders Assoc.	Plumber	31	0	6	4	0
Palm Beach County Plumbing A/C & Pipefitting	Plumber	28	1	10	10	1
Pinellas Mechanical Pipe Trades	Plumber	11	2	6	5	2
Plumbers Local 519 (Dade)	Plumber	75	14	12	16	14
Plumbers Pipefitter & Refrigeration Local 592 JATC	Plumber	7	0	1	0	0
Tampa Area Pipe Trades	Plumber	0	0	0	0	0
Tri-County PHCC Association	Plumber	31	10	6	8	10

Appendix D (As reported by Program Sponsor in response to Apprenticeship Survey.)

Org Name	Occ Title	No in program	1996 grad	1995 grad	1994 grad	1996 BJT certificates
United Service Training Corp	Plumber	50	0	0	0	0
University of Florida, Physical Plant	Plumber	0	0	0	0	0
University of Florida, Physical Plant	Powerhouse electrician	0	0	0	0	0
Plumbers Pipefitter & Refrigeration Local 592 JATC	Refrigeration mechanic (any ind	7	0	0	0	0
Tampa Area Pipe Trades	Refrigeration mechanic (any ind	0	0	0	0	0
University of Florida, Physical Plant	Refrigeration mechanic (any ind	1	0	0	1	1
US Navy National Apprenticeship Program	Refrigeration mechanic (any ind	48	0	0	1	0
Dade and Monroe County Roofers	Roofer	4	0	0	0	0
Roofers Local 181 (Jacksonville)	Roofer	20	3	3	2	3
Southeast Enterprise Group Inc.	Roofer	4	0	0	0	0
Central Florida Chapter ABC Incorporated	Sheet Metal Worker	75	6	5	3	6
Florida East Coast Chapter AGC of America Incorpora	Sheet Metal Worker	24	0	0	0	0
Florida First Coast Chapter of the Associated Builders	Sheet Metal Worker	25	0	0	0	0
Florida Gulf Coast Chapter ABC Incorporated	Sheet Metal Worker	0	0	1	3	0
Florida West Coast Sheet Metal JATC	Sheet Metal Worker	38	8	14	4	8
North Florida Chapter ABC Inc.	Sheet Metal Worker	9	0	0	0	0
Northeast Florida Builders Assoc.	Sheet Metal Worker	11	0	0	0	0
US Navy National Apprenticeship Program	Sheet Metal Worker	4	0	0	0	0
West Palm Beach Sheet Metal JATC	Sheet Metal Worker	28	3	7	5	3
Palm Beach County Ironworkers	Structural-Steel Worker	23	2	0	2	0

Appendix D (As reported by Program Sponsor in response to Apprenticeship Survey.)

Org Name	Occ Title	No in program	1996 grad	1995 grad	1994 grad	1996 BJT certificates
South Florida Trowel Trades	Tile setter	25	0	0	0	0
University of Florida, Physical Plant	Waste-treatment operator	2	0	1	0	1
US Navy National Apprenticeship Program	Welder, Combination	30	0	0	0	0
		4317	**435**	**454**	**452**	**377**

Prerequisites and Requirments of Apprenticeship Training

Appendix E **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	Years OJT	Hours class	Ed Req	Employ Req	Indenture	Caps
Acousti Engineering Company of Florida	Acoustical Carpenter	4	144	9th grade	yes	yes	na
University of Florida, Physical Plant	Boiler operator	4	204	HS	no		no
Florida West Coast Trowel Trades	Bricklayer (const)	3	144		yes	yes	none
Masonry Association of Florida Inc.	Bricklayer (const)	3	144	10th grade	yes	yes	none
North Florida Chapter ABC Inc.	Bricklayer (const)	3	144	8th grade	yes	yes	5
South Florida Trowel Trades	Bricklayer (const)	3	144	no	yes	yes	none
Apprenticeship Council of Trades, Inc.	Carpenter	4	144	9th	yes	yes	none
Associated General Contractors - South Florida Chapter	Carpenter	3	144	none	yes	yes	50
Carpenters Union Local 1641	Carpenter	4	200	HS or GED	none	yes	none
Central Florida Chapter ABC Incorporated	Carpenter	4	168	Read & Writ	yes	yes	none
City of Orlando	Carpenter	4	144	HS or GED			
Flagler District Schools Adult & Community Education	Carpenter	4	150	HS or GED	yes	yes	none
Florida East Coast Chapter AGC of America Incorporate	Carpenter	4	192	HS or GED	yes	yes	none
Florida First Coast Chapter of the Associated Builders &	Carpenter	4	144	9th grade	no	yes	na
Florida Gulf Coast Chapter ABC Incorporated	Carpenter	4	156	8th grade	yes	yes	no
Florida West Coast Carpenters	Carpenter	4	144	none	yes	yes	no
North Florida Chapter ABC Inc.	Carpenter	4	144	8th grade	yes	yes	5
Northeast Florida Builders Assoc.	Carpenter	4	144	HS		yes	none

Appendix E **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	Years OJT	Hours class	Ed Req	Employ Req	Indenture	Caps
Palm Beach County Carpenters	Carpenter	4	144	HS or GED	yes	yes	yes
US Navy National Apprenticeship Program	Carpenter	4	144	HS or GED	yes		
University of Florida, Physical Plant	Carpenter, maintenance	4	204	HS	no		no
South Florida Millwrights & Piledrivers Divers	Carpenter, Pile driver	4	144	HS or GED	yes	yes	12
US Navy National Apprenticeship Program	Cement Mason	3	144	HS or GED	yes		
Ocala Electric Utility - City of Ocala	Electric Meter Repairer	4	208	na	yes	yes	ratio 1:3
Withlacoochee River Electric Cooperative Inc.	Electric Meter Repairer	4				yes	
Apprenticeship Council of Trades, Inc.	Electrician	4	144	9th	yes	yes	none
Brevard Electrical Apprenticeship Training Program	Electrician	4	184		yes	yes	na
Daytona Beach Electrical JATC	Electrician	4	199	HS or GED	yes	yes	
Electrical Council of Florida Edison Chapter	Electrician	4	160		yes	yes	none
F. A. E. C. Tri-County Apprenticeship Program	Electrician	4	144	HS or GED	yes	yes	none
Flagler District Schools Adult & Community Education	Electrician	4	150	HS or GED	yes	yes	none
Florida Association of Electrical Contractors Osceola Co	Electrician	4	164	HS or GED	yes	yes	no
Florida East Coast Chapter AGC of America Incorporate	Electrician	4	192	HS or GED	yes	yes	none
Florida East Coast Electrical J.A.T.C.	Electrician	5	204	HS or GED	no	yes	none
Florida First Coast Chapter of the Associated Builders &	Electrician	4	144	HS	no	yes	na
Florida Gulf Coast Chapter ABC Incorporated	Electrician	4	156	8th grade	yes	yes	no
Florida Plumbing/ Electrical Apprenticeship Association	Electrician	5	144	HS	yes	yes	none
Florida Space Coast Chapter ABC	Electrician	4	192	HS or GED	yes		

Appendix E **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	Years OJT	Hours class	Ed Req	Employ Req	Indenture	Caps
Independent Electrical Contractors Florida West Coast C	Electrician	4	180	HS or GED	yes	yes	none
Mid-Florida Electrical Apprenticeship & Training Cmte	Electrician	4	144	HS	yes	yes	
Northeast Florida Builders Assoc.	Electrician	4	144	HS		yes	none
Okaloosa-Walton Apprenticeship Committee	Electrician	4	144	HS or GED	yes	yes	35
Pate Electric	Electrician	4	144	HS or GED	yes		none
Peace River Electrical Apprenticeship And Training Prog	Electrician	4	144	HS or GED	yes	yes	none
Pensacola Electrical Apprenticeship Comittee	Electrician	4	144	HS or GED	yes	yes	none
Tallahassee Electrical Contractors Association	Electrician	4	144	HS	yes	yes	23
Tampa Area Electrical JATC	Electrician	5	210	HS or GED	no	yes	none
US Navy National Apprenticeship Program	Electrician	4	144	HS or GED	yes		
University of Florida, Physical Plant	Electrician, maintenance	4	204	HS	no		no
Withlacoochee River Electric Cooperative Inc.	Electrician, maintenance	4				yes	
Ocala Electric Utility - City of Ocala	Electrician, substation	4	208	na	yes	yes	ratio 1:3
Withlacoochee River Electric Cooperative Inc.	Electrician, substation	4				yes	
Armstrong Elevator Company	Elevator constructor	4				yes	
Air Conditioning Contractors Association of Central Flor	Heating & Air-Cond Inst-Serv	3	156	HS or GED	yes	yes	100
Apprenticeship Council of Trades, Inc.	Heating & Air-Cond Inst-Serv	3	144	9th	yes	yes	none
Flagler District Schools Adult & Community Education	Heating & Air-Cond Inst-Serv	4	150	HS or GED	yes	yes	none
Florida East Coast Chapter AGC of America Incorporate	Heating & Air-Cond Inst-Serv	4	192	HS or GED	yes	yes	none
Florida Gulf Coast Chapter ABC Incorporated	Heating & Air-Cond Inst-Serv	4	156	8th grade	yes	yes	no

Appendix E **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	Years OJT	Hours class	Ed Req	Employ Req	Indenture	Caps
Lake County H.A.R.V. Association	Heating & Air-Cond Inst-Serv	3	144	yes	yes	yes	none
North Florida Chapter ABC Inc.	Heating & Air-Cond Inst-Serv	4	144	8th grade	yes	yes	15
Northeast Florida Builders Assoc.	Heating & Air-Cond Inst-Serv	4	144	HS		yes	none
Palm Beach County Plumbing A/C & Pipefitting	Heating & Air-Cond Inst-Serv	5	216	HS		yes	
Pinellas Mechanical Pipe Trades	Heating & Air-Cond Inst-Serv	5	216	HS	yes	yes	20
Tri-County PHCC Association	Heating & Air-Cond Inst-Serv	3	144	HS	yes	yes	none
Central Florida Heat & Frost Insulators & Asbestos Work	Insulation Worker	4	144	HS	yes	yes	no
Jacksonville Heat & Frost Insulators & Asbestos Workers	Insulation Worker	4	168	HS or GED	yes	yes	18
City of Leesburg Electric Utility	Line erector	4	144	HS	yes	yes	6
Ocala Electric Utility - City of Ocala	Line erector	4	208	na	yes	yes	ratio 1:3
Withlacoochee River Electric Cooperative Inc.	Line erector	4			yes	yes	
City of New Smyrna Beach Utilities Commission	Line Maintainer	4		HS	yes	yes	
Choctawhatchee Electric Coop (Chelco)	Line Repairer	4	as needed	HS		yes	none
Selcat Inc.	Line Repairer	3.5	144	HS		yes	
University of Florida, Physical Plant	Maintenance mechanic (any ind)	4	204	HS	no		no
University of Florida, Physical Plant	Maintenance mechanic (any ind)	4	204	HS	no		no
University of Florida, Physical Plant	Maintenance mechanic, telephon						
Central Florida Building Maintenance Apprenticeship Co	Maintenance Repairer, Build	2	440	HS or GED	yes	yes	none
Housing Authority of the City of Fort Lauderdale	Maintenance Repairer, Build	2	144	none	none	yes	30
South Florida Millwrights & Piledrivers Divers	Millwright	4	144	HS or GED	yes	yes	12

Appendix E **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	Years OJT	Hours class	Ed Req	Employ Req	Indenture	Caps
Tampa Millwrights	Millwright	4	144				
Central Florida Operating Engineers	Operating Engineer	4	147	HS or GED	none	yes	
Flagler District Schools Adult & Community Education	Operating Engineer	4	150	HS or GED	yes	yes	none
International Union of Operating Engineers (North Florid	Operating Engineer	4	214		yes	yes	40
Orange County - Roads And Drainage Department	Operating Engineer	4	140	HS or GED	yes	none	17
Tampa Operating Engineers	Operating Engineer	4	188	HS or GED	no	yes	none
Florida First Coast Chapter of the Associated Builders &	Painter (const)	3	144	9th grade	no	yes	na
University of Florida, Physical Plant	Painter (const)	4	204	HS	no		no
West Palm Beach Painters JATC	Painter (const)	3	144	10th grade	yes	yes	none
Air Conditioning, Refrigeration & Pipefitting Education	Pipefitter (const)	5	200	HS or GED	yes	yes	200
Arizona Chemical Apprenticeship Program	Pipefitter (const)	4	144	HS	yes	yes	ratio
Central Florida Chapter ABC Incorporated	Pipefitter (const)	4	168	Read & Writ	yes	yes	none
City of St. Petersburg Public Utilities	Pipefitter (const)	6	160	HS	no	yes	
Cox Fire Protection Inc	Pipefitter (const)	4	144	9th	yes		
Florida First Coast Chapter of the Associated Builders &	Pipefitter (const)	4	144	HS	no	yes	na
Florida Gulf Coast Chapter ABC Incorporated	Pipefitter (const)	4	156	8th grade	yes	yes	no
Palm Beach County Plumbing A/C & Pipefitting	Pipefitter (const)	5	216	HS		yes	
Pinellas Mechanical Pipe Trades	Pipefitter (const)	5	216	HS	yes	yes	20
Plumbers Pipefitter & Refrigeration Local 592 JATC	Pipefitter (const)	5		HS or GED	no	yes	no
Suncoast Fire Sprinkler Co.	Pipefitter (const)	4		HS or GED	yes	none	none

Appendix E **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	Years OJT	Hours class	Ed Req	Employ Req	Indenture	Caps
Tampa Area Pipe Trades	Pipefitter (const)	5	216	HS or GED	yes	yes	na
University of Florida, Physical Plant	Pipefitter (const)	4	204	HS	no		no
US Navy National Apprenticeship Program	Pipefitter (const)	4	144	HS or GED	yes		
City of St. Petersburg Dept of Public Utilities	Plant maintenance mechanic	5	200	HS	yes	yes	no
South Florida Trowel Trades	Plasterer	3	144	no	yes	yes	none
Apprenticeship Council of Trades, Inc.	Plumber	4	144	9th	yes	yes	none
Central Florida Chapter ABC Incorporated	Plumber	4	168	Read & Writ	yes	yes	none
City of Orlando	Plumber	4	144	HS or GED			
Daytona Beach Plumbers & Pipefitters Local 295	Plumber	5	240	HS or GED	yes	yes	none
Flagler District Schools Adult & Community Education	Plumber	4	150	HS or GED	yes	yes	none
Florida Association of Plumbing Heating & Cooling Con	Plumber	4	144	10th grade	yes	yes	no
Florida Gulf Coast Chapter ABC Incorporated	Plumber	4	156	8th grade	yes	yes	no
Florida Plumbing/ Electrical Apprenticeship Association	Plumber	4	144	HS	yes	yes	none
Northeast Florida Builders Assoc.	Plumber	4	144	HS		yes	none
Palm Beach County Plumbing A/C & Pipefitting	Plumber	5	216	HS		yes	
Pinellas Mechanical Pipe Trades	Plumber	5	216	HS	yes	yes	20
Plumbers Local 519 (Dade)	Plumber	5	216	HS	na	na	na
Plumbers Pipefitter & Refrigeration Local 592 JATC	Plumber	5		HS or GED	no	yes	no
Tampa Area Pipe Trades	Plumber	5	216	HS or GED	yes	yes	na
Tri-County PHCC Association	Plumber	4	144	HS	yes	yes	none

Appendix E **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	Years OJT	Hours class	Ed Req	Employ Req	Indenture	Caps
United Service Training Corp	Plumber	4	144	10th grage	yes	yes	none
University of Florida, Physical Plant	Plumber	4	204	HS	no		no
University of Florida, Physical Plant	Powerhouse electrician	4	204	HS	no		no
Plumbers Pipefitter & Refrigeration Local 592 JATC	Refrigeration mechanic (any ind)	5		HS or Ged	no	yes	no
Tampa Area Pipe Trades	Refrigeration mechanic (any ind)	5	216	HS or GED	yes	yes	na
University of Florida, Physical Plant	Refrigeration mechanic (any ind)	4	204	HS	no		no
US Navy National Apprenticeship Program	Refrigeration mechanic (any ind)	4	144	HS or GEd	yes		
Dade and Monroe County Roofers	Roofer	3	144	10th grade		yes	5
Roofers Local 181 (Jacksonville)	Roofer	3		na	yes	na	20
Southeast Enterprise Group Inc.	Roofer	3	144	HS	yes	yes	
Central Florida Chapter ABC Incorporated	Sheet Metal Worker	4	168	HS or GED	yes	yes	none
Florida East Coast Chapter AGC of America Incorporate	Sheet Metal Worker	4	192	HS or GED	yes	yes	none
Florida First Coast Chapter of the Associated Builders &	Sheet Metal Worker	4	144	9th grade	no	yes	na
Florida Gulf Coast Chapter ABC Incorporated	Sheet Metal Worker	4	156	8th grade	yes	yes	no
Florida West Coast Sheet Metal JATC	Sheet Metal Worker	4	184	HS or GED	yes	yes	no
North Florida Chapter ABC Inc.	Sheet Metal Worker	4	144	8th grade	yes	yes	16
Northeast Florida Builders Assoc.	Sheet Metal Worker	4	144	HS		yes	none
US Navy National Apprenticeship Program	Sheet Metal Worker	4	144	HS or GED	yes		
West Palm Beach Sheet Metal JATC	Sheet Metal Worker	4	216	HS or GED	yes	yes	36
Palm Beach County Ironworkers	Structural-Steel Worker	4	168	HS or GED		yes	no

Appendix E **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Occ Title	Years OJT	Hours class	Ed Req	Employ Req	Indenture	Caps
South Florida Trowel Trades	Tile setter	3	144	no	yes	yes	none
University of Florida, Physical Plant	Waste-treatment operator	4	204	HS	no		no
US Navy National Apprenticeship Program	Welder, Combination	3	144	HS or GEd	yes		

Sources of Curriculum

Appendix F **(As reported by Program Sponsor in response to Apprenticeship Survey.)**

Org Name	Curriculum source
Acousti Engineering Company of Florida	Acousti, Armstong, USG, ABC Wheels
Air Conditioning Contractors Association of Central Flor	Internal
Air Conditioning, Refrigeration & Pipefitting Education	UA & ACCA
Apprenticeship Council of Trades, Inc.	internal
Apprenticeship Council of Trades, Inc.	IEC National
Apprenticeship Council of Trades, Inc.	NAPHCC Plumbing
Apprenticeship Council of Trades, Inc.	NAPHCC HVAC
Arizona Chemical Apprenticeship Program	ICS Learning Systems
Armstrong Elevator Company	internal
Associated General Contractors - South Florida Chapter	internal, parent and school board
Brevard Electrical Apprenticeship Training Program	Florida approved; Brevard County College
Carpenters Union Local 1641	parent organization
Central Florida Building Maintenance Apprenticeship Co	Vo-tech schools
Central Florida Chapter ABC Incorporated	National Center for Construction Education & Res.
Central Florida Chapter ABC Incorporated	National Center for Construction Education & Res.
Central Florida Chapter ABC Incorporated	National Center for Construction Education & Res.
Central Florida Chapter ABC Incorporated	National Center for Construction Education & Res.

Org Name	Curriculum source
Central Florida Heat & Frost Insulators & Asbestos Work	internal and parent organization
Central Florida Operating Engineers	parent source
Choctawhatchee Electric Coop (Chelco)	TVPPA (parent)
City of Leesburg Electric Utility	ICS Learning Systems
City of New Smyrna Beach Utilities Commission	National Electric Safety Code; APPA Safety Manual
City of Orlando	Local Vo-Tech school
City of Orlando	Local Vo-Tech school
City of St. Petersburg Dept of Public Utilities	Pinellas Technical Education Center
City of St. Petersburg Public Utilities	
Cox Fire Protection Inc	American Fire Sprinkler Association
Dade and Monroe County Roofers	internal and parent organization
Daytona Beach Electrical JATC	IBEW & NECA
Daytona Beach Plumbers & Pipefitters Local 295	United Assoc of Plumbers & Pipefitters
Electrical Council of Florida Edison Chapter	Internal
F. A. E. C. Tri-County Apprenticeship Program	Internal
Flagler District Schools Adult & Community Education	State of Florida - Dept of Education
Flagler District Schools Adult & Community Education	State of Florida - Dept of Education
Flagler District Schools Adult & Community Education	State of Florida - Dept of Education
Flagler District Schools Adult & Community Education	State of Florida - Dept of Education
Flagler District Schools Adult & Community Education	State of Florida - Dept of Education

Org Name	Curriculum source
Florida Association of Electrical Contractors Osceola Co	DOE
Florida Association of Plumbing Heating & Cooling Con	National PHCC
Florida East Coast Chapter AGC of America Incorporate	Goodheart, Wilcox, ACCA, Trane
Florida East Coast Chapter AGC of America Incorporate	AGC, Delmar
Florida East Coast Chapter AGC of America Incorporate	Delmar, Goodheart, Wilcox
Florida East Coast Chapter AGC of America Incorporate	NEC
Florida East Coast Electrical J.A.T.C.	parent organization
Florida First Coast Chapter of the Associated Builders &	National Center of Const Ed & Research @ UF
Florida First Coast Chapter of the Associated Builders &	National Center of Const Ed & Research @ UF
Florida First Coast Chapter of the Associated Builders &	National Center of Const Ed & Research @ UF
Florida First Coast Chapter of the Associated Builders &	National Center of Const Ed & Research @ UF
Florida First Coast Chapter of the Associated Builders &	National Center of Const Ed & Research @ UF
Florida Gulf Coast Chapter ABC Incorporated	National Center for Const Ed & Research
Florida Gulf Coast Chapter ABC Incorporated	National Center for Const Ed & Research
Florida Gulf Coast Chapter ABC Incorporated	National Center for Const Ed & Research
Florida Gulf Coast Chapter ABC Incorporated	National Center for Const Ed & Research
Florida Gulf Coast Chapter ABC Incorporated	National Center for Const Ed & Research
Florida Gulf Coast Chapter ABC Incorporated	National Center for Const Ed & Research
Florida Plumbing/ Electrical Apprenticeship Association	NAPHCC
Florida Plumbing/ Electrical Apprenticeship Association	Delmar Publishing Co.

Org Name	Curriculum source
Florida Space Coast Chapter ABC	Brevard Community College
Florida West Coast Carpenters	internal and parent organization
Florida West Coast Sheet Metal JATC	internal and parent organization
Florida West Coast Trowel Trades	International Masonry Apprenticeship Trust
Housing Authority of the City of Fort Lauderdale	Atlantic Votech (Broward)
Independent Electrical Contractors Florida West Coast C	parent organization
International Union of Operating Engineers (North Florid	Internal, parent, General Service Administration
Jacksonville Heat & Frost Insulators & Asbestos Workers	parent organization
Lake County H.A.R.V. Association	Lake County Votech
Masonry Association of Florida Inc.	internal source
Mid-Florida Electrical Apprenticeship & Training Cmte	Daytona Beach Community College
North Florida Chapter ABC Inc.	Wheels of Learning
North Florida Chapter ABC Inc.	Wheels of Learning
North Florida Chapter ABC Inc.	Wheels of Learning
North Florida Chapter ABC Inc.	Wheels of Learning
Northeast Florida Builders Assoc.	internal and parent organization
Northeast Florida Builders Assoc.	internal and parent organization
Northeast Florida Builders Assoc.	internal and parent organization
Northeast Florida Builders Assoc.	internal and parent organization
Northeast Florida Builders Assoc.	internal and parent organization

Org Name	Curriculum source
Ocala Electric Utility - City of Ocala	ICS Learning Systems
Ocala Electric Utility - City of Ocala	ICS Learning Systems
Ocala Electric Utility - City of Ocala	ICS Learning Systems
Okaloosa-Walton Apprenticeship Committee	Okaloosa Walton Community College
Orange County - Roads And Drainage Department	Operating Engineer Union
Palm Beach County Carpenters	internal, parent
Palm Beach County Ironworkers	Int'l Assn of Bridge, Structural Ironworkers
Palm Beach County Plumbing A/C & Pipefitting	United Association
Palm Beach County Plumbing A/C & Pipefitting	United Association
Palm Beach County Plumbing A/C & Pipefitting	United Association
Pate Electric	Independent Electrical Contractors Inc. education
Peace River Electrical Apprenticeship And Training Prog	many textbooks and videos
Pensacola Electrical Apprenticeship Comittee	ITP Education Group
Pinellas Mechanical Pipe Trades	United Association
Pinellas Mechanical Pipe Trades	United Association
Pinellas Mechanical Pipe Trades	United Association
Plumbers Local 519 (Dade)	United Association's traing materials
Plumbers Pipefitter & Refrigeration Local 592 JATC	United Association
Plumbers Pipefitter & Refrigeration Local 592 JATC	United Association
Plumbers Pipefitter & Refrigeration Local 592 JATC	United Association

Org Name	Curriculum source
Roofers Local 181 (Jacksonville)	FRSA, manufacturers
Selcat Inc.	National parent organization
South Florida Millwrights & Piledrivers Divers	UBCTF, OSHA, IAT, AGC
South Florida Millwrights & Piledrivers Divers	American Welding Society
South Florida Trowel Trades	Books IMI
South Florida Trowel Trades	
South Florida Trowel Trades	
Southeast Enterprise Group Inc.	National Roofing Contractors Association
Suncoast Fire Sprinkler Co.	American Fire Sprinkler Assn
Tallahassee Electrical Contractors Association	Lively Tech Center
Tampa Area Electrical JATC	NJATC
Tampa Area Pipe Trades	parent
Tampa Area Pipe Trades	parent
Tampa Area Pipe Trades	parent
Tampa Millwrights	internal and parent sources
Tampa Operating Engineers	internal and parent organization
Tri-County PHCC Association	Internal source
Tri-County PHCC Association	Internal source
United Service Training Corp	National PHCC
University of Florida, Physical Plant	Alachua County - Loften Center

Org Name	Curriculum source
University of Florida, Physical Plant	Alachua County - Loften Center
University of Florida, Physical Plant	
University of Florida, Physical Plant	Alachua County - Loften Center
University of Florida, Physical Plant	Alachua County - Loften Center
University of Florida, Physical Plant	Alachua County - Loften Center
University of Florida, Physical Plant	Alachua County - Loften Center
University of Florida, Physical Plant	Alachua County - Loften Center
University of Florida, Physical Plant	Alachua County - Loften Center
University of Florida, Physical Plant	Alachua County - Loften Center
University of Florida, Physical Plant	Alachua County - Loften Center
University of Florida, Physical Plant	Alachua County - Loften Center
US Navy National Apprenticeship Program	
US Navy National Apprenticeship Program	
US Navy National Apprenticeship Program	
US Navy National Apprenticeship Program	
US Navy National Apprenticeship Program	by Navy & civilian institutions
US Navy National Apprenticeship Program	
US Navy National Apprenticeship Program	
West Palm Beach Painters JATC	IBPAT
West Palm Beach Sheet Metal JATC	Parent organization

Org Name	Curriculum source
Withlacoochee River Electric Cooperative Inc.	see attached
Withlacoochee River Electric Cooperative Inc.	see attached
Withlacoochee River Electric Cooperative Inc.	see attached
Withlacoochee River Electric Cooperative Inc.	see attached

Sources of Funding

Appendix G **(As reported by Program Sponsors in response to Apprenticeship Survey.)**

Org Name	Primary funding source	Primary funding method	Primary funding %
Acousti Engineering Company of Florida	Acousti Engineering Company		
Air Conditioning Contractors Association of Central Flor	Westside Tech		
Air Conditioning, Refrigeration & Pipefitting Education	30 participating MCA contractors		
Apprenticeship Council of Trades, Inc.	Collier County School Board	FTE/ICE	100
Arizona Chemical Apprenticeship Program			
Armstrong Elevator Company	owner		
Associated General Contractors - South Florida Chapter	School Board	FTE	90
Brevard Electrical Apprenticeship Training Program		FTE	
Carpenters Union Local 1641	So Florida JATTF	JAC	100
Central Florida Building Maintenance Apprenticeship Co	participating employer		
Central Florida Chapter ABC Incorporated	Seminole Community College	FTE	
Central Florida Heat & Frost Insulators & Asbestos Work	Asbestos Workers Local 67	set amount per man hour	45
Central Florida Operating Engineers	International Union of Operating Engineers	contribution rate	80
Choctawhatchee Electric Coop (Chelco)	self		
City of Leesburg Electric Utility	City of Leesburg		100
City of New Smyrna Beach Utilities Commission	Utilities Commission Operating Budget		
City of Orlando	City of Orlando	municipal budget	100
City of St. Petersburg Dept of Public Utilities	St. Petersburg Public Utilities		100

Appendix G **(As reported by Program Sponsors in response to Apprenticeship Survey.)**

Org Name	Primary funding source	Primary funding method	Primary funding %
City of St. Petersburg Public Utilities	Florida Department of Education	FTE	
Cox Fire Protection Inc	Cox Fire Protection Inc.	internal	100
Dade and Monroe County Roofers	Local Union 57 Collective Bargaining Agreem	$.15 per man hour	100
Daytona Beach Electrical JATC	NECA contractors	% of gross pay	65
Daytona Beach Plumbers & Pipefitters Local 295	participating contractors	$0.10 - 0.20 / man hour	75
Electrical Council of Florida Edison Chapter	Student fee	$125 /yr	
F. A. E. C. Tri-County Apprenticeship Program	local school board		
Flagler District Schools Adult & Community Education	Florida Department of Education	FTE	100
Florida Association of Electrical Contractors Osceola Co	DOE		95
Florida Association of Plumbing Heating & Cooling Con	Atlantic VoTech (Broward)	FTE	80
Florida East Coast Chapter AGC of America Incorporate	local school system		
Florida East Coast Electrical J.A.T.C.	NECA/IBEW	% of journey person wages	68
Florida First Coast Chapter of the Associated Builders &	Participating employers	set by Board	75
Florida Gulf Coast Chapter ABC Incorporated	participating contractors		100
Florida Plumbing/ Electrical Apprenticeship Association	Florida DOE	FTE	80
Florida Space Coast Chapter ABC			
Florida West Coast Carpenters	Carpenters Local 140	set amount per man hour worked	72
Florida West Coast Sheet Metal JATC	SMACNA	collectivebargaining agreement	70
Florida West Coast Trowel Trades	participating contractors	$0.15-0.25/ man hour	90
Housing Authority of the City of Fort Lauderdale	US HUD	comprehensive grant program	

Appendix G (As reported by Program Sponsors in response to Apprenticeship Survey.)

Org Name	Primary funding source	Primary funding method	Primary funding %
Independent Electrical Contractors Florida West Coast C	participating contractors (14)		100
International Union of Operating Engineers (North Florid	Participating contractors	contract negotiations	100
Jacksonville Heat & Frost Insulators & Asbestos Workers	Independent insulation contractors & Local 13	.10 per man hour	
Lake County H.A.R.V. Association	Florida DOE	FTE	100
Masonry Association of Florida Inc.	Vocational School system -JAX, ORL, Tampa,	FTE	80
Mid-Florida Electrical Apprenticeship & Training Cmte	participating contractors	% of payroll	55
North Florida Chapter ABC Inc.	participating employers	sponsor fee	
Northeast Florida Builders Assoc.	NE Florida Builders Assciation	per apprentice	50
Ocala Electric Utility - City of Ocala	Ocala Electric Utility	budget process	100
Okaloosa-Walton Apprenticeship Committee	Okaloosa Walton Community College		
Orange County - Roads And Drainage Department	Orange County Public School System	FTE	100
Palm Beach County Carpenters	contractor support		
Palm Beach County Ironworkers	Palm Beach School District	FTE	50
Palm Beach County Plumbing A/C & Pipefitting	Industrial coop education		
Pate Electric	Pate Electric		
Peace River Electrical Apprenticeship And Training Prog	school board	FTE	
Pensacola Electrical Apprenticeship Comittee	George Stone Vo-Tech	FTE	
Pinellas Mechanical Pipe Trades	participating contractors	man hours worked	85
Plumbers Local 519 (Dade)	Plumbers Local Union	man hours worked	
Plumbers Pipefitter & Refrigeration Local 592 JATC	signatory contractors	collective bargaining	100

Appendix G **(As reported by Program Sponsors in response to Apprenticeship Survey.)**

Org Name	Primary funding source	Primary funding method	Primary funding %
Roofers Local 181 (Jacksonville)	FCCJ Downtown Campus	hours in class	80
Selcat Inc.	NECA partitipating contractors	.75% of gross payroll	100
South Florida Millwrights & Piledrivers Divers	United Brotherhood of Carpenters	.20 per man hour	60
South Florida Trowel Trades	Broward County School Board	FTE	90
Southeast Enterprise Group Inc.	Southeast Enterprise Group	self	
Suncoast Fire Sprinkler Co.			
Tallahassee Electrical Contractors Association	Tallahassee Electrical Contractors Association	participating employers	100
Tampa Area Electrical JATC	Local Union 915 Labor Agreement	$.20 per man hour	75
Tampa Area Pipe Trades	Local 624	training fund	75
Tampa Millwrights	participating contractors	collective bargaining agreement	70
Tampa Operating Engineers	participating contractors	% of wages	80
Tri-County PHCC Association	Lee County School System	FTE?	
United Service Training Corp	Turner Technbical Adult Center (Dade)	FTE	80
University of Florida, Physical Plant	"each depatment"		
US Navy National Apprenticeship Program	US Navy	actual needs	100
West Palm Beach Painters JATC	Participating contractors	collective bargaining agreement	50
West Palm Beach Sheet Metal JATC	participating contractors	collective bargaining agreement	50
Withlacoochee River Electric Cooperative Inc.	Internal		

'Suspected' construction apprenticeship trainers not responding to survey request.

Exibit H

(Organizations not responding to Apprenticeship Survey.)

Org Name	Address	City State Zip	Phone	Fax
African-American Contractors Association Incorporated	1344 North Davis Street	Jacksonville FL 32209		
Asbestos Workers Local Union #60	6440 S. W. 3rd Court	Pembroke Pines FL 33023	954-962-7937	
Association of Builder And Contractors Institute	4700 N. W. 2nd Avenue Suite 104	Boca Raton FL 33431	561-994-2640	561-997-7982
Beeson Electric Incorporated	1018 Orange Avenue P. O. Drawer Z	Titusville FL 32780		
Brevard County Plumbers Apprenticeship Program	700 North Wickham Road Suite 108	Melbourne FL 32935		
Broward County Plumbers Apprenticeship Program	2500 South Andrews Avenue	Fort Lauderdale FL 33316	954-525-1830	954-792-4270
Broward County Roofers	3057 West Broward Boulevard	Fort Lauderdale FL 33317	954-792-4270	
Central Florida A/C & Refrigeration Contractors Incorporated	7700 State Road North	Winter Haven FL 33881	941-422-6402	
Central Florida Carpenters	301 East Oakridge Road	Orlando FL 32809		
Central Florida Electrical	2738 Forsyth Road	Winter Park FL 32792		
Central Florida Painters & Allied Trades	8434 Avenue C Building 126 McCoy AFB	Orlando FL 32827		
Central Florida Roofing & Sheet Mental Training Program	4800 Wooford Lane	Orlando FL 32810		
Clarence Williams Constructors Incorporated	8428 New Kings Road	Jacksonville FL 32219		
Collier Building Industry Association	3227 Horseshoe Drive South	Naples FL 33942		
Collier County Plumbing & Mechanical Contractors Assn.	P. O. Box 990071	Naples FL 33999	941-455-6686	941-353-7883
Dade County Ironworkers aka Miami Ironworkers	285 Northwest 199th Street Suite 101	Miami FL 33169		
David Mangrum Plumbing	Route 6 Box 323	Lake City FL 32055		
East Central Florida Sheet Metal Workers	2688 South Design Court	Sanford FL 32773		
Florida Chapter Architectural Woodwork Institute Incorporated C/O Darb	1849 NW 82 Avenue	Coral Springs FL 33071	954-341-9635	
Florida Drywall Finishers	2070 CC Tigertail Blvd.	Dania FL 33004		
Florida Electrical Apprenticeship & Training Incorporated	8581 Avenue C McCoy Annex	Orlando FL 32827-5033		
G.L.B. Construction Company Inc.	1018 Orange Street	Titusville FL 32780		

Exibit H

(Organizations not responding to Apprenticeship Survey.)

Org Name	Address	City State Zip	Phone	Fax
G.P. Peterson Construction Company	P.O. Box 9531	Jacksonville FL 32208		
Gainesville Electrical	P.O. Box 5428	Gainesville FL 32602-5428		
Gulf Coast Electrical	7830 North Palafox Street	Pensacola FL 32534	904-477-8767	904-477-8768
Heartland Air Conditioning Apprenticeship Program	c/o 2731 East Oak Island Road	Avon Park FL 33825		
Heartland Electrical Apprenticeship Program	c/o 5505 Lake Haven Blvd	Sebring FL 33872	941-453-6661 x149	
Heartland Plumbers Apprenticeship Program	c/o P.O. Box 1051	Lake Placid FL 33852	941-453-6661 x149	
Howard Daniels Plumbing	Route 1 Box 26 P	Fort White FL 32038		
Jacksonville Electrical	2941 Dawn Road	Jacksonville FL 32207	904-737-7533	
Jacksonville Masonry Trades	145 East First Street	Jacksonville FL 32206		
Jacksonville Operative Plasters & Cement Masons	1435 Naldo Avenue	Jacksonville FL 32207		
Jacksonville Plumbers & Pipefitters	5437 Cassidy Road	Jacksonville FL 32205		
Jacksonville Sheet Metal Workers	1538 Hendricks Avenue	Jacksonville FL 32207		
Masonry Association of Florida Inc. (Gulf Coast Area)	5012 W Cypress St	Tampa FL 33607-3804		
Miami Electrical	1601 Northwest 17th Avenue	Miami FL 33125		
Murton Roofing Corp.	7860 Northwest 67th Street	Miami FL 33166	305-592-5385	305-592-6721
Nelson Mechanical Contractors Inc.	211 Brent Lane	Pensacola FL 32503	904-476-9164	904-477-4976
North Florida Carpenters	5800 Ricker Road	Jacksonville FL 32210	904-771-4141	904-771-4142
North Florida Ironworkers	9616 Kentucky Street	Jacksonville FL 32218	904-674-3265	
North Florida Millwrights	7830 North Palafox Street	Pensacola FL 32534	904-477-1859	904-477-1556
Northeast Florida Chapter Masonry Association of Florida Inc.	540 A 20 Mile Road	Ponte Vedra Beach FL 32082	904-285-4964	
Northeastern Florida Construction Industry Education Foundation	P.O. Box 2519	Jacksonville FL 32203		
Northwest Florida Chapter ABC Inc.	185 Lurton St	Pensacola FL 32505	904-435-0166	904-435-9199
Orlando Area Masonry Trades	8434 Avenue C Bldg. 126 McCoy AFB	Orlando FL 32827		

Exibit H

(Organizations not responding to Apprenticeship Survey.)

Org Name	Address	City State Zip	Phone	Fax
Orlando Plumbers & Pipefitters	2153 West Oakridge Road	Orlando FL 32809		
Panama City Plumbers & Steamfitters	P.O. Box 3576	Panama City FL 32401	904-785-7663	
Peace River Air Conditioning Contractors Association	3225 Winter Lake Road	Lakeland FL 33803-9709	941-499-2700 x247	
Pensacola Plumbers & Steamfitters	2300 West Nine Mile Road	Pensacola FL 32534-9417	904-479-9166	904-479-4571
Polk County Plumbing Heating And Cooling Contractors	3225 Winter Lake Road	Lakeland FL 33803	941-499-2700 x247	
Santa Rosa Plumbers Apprenticeship Program	4904 West Spencer Field Road	Pace FL 32571	904-994-9033	904-994-1512
South Florida Carpenters	2840 Northwest 27th Avenue	Fort Lauderdale FL 33311	954-739-9200	954-739-6461
Southeastern Metals Manufacturing Company Inc.	P.O. Box 26347	Jacksonville FL 32218		
Southwest Florida Chapter Masonry Association of Florida Inc.	131 31st Street Northwest	Naples FL 33964	941-455-3421	941-455-3149
St. Petersburg Electrical	4020-80th Avenue North Room 7	Pinellas Park FL 33565	813-546-4746	813-541-1829
Tampa Ironworkers	P.O. Box 18	Mango FL 33550	813-621-4426	
Tri-County Painters	2070 CC Tigertail Blvd.	Dania FL 33004	954-927-3308	954-927-1814
W. R. Bodie Electric Company Inc.	2345 North Edgewood Avenue	Jacksonville FL 32205		
Wiley Electric	1736 Bayview Avenue	Panama City FL 32405	904-785-7064	904-784-0376