

Feasibility Study

Seaport Transportation and Logistics Educational Needs Assessment



September 2014

Executive Summary

This study was conducted for the purpose of analyzing data and information from industry stakeholders that can be used by appropriate entities within Florida for the advancement of seaport and logistics educational/training programs.

Intermodal transportation is a critical component of Florida's economy. The state's 15 seaports moved more than \$85.6 billion worth of international waterborne cargo in 2012, up 3.5 percent over 2011. This value of waterborne commerce represents 53 percent of Florida's total international trade.¹ As Florida looks to fulfill the need for an adequate, sufficiently trained workforce to support the state's sustained prominence in the intermodal transportation and associated logistics arena, the establishment of training program(s) dedicated to preparing tomorrow's workers plays a fundamental role.

There is a direct link between training and company capability, and as among other benefits, a properly and adequately trained workforce means a more efficient operation and fewer workplace accidents and less severe incidents when they do occur. This is also considered crucial to ensuring Florida's continued advantage in the highly competitive intermodal transportation and logistics realm while providing thousands of much-needed family-wage jobs. The State of Florida can play a supportive role through relevant training and/or additional education initiatives and/or grant programs.

The availability of existing training programs was evaluated, and training gaps for the respective Florida workforce were explored.

The majority of training gaps lie within three categories:

- Distribution and Manufacturing Centers
- Port Terminal Operations
- Inland Modes and Terminals

An accredited program or series of programs could combine training and education inclusive of both practical and theoretical coursework with career development efforts, such as internships and apprenticeships, while covering levels from high school to post-graduate. While a funding program may be viewed as key to facilitating the building of a workforce network that promotes industry growth while furnishing well-paying jobs for Floridians, it is not necessary to create a new dedicated educational/training facility. There are a number of such facilities within Florida whose current programs can be enhanced accordingly.

The idea of a Florida-based education and training program has already generated significant interest in Florida's public and private sectors. Thus, as this concept gains further attention, assessing existing and projected demand by occupational groups is important so that the state of Florida and its educational and economic development stakeholders and the industry can not only respond but also be positioned at the apex of the growth curve.

Within each master plan of the 15 deep-water ports, it is suggested that an education component be created that would, at a minimum, include specific goals, objectives and policies.

Public/private partnerships in the development and implementation of any program(s) would help to ensure the highest standards are being met in selection and training of an operative workforce.

¹ Five-Year Florida Seaport Mission Plan, 2013-2017, Florida Seaport Transportation and Economic Development Council, p. 37.

1. Introduction

To ensure Florida's current and future position in the national and international transportation industry, the Florida Department of Transportation commissioned this study to assess the demand for maritime training in Florida. A review of the broad range of employment data associated with the overall transportation and logistics industry was conducted, followed by a focused review of seaport and related logistics jobs.

When specifically examining Florida waterborne commerce, over 550,000 jobs in 2012 supported both domestic and international freight flows. Of those total cargo related jobs, 95,000 were direct and 456,000 were indirect.² In addition, over 130,000 cruise related jobs (direct and indirect) were generated in 2012 by Florida seaports.³ All told, \$96.6 billion in direct business revenue was generated by Florida deep-water seaports.⁴ A recent study published by PricewaterhouseCoopers ranks Florida second among all states in domestic maritime jobs.⁵

The Florida Chamber Foundation's *Florida 2013 Trade & Logistics Study* points out that over 20,000 trade and logistics jobs have been added in Florida between 2010 and 2012.⁶ Regarding the cruise component of the transportation industry, Florida has long held the distinction of being the No. 1 homeport cruise location in the world, with the cruise industry's total contribution to Florida's gross state product forecast to rise from nearly \$2.43 billion in fiscal year 2011 to almost \$3.83 billion by fiscal year 2026, with total direct cruise-related employment in Florida growing from 58,725 to 92,599 over this 15-year span.⁷ While similar figures are not so easily definable for the cargo industry, comparable if not greater growth may be anticipated in this realm as well. According to the Council of

Supply Chain Management Professionals, "projections show logistics employment increasing by more than one-fifth by 2022 amid a diminished supply of qualified employees."⁸ Adequate industry-specific education at all levels of the workforce in the seaport and transportation logistics industry is needed to support continued growth.

Select federal, state and city agencies/governments outside of Florida have commissioned efforts, listed below, to evaluate their respective current and future workforce needs of the industry. Details of the programs are provided in Appendix B.

- Georgia Center of Innovation for Logistics - Georgia Department of Economic Development
- Maritime Training Institute Career Center – South Carolina Ports Authority, City of North Charleston, and the Low Country Alliance for Model Communities
- Southeast Maritime and Transportation Center (SMART) – National Science Foundation
- Maritime Training Center of the Alabama Industrial Development Training (AIDT) – Alabama Department of Commerce.

Figure 1 depicts a broad perspective diagram of the general flow of waterborne commerce in the overall maritime and intermodal transportation sectors of the transportation industry. Included are seaport and related logistics jobs as well as other transportation industry jobs, namely rail and air cargo. Figure 1 shows the overall picture of the interconnectivity of the various players involved in the maritime and intermodal transportation sectors. However, the focus of this study is specifically on the seaport and associated logistics jobs. Therefore, the rail and air cargo jobs are not researched for this study.

² Florida Seaport Transportation and Economic Development Council, Five-Year Florida Seaport Mission Plan: 2013-2017, p.11.

³ Ibid, p.16.

⁴ Ibid, p.10.

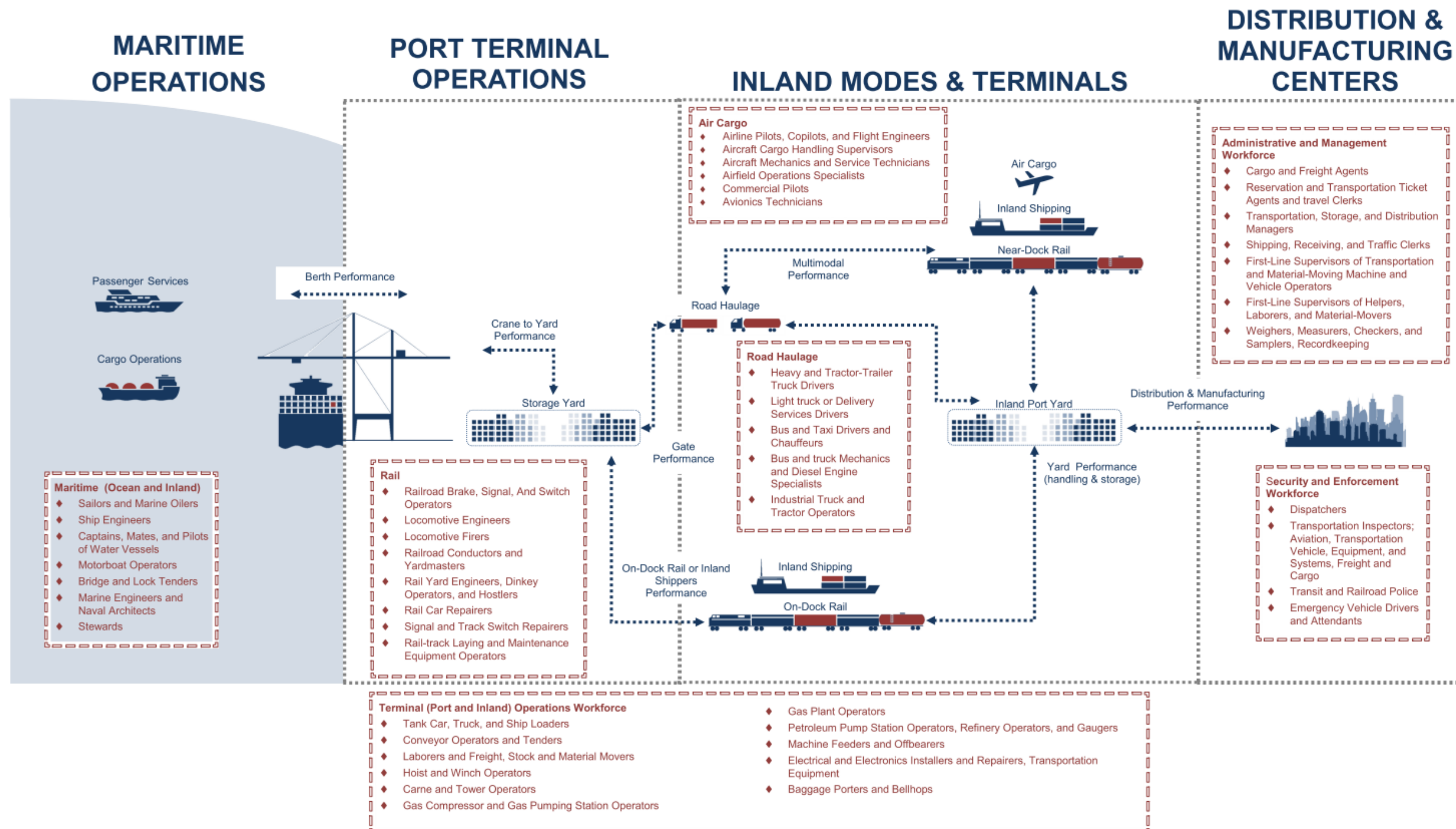
⁵ Maritime Jobs News for the Transportation Institute, American Maritime Partnership, "Florida Ranks 2nd in the US for Maritime Jobs" <<http://news.maritimejobs.com/news/florida-ranks-2nd-the-for-583063>>, June 6, 2014.

⁶ Florida Chamber Foundation, Florida 2013 Trade and Logistics Study, October 14, 2013, p.1

⁷ Florida Department of Transportation, Florida's Cruise Industry: A Statewide Perspective, November 2013, p. 2

⁸ Modern Materials Handling for the Council of Supply Chain Management Professionals <http://www.mmh.com/article/whats_your_talent_strategy>, March 24, 2014.

Figure 1: Transportation modes and associated occupations (as listed by Department of Labor).
 (Source: AECOM) Detailed listings of occupations found at www.onetonline.org/find/industry?i=48&g=Go.



2. Review of Existing Conditions

This section explores the current opportunities for transportation-specific education available in the United States, including Florida, as well as internationally. Programs offered range from skilled technical training to post-graduate degree opportunities.

2.1 Review of Current U.S. Maritime Academies

The flagship institutions for training in the Maritime Operations mode of jobs are the seven U.S. maritime academies whose locations are depicted in Figure 2 and detailed in Table 1. The U.S. Department of Transportation Maritime Administration (MARAD) supports maritime training and education programs and provides limited funding to each of these academies in various professions including shipbuilding, steamship company operations, port operations, and security to furnish future workforces for the U.S. merchant marine, armed forces and transportation systems, e.g., shipping lines, cruise lines, shipyards and port terminal operations.

The academies are:

- California Maritime Academy in Vallejo, California
- Maine Maritime Academy in Castine, Maine
- Massachusetts Maritime Academy in Buzzards Bay, Massachusetts
- State University of New York (SUNY) Maritime College in Throggs Neck, New York
- Texas A&M University of Galveston (Texas Maritime Academy) in Galveston, Texas
- Great Lakes Maritime Academy in Traverse City, Michigan
- U.S. Merchant Marine Academy at Kings Point, New York

Each of these academies offers training in a variety of maritime operations disciplines, e.g. maritime studies, engineering, business and logistics and marine sciences, in a four- to six-year degree setting, some of which result in the licensing of graduates. Acceptance rates vary among the academies, and are par with most four-year colleges in the U.S.

Figure 2: U.S.-based Maritime Academies (Source: U.S. Maritime Administration)



2.2 Review of Current Florida Logistics Training Programs and Facilities

Logistics training programs are located throughout the state of Florida and provide graduates with the necessary certifications and licenses to perform their specific competencies. Appendix B includes the enrollments and tuitions and/or training costs associated with these of the training programs and facilities.

- **University of North Florida's** Transportation & Logistics program emphasizes the perspective of logistics role as an integrated part of Supply Chain Management. Students are exposed to courses in information systems, quantitative methods, transportation, warehouse management, distribution, international logistics, logistics management, subsystems, and Capstone in Supply Chain Management. In addition, students are strongly encouraged to complete a semester long internship with a company engaged in logistics and/or supply chain management. The internship provides first-hand experience in applying their education to problems and issues confronting logistics firms. Successful completion of the program results in a Bachelors in Business Administration with a major in Transportation and Logistics.
- **University of Florida's** Supply Chain and Logistics Engineering Center is an interdisciplinary center that encourages joint research and applied projects among faculty from Engineering, Computer Science, and Business Administration in conjunction with industry participants. The Center was founded in 2000 and is located in the Department of Industrial and Systems Engineering. The Center fosters collaboration with industry and government partners to promote fundamental research, develop solutions for large-scale problems, and provide education in the areas of Supply Chain and Logistics Management and through:
 - Industry and government sponsored projects involving development of new systems and technologies to support industry and government needs;
 - Conferences and workshops, both on campus and at industry locations; and
 - Evaluation and dissemination of new models for Supply Chain and Logistics Management and Engineering.
- **Broward College** - There are three programs offered at Broward College designed that prepare students to manage and coordinate logistical functions within an enterprise, ranging from acquisitions to receiving and handling, through internal allocation of resources to operations units, to the handling and delivery of output. The three programs are listed below:
 - Logistics Specialist Technical Certificate with just 18 hours of coursework,
 - Global Trade and Logistics Associate of Science degree; and
 - Bachelor of Applied Science in Supply Chain Management.
- **Florida State College** at Jacksonville offers a Bachelors of Applied Science in Logistics (B.A.S.) degree. Students learn about subjects ranging from supply chain management, logistics technologies and global operations to financial management, strategic transportation and regulatory compliance. The degree program provides the education and experience needed to advance to management positions such as operations manager, transportation manager, warehouse manager, distribution manager, logistics coordinator, and logistician.
- **Polk State College's** Supply Chain Management program incorporates the newest technology and state-of-the-art equipment in preparing students to work in this field. Supply chain management graduates work in diverse areas such as strategic sourcing and supply management, project management, purchasing and inventory management, production planning and scheduling, logistics and distribution management, and quality management. Programs currently offered are Associate of Science in Supply Chain Management and Transportation &

Logistics Specialist College Credit Certificate (18 credit hours).

- Florida Institute of Technology's** (in Melbourne) logistics management master's degree program combines an accredited university with current, in-demand content delivered by faculty recognized for both academic and industry achievement. Professors have professional systems-level experience in logistics, acquisition and transportation through the military and business sector, as well as advanced-level certifications and experience in research. FIT has partnered with Valencia College in Orlando to offer Valencia students the chance to earn a bachelor's degree in logistics management at Valencia's Lake Nona Campus. The logistics management degree is a 2+2 program, designed for students who earn an Associate in Arts degree at Valencia with a pre-major in logistics management. The final two years of the program are taught by professors from Florida Tech, with Valencia College

providing classroom space at its Lake Nona Campus.

2.3 Review of Current Maritime and Logistics Curricula in U.S.

Much of the Florida maritime and logistics industry relies on out-of-state training, hiring from outside the state and/or on-the-job training. However, several Florida institutions of higher learning have expanded their curricula to include logistics and safety and security training, as well as engineering and environmental studies. Table 2 outlines a sampling of Florida institutions of primary and higher learning that offer such curricula related to the maritime and logistics industry. Even though this is not an all-inclusive list of programs, it is representative of the majority of available programs and the ones most recognized by the industry based on interviews with industry stakeholders.

Numerous programs and facilities across the nation and outside the U.S. offer curricula related to the industry. Details are provided in Appendix B-IV and C respectively. Table 3 summarizes these programs.

Table 2: List of Maritime-Related Programs, Colleges and Universities in the State of Florida (Source: www.edumaritime.com)

Florida Transportation Programs/Colleges/Universities		
Elementary and Secondary School Education Programs		
<ul style="list-style-type: none"> Hillsborough County Schools Maritime Program at Tampa 	<ul style="list-style-type: none"> Port Canaveral Community Academy at Canaveral Maritime and Science Technology Academy at Miami 	<ul style="list-style-type: none"> Palm Beach Maritime Academy at West Palm Beach
Merchant Marine (State-Approved)		
<ul style="list-style-type: none"> Chapman School of Seamanship at Stuart (pathway) 		
Maritime Management & Law (College Level)		
<ul style="list-style-type: none"> University of Miami 		
Logistics, Supply Chain & Transportation (College Level)		
<ul style="list-style-type: none"> Embry-Riddle Aeronautical University Worldwide at Daytona Beach University of Florida (UF) at Gainesville 	<ul style="list-style-type: none"> Florida Institute of Technology at Melbourne University of North Florida (UNF) at Jacksonville Nova Southeastern University 	<ul style="list-style-type: none"> Florida State College at Jacksonville Broward College
Engineering & Environmental Studies (College Level)		
<ul style="list-style-type: none"> Indian River State College University of Miami University of Central Florida University of Tampa 	<ul style="list-style-type: none"> Broward College Miami-Dade College Florida Institute of Technology Florida Atlantic University 	<ul style="list-style-type: none"> Nova Southeastern University University of South Florida University of West Florida
Marine, Technical & USCG Training (Professional Training)		
<ul style="list-style-type: none"> Florida Keys Community College (FKCC) at Key West Adams Marine Seminars at Crystal River Sea School at St. Petersburg Riviera Beach Maritime Academy at Riviera Beach Wartsila Land and Sea Academy at Fort Lauderdale 	<ul style="list-style-type: none"> Maritime Professional Training (MPT) at Fort Lauderdale Bluewater Maritime School at Jacksonville George Stone Technical Center (GSTC) at Pensacola Pinellas Technical Education Centers (PTEC) at Clearwater Wyotech at Daytona 	<ul style="list-style-type: none"> STAR Center at Dania Beach Resolve Maritime Academy at Fort Lauderdale Manatee Technical Institute (MTI) at Bradenton Universal Technical Institute (UTI) at Orlando Florida Maritime Training Academy at Fort Pierce
Yacht Crew Training		
<ul style="list-style-type: none"> American Yacht Institute (AYI) at Fort Lauderdale 	<ul style="list-style-type: none"> International Yacht Training (IYT) at Fort Lauderdale 	<ul style="list-style-type: none"> International Crew Training (ICT) at Fort Lauderdale
Rail Programs		
<ul style="list-style-type: none"> Michigan State University Railway Management Programs (Coursework travels from week to week) at Jacksonville 		
Air Cargo Programs		
<ul style="list-style-type: none"> International Air Transport Association (IATA) Training and Development Institute (ITDI) at Miami 		
Truck Training Programs		
<ul style="list-style-type: none"> Roadmaster at Jacksonville, Orlando and Tampa Pinellas Technical Education Centers at St. Petersburg Florida Coat Career Tech at Jacksonville 	<ul style="list-style-type: none"> Truck Driver Institute at Milton and Sanford Mid Florida Technical at Orlando College of Central Florida at Ocala 	<ul style="list-style-type: none"> South Florida Community College at Avon Park Indian River State College at Fort Pierce Bradford-Union Area Career Technical Center at Starke

Table 3: Sample of Maritime-Related Programs Outside Florida

Outside Florida		
Institution	Location	Programs
School of Naval Architecture and Marine Engineering	University of New Orleans	<ul style="list-style-type: none"> Bachelor of Science in Engineering
Seattle Maritime Academy	Seattle Central Community College	<ul style="list-style-type: none"> Vocational and technical training Licensure preparation
Naval Engineering Education Center	University of Michigan, Ann Arbor	<ul style="list-style-type: none"> Naval Engineering courses
US Coast Guard Standards for Training, Certification and Watchkeeping	San Jacinto College, Houston	<ul style="list-style-type: none"> Deck-level courses Unlimited Tonnage Master Certification Chief Engineer Certification
Center for Logistics, Trade and Transportation	University of Southern Mississippi, Hattiesburg and Gulfport	<ul style="list-style-type: none"> Master of Science in Logistics, Trade and Transportation
Outside U.S.		
Institution	Location	Programs
Australia Institute for Maritime Education, Training, and Research	Australian Maritime College, Launceston, Tasmania	<ul style="list-style-type: none"> Bachelor of Science in Engineering Master of Science and PhD studies Vocational certificates
Lloyd's Maritime Academy	London, England	<ul style="list-style-type: none"> Master of Business Administration in shipping and logistics
National Maritime College of Ireland	Ringaskiddy, County Cork	<ul style="list-style-type: none"> Three-year degree courses in nautical science, marine and plant engineering Certificate in navigational studies

3. Assessment of Industry Need/Demand/Opportunity

Based on the existing opportunities available for workforce training and education, an assessment was conducted of employer needs, demands and opportunities for expanding education portals in the State of Florida. Leaders and stakeholders participated in an open-ended questionnaire to determine the construction of and future demand for an effective workforce. The following individuals and/or entities were involved in the assessment:

- Cargo industry, including port, rail and trucking companies
- Cruise Industry
- Florida's Deepwater Seaports
- U.S. Maritime Administration
- Enterprise Florida

training programs involve limited course work and/or field training that will enable workers to initiate employment. Obtaining advancement, however, will likely require continued education and certifications/licensing. Higher-level degree programs, starting with Associates Degrees, are mostly concentrated in the Maritime Operations category of jobs.

Details of the assessments are provided in Appendix D.

In order to establish a baseline of existing conditions and the potential future demand, Tables 4, 6, 8, and 10 present historical and projected employment statistics for Florida. Unless otherwise noted within the tables, the employment data are sourced from the Florida Department of Economic Opportunity.⁹ The other source of employment data is the U.S. Department of Labor, Bureau of Labor Statistics.¹⁰ The historical data for the jobs are for one year only, either 2013 (for FDEO) or 2010 (for BLS). Historical data prior to those years are considered skewed due to the global recession years of 2007 through 2011 that had the effect of stunting job growth and therefore are not used for the analysis. As per the Five-Year Florida Seaport Mission Plan, the total number of 2012 jobs in Florida is similar to 2008 jobs (the start of the recession).¹¹

From there, the availability of existing training programs is shown in Tables 5, 7, 9, and 11. These tables also present training gaps for the respective Florida workforce, i.e., where there is a perceived need in Florida for a training program(s).

It should be noted that for some of the jobs within each of the four categories, with the exception of Maritime Operations,

⁹ Florida Department of Economic Opportunity, Employment Projections
<<http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections>>

¹⁰ U.S. Department of Labor, Bureau of Labor Statistics, Transportation and Warehousing Occupations Projected Growth,
<<http://www.onetonline.org/find/industry?i=48&g=Go>>

¹¹ Florida Seaport Transportation and Economic Development Council, Five-Year Florida Seaport Mission Plan: 2013 – 2017, p. 14.

3.1 Maritime Operations (Ocean and Inland)

Table 4 shows jobs and Florida employment data for this industry category.

Table 4: Maritime Operations Employment

Job Title	2013 Historic Employment (BLS 2010)	2021 Projected Employment (BLS 2020)	Increase
Sailors & Marine Oilers	2,942	3,172	+7.8%
Captains, Mates & Pilots of Water Vessels	2,805	3,015	+7.5%
Ship Engineers	1,621	1,747	+7.8%
Motorboat Operators	1,521	1,606	+5.6%
Marine Engineers & Naval Architects (BLS)	300	330	+10.0%
Bridge & Lock Tenders	251	270	+7.6%
Stewards	NA	NA	NA
Total	9,440	10,140	+7.4%

Table 5 describes the availability of training programs for the jobs in the Maritime Operations category, along with gaps where training is not readily available.

Table 5: Maritime Operations Available Training

Job Title	Available Training	Perceived Gaps
Sailors & Marine Oilers	<ul style="list-style-type: none"> Great Lakes Maritime Academy Seattle Maritime Academy 	Nothing available in Florida
Captains, Mates & Pilots of Water Vessels	<ul style="list-style-type: none"> Texas A&M San Jacinto College, Houston Seattle Maritime Academy Adams Marine Seminars, Crystal River (Florida) Maritime Professional Training at Fort Lauderdale 	Limited Florida programs in Fort Lauderdale and Crystal River (Tampa area)
Ship Engineers	<ul style="list-style-type: none"> Maine Maritime Academy San Jacinto College, Houston Maritime Professional Training at Fort Lauderdale Florida Keys Comm. College Marine Engineering Management (pathway) George Stone Technical Center at Pensacola Wartsila Land & Sea Academy at Fort Lauderdale Pinellas Technical Educ. Center at Clearwater Florida Maritime Training Academy at Fort Pierce 	None
Motorboat Operators	<ul style="list-style-type: none"> Bluewater Maritime School at Jacksonville 	None
Marine Engineers & Naval Architects	<ul style="list-style-type: none"> Broward College Marine Engineering Management Program Riviera Beach Maritime Academy (as pathway) University of New Orleans School of Naval Architecture & Marine Engineering Maine Maritime Academy Massachusetts Maritime Academy SUNY Maritime College Texas Maritime Academy US Merchant Marine Academy Stevens Institute of Technology, Schaefer School of Eng. & Science Univ. of Michigan 	Only one program in Florida, but is only for associates degree level, and marine certification through the American Boat and Yacht Council
Bridge & Lock Tenders	<ul style="list-style-type: none"> STAR Center Resolve Maritime Academy at Fort Lauderdale 	None
Stewards	<ul style="list-style-type: none"> Maritime Professional Training at Fort Lauderdale 	None

With the exception of the Sailors and Marine Oilers, there appears to be ample training available for these positions, although the programs in Florida are limited. This job category generates the smallest number of employees, and just 2% of projected employment of the entire representative sample.

3.2 Port Terminal Operations

Table 6 shows jobs and Florida employment data for this industry category. The jobs here are also present in the Inland Modes & Terminals category. However, for the purpose of avoiding duplication, these jobs are shown here only.

Table 6: Port Terminal Operations Employment

Job Title	2013 Historic Employment (BLS 2010)	2021 Projected Employment (BLS 2020)	Increase
Laborers & Freight, Stock & Material Movers	108,118	118,784	+9.9%
Baggage Porters & Bellhops (BLS)	6,470	7,670	+18.5%
Machine Feeders & Offbearers (BLS)	3,350	3,170	-5.4%
Crane & Tower Operators	1,633	1,910	+17.0%
Conveyor Operators & Tenders	1,165	1,205	+3.4%
Elect. Installers & Repairers, Transportation Equipment (BLS)	960	1,040	+8.3%
Tank Car, Truck & Ship Loaders	563	551	-2.1%
Petroleum Pump Station Operators (BLS)	230	190	-17.4%
Hoist & Winch Operators	48	56	+16.7%
Gas Compressor & Gas Pump Station Operators (BLS)	30	30	0%
Gas Plant Operators	NA	NA	NA
Total	119,217	134,606	+12.9%

The jobs that are expected to see the highest increase in employment in this category are Baggage Porters/Bellhops, Crane and Tower Operators, and Hoist and Winch Operators with 18.5%, 17.0%, and 16.7% respectively.

Table 7 describes the availability of training programs for the jobs in the Port Terminal Operations category, along with gaps where training is not readily available.

Table 7: Port Terminal Operations Available Training

Job Title	Available Training	Perceived Gaps
Laborers & Freight, Stock & Material Movers	<ul style="list-style-type: none"> San Jacinto College, Houston 	Considered a primary employment generator and nothing available in Florida
Baggage Porters & Bellhops	<ul style="list-style-type: none"> On-the-job training 	None
Machine Feeders & Offbearers	<ul style="list-style-type: none"> Broward County College Marine Engineering Management Program 	Even though this job is considered a significant employment generator, it is showing a 5% decrease in employment, likely due to automation advances.
Crane & Tower Operators		Nothing available specific to maritime.
Conveyor Operators & Tenders	<ul style="list-style-type: none"> San Jacinto College, Houston 	None
Elect. Installers & Repairers, Transp. Equipment	<ul style="list-style-type: none"> Seattle Maritime Academy Wyotech Advanced Marine at Daytona 	None
Tank Car, Truck & Ship Loaders	<ul style="list-style-type: none"> College of Central Florida, Ocala Bradford-Union Area Career Technical Center, Starke San Jacinto College, Houston 	None
Petroleum Pump Station Operators	<ul style="list-style-type: none"> San Jacinto College, Houston 	None
Hoist & Winch Operators	<ul style="list-style-type: none"> Broward County College Marine Engineering Management Program 	None
Gas Compressor & Gas Pump Station Operators		Nothing available in Florida
Gas Plant Operators	<ul style="list-style-type: none"> Seattle Maritime Academy 	Nothing available in Florida

Overall, this job category lacks in training programs in Florida. In addition, this job category has the largest percentage

increase of future employees at 12.9%, but the second largest increase in total number of jobs at 15,389 (second to Inland Modes and Terminals). Granted, on-the-job training is likely a primary source of training for this job, but a specific vocational program that addresses these job duties would be suitable given the complex nature of terminal operations and related security issues. In addition, even though Crane and Tower Operators account for 1% of total future jobs within this category, it does show significant expected growth (+17%) and merits consideration for a vocational program that addresses specific job duties for the maritime industry.

3.3 Inland Modes and Terminals

Table 8 shows jobs and Florida employment data for this industry category. As noted in Section 4.2, Terminal Operations related jobs are excluded here. They are solely addressed in Section 4.2.

Table 8: Inland Modes and Terminals Employment

Job Title	2013 Historic Employment (BLS 2010)	2021 Projected Employment (BLS 2020)	Increase
Heavy & Track-Trailer Truck Drivers	72,982	80,735	+10.6%
Light Truck or Delivery Services Drivers	45,470	49,465	+8.8%
Industrial Truck & Tractor Operators	19,864	21,558	+8.5%
Bus/Taxi Drivers & Chauffeurs	15,047	16,903	+12.3%
Bus/Truck Mechanic, & Diesel Engine Specialists (BLS)	9,330	10,060	+7.8%
Total	162,693	178,721	+9.8%

Growth of jobs in this category is expected to range between 7.8% and 12.3%. Overall, this category has a relatively small number of job titles, but total projected employment is nearly 179,000, with over 16,000 Inland Modes and Terminals jobs expected to be added to the workforce within the 10-year projection timeframe.

The two jobs that are expected to generate the highest employment increases are Heavy and Tractor Trailer Truck Drivers; and Bus/Taxi Drivers and Chauffeurs with a 10.6 % and 12.3% increases respectively.

Table 9 describes the availability of training programs for the jobs in the Inland Mode and Terminals category.

Table 9: Inland Modes and Terminals Available Training

Job Title	Available Training	Perceived Gaps
Heavy & Track-Trailer Truck Drivers	<ul style="list-style-type: none"> Roadmaster, Jacksonville, Orlando, Tampa Truck Driver Institute, Sanford, Milton South Florida Community College, Avon Park Mid Florida Tech, Orlando Florida Coast Career Tech, Jacksonville College of Central Florida, Ocala Bradford-Union Area Career Technical Center, Starke 	None
Light Truck or Delivery Services Drivers	<ul style="list-style-type: none"> Roadmaster, Jacksonville, Orlando, Tampa Truck Driver Institute, Sanford, Milton South Florida Community College, Avon Park Indian River State College, Fort Pierce Bradford-Union Area Career Technical Center, Starke 	None
Industrial Truck & Tractor Operators	<ul style="list-style-type: none"> On-the-job training, union apprenticeships 	Nothing available specific to maritime
Bus/Taxi Drivers & Chauffeurs	<ul style="list-style-type: none"> Bradford-Union Area Career Technical Center, Starke South Florida Community College 	None
Bus/Truck Mechanical & Diesel Engine Specialists	<ul style="list-style-type: none"> Pinellas Technical Education Center 	None

There appears to be ample training available throughout Florida for each job in this category with the exception of Industrial Truck and Tractor Operators. Training for this job is typically handled through union apprenticeships, e.g., Operating Engineers.

3.4 Distribution and Manufacturing Centers

Table 10 shows jobs and Florida employment data for this industry category.

Table 10: Distribution and Manufacturing Centers Employment

Job Title	2013 Historic Employment (BLS 2010)	2021 Projected Employment (BLS 2020)	Increase
Shipping, Receiving & Traffic Clerks (BLS)	37,640	37,960	+0.8%
Reservation & Transportation Ticket Agents (BLS)	12,950	14,200	+9.6%
Security Dispatchers (BLS)	8,980	10,110	+12.6%
1st Line Supervisors of Transportation & Material Moving Machinery & Vehicle Operators	8,937	9,858	+10.3%
1st Line Supervisors Of Helpers	7,715	9,051	+17.3%
Cargo/Freight Agents (BLS)	7,210	8,340	+15.7%
Weighers, Measurers, Checkers, Samplers (BLS)	4,520	5,060	+11.9%
Transportation, Storage & Distribution Managers (BLS)	3,570	3,700	+3.6%
Emergency Vehicle Drivers & Attendants (BLS)	730	860	+17.8%
Transportation Inspectors (BLS)	740	810	+9.5%
Transit & Rail Police (BLS)	90	80	-11.1%
Total	93,082	100,029	+7.5%

The two largest generators of future jobs are Shipping, Receiving and Traffic Clerks; and Reservation and Transportation Ticket Agents and Travel Clerks. These two jobs combined will account for over 52,000 new jobs, or 52% of the total jobs in this category. Each are expected to show 0.8% and 9.6% increases respectively.

Table 11 describes the availability of training programs for the jobs in the Distribution and Manufacturing Centers category, along with gaps where training is not readily available.

Table 11: Distribution and Manufacturing Centers Available Training

Job Title	Available Training	Perceived Gaps
Shipping, Receiving & Traffic Clerks		Considered a primary employment generator and no known training
Reservation & Transportation Ticket Agents		No training available and considered a primary employment generator.
Security Dispatchers	<ul style="list-style-type: none"> Port Manatee Security Training Program Maritime Professional Training at Fort Lauderdale 	None
1st Line Supervisors of Transportation & Material Moving Machinery & Vehicle Operators		No training available and has relatively high growth rate (over 10%)
1st Line Supervisors of Helpers		No training available and has high growth rate (over 17%)
Cargo/Freight Agents		No training available and has high growth rate (nearly 16%)
Weighers, Measurers, Checkers, Samplers		No training available and has relatively high growth rate (nearly 12%)
Transportation, Storage & Distribution Managers	<ul style="list-style-type: none"> Hillsborough Schools Maritime Program (pathway) 	On-the-job training has been prevalent and employer training for inventory management systems.
Emergency Vehicle Drivers & Attendants	<ul style="list-style-type: none"> South Florida Community College, Avon Park San Jacinto College, Houston STAR Center 	None
Transportation Security Inspectors	<ul style="list-style-type: none"> San Jacinto College, Houston 	Nothing available in Florida
Transit & Rail Police	<ul style="list-style-type: none"> San Jacinto College, Houston 	Nothing available in Florida

Even though this job category is not the largest employment generator, it does contain a number of key jobs that are expected to experience substantial growth, and these jobs include both supervisors/managers and clerks/agents. For a

good number of these jobs, there is no known training available and it is not known if on-the-job training is sufficient to satisfy job requirements. Therefore, it is possible that job candidates are recruited from outside Florida or from similar job categories outside the transportation industry. This is especially true for the three manager/supervisor jobs and for the two highest generators of jobs, i.e., Shipping, Receiving and Traffic Clerks; and Reservation and Transportation Ticket Agents and Travel Clerks.

3.5 Employment Demands Summary

In summary, the total projected jobs for the representative sample is 423,496, or a 10% increase over the 10-year period, which is considered important enough for Florida educational and economic development stakeholders to review for further action. Table 12 summarizes the existing and future employment data of the four job categories.

Table 12: Employment Data Summary

Job Category	Historic Employment	Projected Employment	Increase	Employee Increase
Inland Modes and Terminals	162,693	178,721	+9.8%	+16,028
Port Terminal Operations	119,217	134,606	+12.9%	+15,389
Distribution and Manufacturing Centers	93,082	100,029	+7.5%	+6,947
Maritime Operations	9,440	10,140	+7.4%	+700
Total	384,432	423,496	+10.0%	+39,064

The two highest projected employee increases are to be in Port Terminal Operations (+12.9%) and Inland Modes and Terminals (+9.8%). These two categories will also carry the brunt of the jobs (74%) associated with the representative sample of Florida seaport/maritime and associated logistics jobs. Port Terminal Operations is expected to generate over 134,000 jobs and Inland Modes and Terminals are expected to generate nearly 179,000 jobs.

Table 13 summarizes the training gaps for jobs that are considered key players in the seaport and related logistics industry.

Table 13: Training Gaps Summary

Job Category	Job Title	Projected Employment	Increase	Training Gap Issue
Inland Modes and Terminals	Industrial Truck and Tractor Operators	21,558	+8.5%	Only on-the-Job training and employer/union apprenticeships available
Port Terminal Operations	Laborers and Freight/Stock/Material Movers	118,784	+9.9%	Nothing available in Florida. Considered a primary employment generator for this category
	Crane and Tower Operators	1,910	+17.0%	No formal training available, but likely through unions and advancement through employer/union apprenticeship programs; High % growth
	Baggage Porters and Bellhops	7,670	+18.5%	Only on-the-Job training available; Considered a primary employment generator for this category
	Machine Feeders and Offbearers	3,170	-5.4%	Broward County College Marine Engineering Management Program; Expected decrease in jobs.
Distribution and Manufacturing Centers	Cargo and Freight Agents	8,340	+15.7%	No available training and has high growth rate.
	Reservation and Transportation Ticket Agents and Travel Clerks	14,200	+9.6%	No available training; Considered a primary employment generator for this category
	Transportation, Storage and Distribution Managers	3,700	+3.6%	On-the-job training has been prevalent, including employer training for inventory management systems.
	Shipping, Receiving and Traffic Clerks	37,960	+0.8%	No available training; Considered a primary employment generator for this category
	First Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	9,858	+10.3%	No available training and has relatively high growth rate.
	First Line Supervisors of Helpers, Laborers and Material Movers	9,051	+17.3%	No available training and has high growth rate.
	Weighers, Measurers, Checkers and Samplers and Record Keepers	5,060	+11.9%	No available training and has relatively high growth rate.
Maritime Operations	Sailors and Marine Oilers	3,172	+7.8%	Nothing available in Florida; Considered a primary employment generator for this category
	Captains, Mates and Pilots of Water Vessels	3,015	+7.5%	Limited Florida programs in Fort Lauderdale and Crystal River (Tampa area); Considered a primary employment generator for this category
	Marine Engineers and Naval Architects	300	+10%	Only one program in Florida; Majority of training provided by U.S. Maritime Academies, located outside of Florida; Employment numbers are not considered significant

The majority of training gaps lie within the Distribution and Manufacturing Centers. This job category constitutes 24% of total projected employment. The jobs with perceived gaps are vocational in nature that includes both entry- and managerial-level positions. It is possible that the entry-level positions are stepping-stones for the managerial positions within this job category. It should be noted that gaps exist for both of the primary employment generator jobs for this category. The other jobs identified in this category have high growth rates and appear to lack sufficient training.

The Port Terminal Operations job category is the second largest overall employment generator. Specifically, the Laborers and Freight/Stock/Material Movers job is one of the largest future employment generators (118,784) and there are no known

training programs, either in Florida or in the U.S. Given the complexity of Port terminal operations and security standards, a vocational program that addresses the duties of this job is worth exploring. Employer and union sponsored training will likely continue for Crane and Tower Operators, but given the high expected growth rate, supplemental training may be necessary in the near future. A similar perceived gap is also apparent for Industrial Truck and Tractor Operators in the Inland Modes and Terminals job category where only employer and union sponsored training is available. There are also training gaps for the two jobs that are considered primary employment generators in the Maritime Operations category, i.e., Sailors and Marine Oilers; and Captains, Mates and Pilots of Water Vessels, where training is either limited or non-existent.

4. Summary of Findings

Expanded education and training programs are anticipated and, in fact, needed to meet the increasing workforce demands of seaport transportation and logistics in Florida. Meeting such needs is critical to securing Florida's continued eminence in highly competitive national and global spheres of commerce and will facilitate thousands of well-paying jobs for Floridians. The presence of numerous educational programs and facilities throughout the state indicates that it may not be advisable for the state to advance a single location. Rather, the state can support and encourage intermodal transportation and logistics training and education through multiple courses of action.

As previously stated, it has been estimated that the statewide maritime industry is worth more than \$96.6 billion in direct business revenue for the Florida economy. Based on the analysis completed for this study, ongoing automation trends of port terminals will continue to impact available skilled labor. It is anticipated that there will be a push to supplement current levels of on-the-job training and employer/union sponsored training concurrent with the rise of technology advances in seaport operations and security needs. In addition, it was noted by a number of senior port officials during the interview process that the progressive aging of management workforce will soon escalate the need of a younger educated and experienced labor pool. This study does not take attrition into account; therefore the growth estimates are conservative.

Overall, the perceived gaps in current available training in Florida rests primarily in the land-based jobs and specifically, within the Distribution and Manufacturing Centers job category. These jobs are both entry- and managerial-level jobs that typically require semi-skilled labor. There is a distinct need to have training program(s) and educational opportunities for seaport transportation and logistics within Florida for effective job placement.

This study was conducted for the purpose of analyzing data and information from industry stakeholders that can be used by appropriate entities within Florida for the advancement of seaport and logistics educational/training programs. The following steps are recommended to initiate the process:

- Encourage seaports to add an education/training component or separate element to their master plans that addresses respective education/training needs for their labor force, regardless of the type of port operations, i.e., for both operating ports and landlord ports. It could be as simple as a set of applicable goals, objectives and policies. In addition, this education/training component should address the need for public/private partnerships of the various stakeholders to ensure an adequately trained and viable labor force for seaport and related logistics jobs.
- Encourage accredited entities to develop a program focused on seaport transportation and logistics. The creation of an accreditation program for training and education programs whose curricula meet the core requirements should be consistent with the state's transportation plan.
- Encourage educational/training providers to identify potential funding sources for the existing 50/50 match Seaport Employment Training Grant Program, which is administered by the Florida Department of Economic Opportunity. This training grant program, passed by the Florida Legislature in 2013, could possibly be used to support accredited programs selected for funding via competitive grant applications and also be supportive of scholarships and/or internships via competition. Traditionally, federal and state grant programs have been readily available in the past for economic development, finance, construction, planning/research, training, technical assistance, and infrastructure investments for various industries.

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Appendix A: Maritime Academies Profiles

California Maritime Academy, Vallejo, California

Mission: Provide each student with a college education combining intellectual learning, applied technology, leadership development, and global awareness. Provide the highest quality licensed officers and other personnel for the merchant marine and national maritime industries. Provide continuing education opportunities for those in the transportation and related industries. Be an information and technology resource center for the transportation and related industries.

Vision: The California Maritime Academy will be a leading educational institution, recognized for excellence in the business, engineering, operations, and policy of the transportation and related industries of the Pacific Rim and beyond.

Accreditation	<ul style="list-style-type: none"> • Western Association of Schools and Colleges (WASC) • Engineering Accreditation Commission of ABET • Engineering Technology Accreditation Commission of ABET • International Assembly for Collegiate Business Education (IACBE)
Programs Offered	<ul style="list-style-type: none"> • B.S. in Business Administration - International Business and Logistics • B.S. in Facilities Engineering Technology • B.A. in Global Studies & Maritime Affairs • B.S. in Marine Engineering Technology • B.S. in Marine Transportation • B.S. in Mechanical Engineering
Students	<ul style="list-style-type: none"> • Institution Size: 974 undergraduates (1,100 capacity) • 75.1% applicants admitted (66% in-state, 34% out-of-state) • First-Year Student Retention (full-time students): 82% • Average GPA 3.1
Financial Aid	<ul style="list-style-type: none"> • Cost: \$22,223 (in-state); \$33,881 (out-of-state) • Financial Aid Available: Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (SEOG), State University Grants (SUG), Cal Grant A and B, Student Incentive Payment (SIP) program • 63% of students receive aid on average \$8,918 in grants; \$6,821 in loans

For more information, visit: www.csum.edu

Great Lakes Maritime Academy, Traverse City, Michigan

Mission and Values: Northwestern Michigan College provides lifelong learning opportunities to our communities. We will continuously improve the learning experience and its global relevance to those we serve through innovation, agility and thoughtful risk-taking. Our actions are governed by the highest degree of ethics, integrity and personal responsibility, exhibited through transparency, openness and trust.

Vision: NMC will be the resource of choice for higher education, lifelong learning and cultural experiences. NMC will be an essential contributor to quality of life and a vibrant economy. We will demonstrate collaborative and inventive approaches to education and training for liberal studies, careers, interests and emerging learner markets.

Accreditation	<ul style="list-style-type: none"> • North Central Association of Colleges and Schools
Programs Offered	<ul style="list-style-type: none"> • Deck Officer • Engineering Officer • Power plant Facilities Operator
Students	<ul style="list-style-type: none"> • Institution Size: 150 Undergraduates • 25% applicants admitted • 100% military enrollment upon graduating
Financial Aid	<ul style="list-style-type: none"> • Cost: \$22,840 (in-state); \$23,288 (out-of-state) • 95% of students receive aid on average • Financial Aid Available: US Maritime Administration’s Student Incentive Payment (SIP) program

For more information, visit: www.nmc.edu/maritime

Maine Maritime Academy, Castine, Maine

Mission: The mission of Maine Maritime Academy is to provide a quality education primarily focused on marine related programs. The curriculum will empower students to take on leadership roles, encourage rigorous self-discipline, promote curiosity, and provide graduates with the skills and knowledge needed to succeed in the global economy.

Vision: Maine Maritime Academy is a career-oriented college that strives to be a globally recognized leader in providing the highest quality maritime, engineering, engineering technology, marine science, and logistics education with facilities and laboratories that are at the leading edge of technological innovation.

Accreditation	<ul style="list-style-type: none"> • New England Association of Schools and Colleges • Engineering Technology Accreditation Commission of ABET • Technology Accreditation Commission of ABET • Engineering Accreditation Commission of ABET
Programs Offered	<ul style="list-style-type: none"> • Marine Engineering Operations and Technology • Marine Systems Engineering - License and Non-License Track • Power Engineering Technology and Operations • Marine Transportation Operations • Vessel Operations & Technology • Small Vessel Operations, Design, Systems • International Business & Logistics
Students	<ul style="list-style-type: none"> • Institution size: 970 undergraduates • 66% of applicants accepted • First Year Student Retention: 73% • 4-Year Graduation Rate: 54% • 6-Year Graduation Rate: 69% • Average GPA 2.9
Financial Aid	<ul style="list-style-type: none"> • Cost: \$23,673 (in-state); \$33,673 (out-of-state)

<ul style="list-style-type: none"> • Financial Aid: Student Incentive Payment (SIP) program, Opportunity Maine • 88% of students receive aid on average \$5,314 grants; \$10,094 loans
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For more information, visit: www.mainemaritime.edu

Massachusetts Maritime Academy, Buzzards Bay, Massachusetts

Mission: The mission of Massachusetts Maritime Academy is to graduate educated men and women to serve the maritime industry as licensed officers or to serve the transportation, engineering, environmental, and industrial interests of the Commonwealth and the Nation.

Accreditation	<ul style="list-style-type: none"> • New England Association of Schools and Colleges (NEASC) • Accreditation Boards for Engineering and Technology (ABET) • International Assembly for Collegiate Business Education (IACBE) • Special Mission Report • US Coast Guard /Marine Administration Letter of Approval
Programs Offered	<p>Undergraduate</p> <ul style="list-style-type: none"> • Emergency Management • Energy Systems and Facilities Engineering • International Maritime Business • Marine Engineering, Transportation, Safety & Environmental Protection <p>Graduate, Professional & Continuing Education</p> <ul style="list-style-type: none"> • Emergency and Facilities Management • Pollution Compliance for Seafarers Certificate Program
Students	<ul style="list-style-type: none"> • Institution Size: 1,296; (1,188 undergraduates) • 63% of applicants admitted; 69% in-state; 31% out-of-state • First Year Student Retention: 90% • 4-Year Graduation Rate: 45% • 6-Year Graduation Rate: 62% • Average GPA 2.7
Financial Aid	<ul style="list-style-type: none"> • Cost: \$18,323 (in-state); \$33,901 (out-of-state) • Financial Aid: Student Incentive Payment (SIP) program, MMA Financial Aid • 83% of students receive aid on average \$5,590 grants; \$8,295 loans; \$686,145 total annual aid awarded

For more information, visit: www.maritime.edu

SUNY Maritime College, Throggs Neck, New York

Mission: Maritime College educates leaders to excel in the global maritime environment through an interdisciplinary approach to undergraduate and graduate studies in engineering, maritime studies, global maritime business, security and supply chain management, and environmental science; specialized programs are offered as pathways to US Coast Guard licensing or military accession and training.

Vision: Be "First and Foremost": SUNY Maritime College is a premier institution recognized internationally for its expertise in global maritime research, development, education and training. Towards that end, the College delivers quality learning worldwide to meet the “any time, any place” needs of the maritime community.

Accreditation	<ul style="list-style-type: none"> • Middle States Commission on Higher Education • New York State Department of Education
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	<ul style="list-style-type: none"> • ABET
Programs Offered	<ul style="list-style-type: none"> • Engineering • International Trade and Transportation • Marine Business and Commerce • Marine Environmental Science
Students	<ul style="list-style-type: none"> • Institution size: 1,823 (1,661 undergraduates) • 57.6% of applicants admitted; 72% in-state; 28% out-of-state • First Year Student Retention: 76% • 4-Year Graduation Rate: 26% • 6-Year Graduation Rate: 47% • Average GPA 3.2
Financial Aid	<ul style="list-style-type: none"> • Cost: \$21,882 (in-state); \$31,132 (out-of-state) • Financial Aid: Federal Pell Grant, SMART Grant, Tuition Assistance Program (TAP), Federal Academic Competitiveness Grant (AC Grant) • 77% of students receive aid on average \$5,567 grants; \$7,139 loans • 2012 Endowment: \$3,348,457

For more information, visit: www.sunymaritime.edu

Texas A&M University at Galveston (Texas Maritime Academy, Galveston, Texas)

Mission: Texas A&M University at Galveston is a state run special-purpose institution of higher education for undergraduate and graduate instruction in marine and maritime studies in science, engineering and business and for research and public service related to the general field of marine resources.

Accreditation	<ul style="list-style-type: none"> • Commission on Colleges of the Southern Association of Colleges and Schools (SACS) • Engineering Accreditation Commission • Engineering Technology Accreditation Commission • Accreditation Board for Engineering and Technology
Programs Offered	<p>Undergraduate</p> <ul style="list-style-type: none"> • Marine Engineering Technology • Marine Transportation • Maritime Systems Engineering • Maritime Administration • Maritime Studies <p>Graduate</p> <ul style="list-style-type: none"> • Master of Marine Resources Management (MARM) • Master of Maritime Administration and Logistics (MMAL)
Students	<ul style="list-style-type: none"> • Total enrollment: 2,035 (1,952 undergraduates) • Science and Engineering Majors number 75% of student body • 55% of applicants admitted • Transfer Out Rate: 61% • 4-Year Graduation Rate: 16% • 6-Year Graduation Rate: 29%
Financial Aid	<ul style="list-style-type: none"> • Costs: \$17,695 (\$26,119 out-of-state) • 65% receive financial aid on average \$6,607 in grants; \$6,207 in loans • Limited state funding including via Student Incentive Payment (SIP) program

For more information, visit: www.tamug.edu/corps

U.S. Merchant Marine Academy, Kings Point, New York

Mission: To educate and graduate licensed merchant mariners and leaders of exemplary character who will serve America's marine transportation and defense needs in peace and war.

Accreditation	<ul style="list-style-type: none"> • Middle States Commission on Higher Education (MSCHE)
Programs Offered	<ul style="list-style-type: none"> • Marine Transportation • Marine Engineering • Marine Engineering Systems • Marine Engineering and Shipyard Management • Maritime Operations and Technology • Logistics and Intermodal Transportation
Students	<ul style="list-style-type: none"> • Institution Size: 1,034 (1,011 undergraduates) • 12.4% of applicants admitted • First Year Student Retention: 97% • 4-Year Graduation Rate: 67% • 6-Year Graduation Rate: 80% • Average GPA 3.6
Financial Aid	<ul style="list-style-type: none"> • Cost: \$7,464 increasing to \$9,768 by 2017 • Financial Aid: Federal Pell Grant, Federal Iraq and Afghanistan Grant (IASG) • 35% of students receive financial aid • Total Annual Financial Aid: \$129,668; Average grant \$3,705; loan \$3,980

Appendix B: Logistics Training Programs and Facilities

I. Railroad Training

In general, federal and international regulations require specific training to fill rail-related occupations. For instance, the Federal Railroad Administration has issued extensive certification and licensing requirements for locomotive engineers and conductors. Engineers and conductors in the United States must be certified pursuant to the provisions of Part 240 (engineers) and Part 242 (conductors) of Title 49 of the Code of Federal Regulations (49CFR Part 240 and 49CFR Part 242). Under these rules, each railroad must have in place an FRA-approved certification program. An individual railroad's certification program must meet minimum federal safety requirements for the eligibility, training, testing, certification and monitoring of its locomotive engineers and conductors.

Institution	CSX Railroad Education & Development Institute
Location	Atlanta, Georgia
Affiliations	CSX and its logistics partners/customers
Overview	The CSX Railroad Education & Development Institute (REDI) is a private railroad trade school for conductors offered in Atlanta, Georgia. The school is sponsored by the CSX Transportation railroad company. To qualify for the program, applicants must pass a preliminary employment screening qualification process through CSX that includes a criminal background check. Students must have a high school diploma or GED to apply. The program lasts around six weeks and requires full-time study. Provides a variety of transportation, mechanical, engineering, and maintenance courses to CSX employees and all railroad-related industries, customers and users.
Website	www.csxt.com
Programs Offered	<ul style="list-style-type: none"> • Railroad basics • Locomotive Operations • Safety • Airbrakes and Train Handling • Signaling • Equipment Handling • Radio Communications • Switching • Conductor • Engineer • Inspection • Hazmat Training • Recertification <p>Management Training: As a Management Trainee or Leadership Development Associate, students begin their program either with a one-week orientation in</p>

	Jacksonville, Fla., or at the Railroad Education & Development Institute in Atlanta. Following orientation, they begin a rotational assignment. Most of the Leadership Development Program rotations take place at CSX's headquarters in Jacksonville, while the Management Training Program takes place at any of the many CSX field operations locations, including: Albany, NY; Atlanta, GA; Baltimore, MD; Huntington, WV; Florence, SC; Louisville, KY; Chicago, IL; Indianapolis, IN; and Nashville, TN.
Facilities and Equipment	85,000-square-foot facility (covering 9 acres) adjacent to Tilford Yard (Atlanta); providing classroom and hands-on training. Welding shop, locomotives and rolling stock, simulators, signal systems, crossing equipment for training purposes.
Enrollment	3,500 annual enrollments (various courses and training programs)
Tuition/ Training Costs	The training school is free to those accepted, but students must agree to work for CSX after graduation and to continue their training on the job with 16 weeks of additional hands-on training.

Institution	Michigan State University Railway Management Program
Location	Coursework travels from week to week: East Lansing, MI; Pueblo, CO; Chicago, IL; Jacksonville, FL
Affiliations	Michigan State University Progress Rail Equipment Leasing
Overview	Michigan State University Railway Management Program was created to provide the necessary education associated with railroad operations and management. The program covers many topics associated with railroad operations and management. These topics include a thorough working familiarity of internal operations, financial considerations, and customer service requirements that will enable fact based decision making. All of these topics are crucial to a successful railroad; however the program has identified company leadership as the most important topic covered. On completion of the program the students will be able to make decisions on complex issues, achieve measurable results, and develop leadership capacity resulting in overall efficiency and profitability.
Website	http://www.raileducation.com/
Programs Offered	<ul style="list-style-type: none"> • Certificate Course in Railway Management
Facilities and Equipment	The course consists of four weeks of classroom and field experiences, linked to on-line sessions with an assigned instructor who will be responsible for mentoring the learning experience.
Enrollment	25-30 students per session
Tuition/ Training Costs	\$15,000

Institution	Michigan Tech Rail Transportation Program
Location	Houghton, Michigan
Affiliations	Michigan Tech, CN, Union Pacific Railroad, Norfolk Southern Railroad

Overview	<p>The RTP was formed to provide the foundation for all the activities in the field with an objective of making rail transportation a permanent part of the university curriculum.</p> <p>In the fall of 2007, Michigan Tech officially established the Rail Transportation Program within the Michigan Tech Transportation Institute (MTTI) as a central entity for rail activities.</p> <p>The RTP provides the foundation for all the activities in the field and has become a permanent part of university curriculum and research. The RTP has three integrated components: events & extracurricular activities, projects & research, and education</p>
Website	http://www.rail.mtu.edu/ http://www.rail-learning.mtu.edu/
Programs Offered	<ul style="list-style-type: none"> • Certificate in Rail Transportation (under development) • Four courses offered: <ul style="list-style-type: none"> ○ Railroad Engineering ○ Rail Transportation Seminar ○ Public Transit Planning and Engineering ○ Railroad Track Engineering and Design
Facilities and Equipment	Institutional classroom and laboratory facilities within the Michigan Tech campus
Enrollment	Approximately 876 degrees granted in 2012
Tuition/ Training Costs	<ul style="list-style-type: none"> • Michigan Resident \$26,375 (total estimated cost) • Nonresident – \$41,255 (total estimated cost)

Institution	Mordoc Railroad Academy
Location	Marion, Illinois
Affiliations	none
Overview	Modoc Railroad Academy is a non-profit school and claims it is the only school of its kind in the country. Founded in 1995, over 600 people have graduated from their program and work on railroads across the country.
Website	http://www.modocrailroadacademy.com
Programs Offered	<ul style="list-style-type: none"> • Conductor Program • Engineer Program • Independent Engineer Recertification Program
Facilities and Equipment	Modoc Railroad Academy uses a combination of classroom, dynamic locomotive simulator and new locomotive training,.It has its own operating railroad used for the exclusive student use. Students learn practical and real world hands on experience with boxcars, flatcars and various other types of school owned rail cars. Instructors often set up various railroad problems and scenarios for students to solve in a safe and controlled environment.
Enrollment	35 students per program session
Tuition/ Training Costs	Conductor class - \$6,892 Locomotive Engineer class - \$21,992 The total cost for a new Locomotive Engineer student is \$28,884. (\$6,892 plus \$21,992, conductor classes plus engineer class)

Institution	The National Academy of Railroad Sciences (NARS)
Location	Overland Park, Kansas
Affiliations	<ul style="list-style-type: none"> • Burlington Northern Santa Fe Technical Training Center (http://www.bnsf.com/communities/safety-and-security/safety-and-technical-training/) • Johnson County Community College (http://www.johnstoncc.edu/railroad)
Overview	<p>Founded in 1988, NARS trains individuals seeking to join the industry, current employees of Class-I and short line railroads and people who work around or with railroad facilities in other industries. NARS is a collaborative partnership between Johnson County Community College (JCCC) and BNSF Railway.</p> <p>NARS provides employee training and certification to the North American rail industry, and is also a training provider for the American Short Line Regional Railroads Association.</p>
Website	http://www.railroadtraining.com/
Programs Offered	<ul style="list-style-type: none"> • Railroad Conductor Training • Freight Carman Training • Locomotive Electrician Training • Locomotive Mechanical Training • Signal Systems Training • Railroad Welder
Facilities and Equipment	<p>Facilities occupy 130,000 square feet of office, classroom, laboratory and multimedia studio space within the Johnson County Community College (JCCC) campus in order to teach basic and advanced skills to potential new employees and current railroad employees in virtually every industry craft.</p> <p>Students are exposed to laboratory conditions and simulated situations that duplicate on-the-job requirements. Each craft has its own extensive facilities, laboratories, equipment and resources:</p> <ul style="list-style-type: none"> • Conductors learn and practice skills in an outdoor train yard, complete with various types of operating locomotives and freight cars. • Mechanical employees train in workshops, including a freight car lab, locomotive lab, and locomotive electrical. Each lab is fully equipped to provide hands on experience with mechanical and electrical components of cars and engines. • Maintenance and engineering crews work on an open air track lab outfitted with rails and ties. This area also has a fully operative locomotive crane. • Signal operators train on the actual signals, electronic switches and computer apparatus they will install and service in the field. • Telecommunications specialists learn and practice on the precise equipment they will encounter on the job. <p>NetSim, a network of locomotive simulators placed in satellite locations across the country is offered through NARS.</p>
Enrollment	In 2013 NARS trained over 450 people. The majority of students are already in the industry or with a company closely connected to the railroad industry. 23% of the students were training to begin a future railroad career.

Tuition/ Training Costs	<ul style="list-style-type: none"> For industry students, the average cost is \$1,500 per week. The large majority of classes are one week long. For non-industry students the cost is around \$6,000 for a 6-week class. The 6-week classes are Conductor and Signal training.
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Institution	Okefenokee Technical College
Location	Waycross, Georgia
Affiliations	none
Overview	<p>The Locomotive Mechanical Systems certificate is designed to prepare students to work as mechanical technicians in the rail industry with specific knowledge and skills for diesel/electric locomotives. Upon completion of this technical certificate of credit students will be trained for entry-level positions in the rail industry as locomotive mechanical technicians.</p> <p>The Locomotive Electrical Systems certificate is designed to prepare students to work as electrical technicians in the rail industry with specific knowledge and skills for diesel/electric locomotives. Upon completion of this technical certificate of credit students will be trained for entry-level positions in the rail industry as locomotive electrical technicians.</p>
Website	http://www.okefenokeetech.edu
Programs Offered	<ul style="list-style-type: none"> Locomotive Electrical Systems Locomotive Mechanical Systems
Facilities and Equipment	Training programs combine classroom instruction, laboratory practice, and practicum experience to assure that students obtain the most current skills required by their chosen profession.
Enrollment	Over 2,000 students enrolled in all programs
Tuition/ Training Costs	\$85/credit hour. Certificate programs range from 16-18 hours (\$1,360-\$1,530)

Institution	RailTEC
Location	Urbana, Illinois
Affiliations	University of Illinois at Urbana-Champaign
Overview	The University of Illinois at Urbana-Champaign (UIUC) Rail Transportation and Engineering Center's (RailTEC) mission is rail education through excellence in rail teaching, research and public service. By teaching courses and offering a curriculum in rail engineering and transportation, RailTEC seeks to educate, inspire and mentor future leaders of the rail transportation profession and society that are prepared to meet 21st Century challenges in a global economy. RailTEC also seeks to make students of other civil engineering disciplines aware of rail design requirements so that they can better interface with and utilize the rail mode in their future design careers.
Website	http://ict.uiuc.edu/railroad
Programs Offered	<ul style="list-style-type: none"> Bachelors, Masters and PhD degrees offered;

	<ul style="list-style-type: none"> Railroad Engineering Program represents 10 courses within the Department of Civil and Environmental Engineering
Facilities and Equipment	Institutional classroom and laboratory facilities within the University of Illinois at Urbana-Champaign
Enrollment	Approximately 200 bachelors, 150 masters and 22 PhDs earned annually in the College of Engineering/Civil and Environmental Engineering program
Tuition/Training Costs	Total Estimated Costs: <ul style="list-style-type: none"> Resident \$29,594-\$34,514 Non-resident \$43,976-\$48,896

Institution	Sacramento City College
Location	Sacramento, California
Affiliations	None
Overview	This program is designed for students pursuing a career as a Railroad Conductor, Engineer, or Manager of Train Operations. Railroad Operations is a 19-unit, six-course program, taking approximately 12 months to complete. To achieve an Associate in Science Degree, a total of 60 units must be completed (including the 19 within the program)
Website	http://www.scc.losrios.edu/Documents/catalog/programs/RAILR.pdf
Programs Offered	<ul style="list-style-type: none"> Railroad Operations Associate in Science Degree Railroad Operations Certificate of Achievement
Facilities and Equipment	Institutional classroom and laboratory facilities, including internship working with locomotives and rolling stock.
Enrollment	
Tuition/Training Costs	Tuition and fees: \$1,104 Books and supplies: \$1,656

Institution	The University of Tennessee Center for Transportation Research
Location	Varies by offering: Knoxville, TN and Chattanooga, TN
Affiliations	<ul style="list-style-type: none"> The University of Tennessee (http://www.utk.edu/) Tennessee Chapter, American Public Works Association (http://tennessee.apwa.net/) Tennessee Section, Institute of Transportation Engineers (http://www.tsite.org/) Tennessee Department of Transportation (http://www.tdot.state.tn.us/)
Overview	The Center for Transportation Research was created in 1970 to foster and facilitate interdisciplinary research, public service, and outreach in the field of transportation at The University of Tennessee, Knoxville. It began full-time operations in 1972 and since then has contributed greatly to the overall research program of the university. As a research center under the auspices of UT's College of Engineering, CTR

	<p>oversees various programs associated with the education, research, training, and workforce aspects of the transportation field.</p> <p>Tennessee Transportation Assistance Program (TTAP) provides training, technical assistance and technology transfer materials to all cities and counties across Tennessee. TTAP is staffed to provide local roadway agencies with direct technical assistance on highway and traffic engineering issues. Thus, TTAP serves as a sort of extension service for small town and rural county highway agencies. One of TTAP's major functions is to provide training workshops and short courses that address the needs of local transportation agency staff and other transportation professionals.</p>
Website	http://ctr.utk.edu/ http://ctr.utk.edu/ttap/
Programs Offered	<ul style="list-style-type: none"> • Railroad Track Inspection & Safety Standards • Timber & Steel Railroad Bridges
Facilities and Equipment	Trainings occur in the classroom and in the field
Enrollment	Limited to 25-30 students per training, depending on facility accommodation
Tuition/ Training Costs	Range from \$500-\$700 per course

II. Air Cargo Training

Institution	International Air Transport Association (IATA) Training and Development Institute (ITDI)
Location	12 global locations, including 1 in the U.S. (Miami, FL)
Affiliations	Academic partnerships with Nanyang Technical University, Stanford University and University of Geneva; multiple training partners
Overview	<p>The IATA Training and Development Institute (ITDI) is a private aviation training institution specializing in air transport operations and business disciplines. As the training body within IATA (the International Air Transport Association), ITDI's services support aviation initiatives and priorities to improve international standards.</p> <p>ITDI operates training centers in 12 countries and coordinates a network of more than 250 training partners worldwide.</p> <p>Founded in 1990, ITDI now employs 40 full-time staff and 200 part-time instructors.</p>
Website	http://www.iata.org/
Programs Offered	<p>ITDI curriculum covers several sectors of the aviation industry, including:</p> <ul style="list-style-type: none"> • Air Navigation Services • Airline Operations and Management • Airport Operations and Management • Aviation Regulations and Law • Aviation Quality • Cargo Operations • Civil Aviation • Ground Services • Safety and Security • Business and Leisure Travel <p>Courses are generally intensive, lasting between 2 and 5 days, and are open to the general public at all professional and academic levels.</p>

Facilities and Equipment	Training delivered in the classroom, “in-company training” on-site, and via distance learning
Enrollment	Over 35,000 aviation professionals annually
Tuition/ Training Costs	Varies by course and offering.

Institution	Arizona State University, Department of Aeronautical Management Technology
Location	Mesa, Arizona
Affiliations	ExpressJet Airlines, Delta Airlines
Overview	ASU’s air traffic management program offers students exceptional training and state-of-the-art facilities in the field of aviation. Students learn air traffic control procedures and operations in tower, Terminal Radar Approach Control (TRACON) facilities and en route environments. Students learn the skills needed to be dispatchers for airlines and controllers with the Federal Aviation Administration, among other career possibilities.
Website	http://innovation.asu.edu/degrees-programs
Programs Offered	<ul style="list-style-type: none"> • Air Traffic Management • Air Transportation Management • Aviation Management & Human Factors
Facilities and Equipment	Classroom and Laboratory Setting, situated at ASU’s Polytechnic campus and adjacent to Phoenix-Mesa Gateway Airport
Enrollment	Limited space, program selection is academically competitive
Tuition/ Training Costs	<ul style="list-style-type: none"> • Arizona Resident Tuition and Fees: \$9,654 (annually) • Non-Resident Tuition and Fees: \$21,940(annually)

Institution	FAA Academy
Location	Oklahoma City, Oklahoma
Affiliations	FAA University
Overview	<p>The FAA Academy provides technical and managerial training and development for our workforce and the aviation community. Since courses have different admissions criteria, prospective participants are admitted on a course-by-course basis. Certain courses may not be open to the general public, but many courses are available to other government agencies, industry, and international civil aviation authorities.</p> <p>The new FAA University offers courses for external customers on a fee-for-service basis to develop and expand the skills necessary to propel managers into high performance leadership roles. In the future, the FAA plans to seek viable vendors with which to partner to perform the learning services contract. The FAA intends to post a solicitation to seek vendors capable of competing for the new contract and select a vendor for the training and delivery component of the FAA University.</p>
Website	http://www.faa.gov/about/office_org/headquarters_offices/arc/programs/academy/
Programs Offered	<ul style="list-style-type: none"> • Air Traffic • Airports • Regulatory Standards • Security & Hazardous Materials • Training Services Support • Technical Operations

Facilities and Equipment	Classroom, in-the field, and computer-based instruction is offered. Academy training utilizes the latest instructional systems and techniques that take full advantage of training equipment which duplicates or simulates operational facilities and the field environment.
Enrollment	On a daily basis, approximately 1,000 students are in attendance
Tuition/ Training Costs	Varies by course and offering. Fees for each course are categorized by “Per Student Base Price”, “Per Student Non-FAA” and “Per Student International” and range by approximately 30% from “Base” to “International”.

Institution	Cargo Training International (CTI)
Location	Houston, TX, with courses provided throughout the country. (Headquarters located in Shepperton, UK)
Affiliations	None
Overview	Established in 1992, Cargo Training International (CTI) is approved by the UK Civil Aviation Authority to undertake training courses for the carriage of dangerous goods by air, including radioactive materials and infectious substances. In addition CTI offers training in the carriage of dangerous goods by road and sea. Head Office location is close to Heathrow Airport (London), and the USA office is based in Houston, Texas. CTI offers an extensive public training schedule both in the UK and USA, and is able to quote for in-house training for any location worldwide. All students who pass the examinations are registered as internationally approved to sign for dangerous goods consignments.
Website	http://www.cargotraining.com/
Programs Offered	Dangerous Goods Courses - USA Schedule: <ul style="list-style-type: none"> • Dangerous Goods by Air – 3 day course • Dangerous Goods by Air - – 2 day course • Dangerous Goods Multimodal - 5 day course • IMDG - Dangerous Goods By Sea - 2 day course • IMDG - Dangerous Goods By Sea – 1 day course • DOT 49 CFR - Full Course – 2 day course • DOT 49 CFR - Recurrent – 1 day course • Radioactive Materials by Air – 2 day course
Facilities and Equipment	Classroom based training; online courses also available
Enrollment	Varies by location and offering
Tuition/ Training Costs	Fees range in cost from \$410 to \$1,300 per course.

III. Trucking and Intermodal Equipment Training

Institution	Roadmaster
Location	Jacksonville, Orlando and Tampa, FL; 9 other US locations
Affiliations	Career Path Training Corporation (www.careerpathtraining.com)
Overview	Roadmaster Drivers School's is a cdl training company that provides experienced truck driving school instructors and offers students comprehensive cdl classes and behind the wheel truck driving education so they are fully prepared to start their new job in the trucking industry. By focusing on giving students the best education and maintaining high job placement standards, Roadmaster has gained a national

	reputation in the trucking industry for quality training of entry-level commercial truck drivers.
Website	http://www.roadmaster.com/
Programs Offered	CDL Training for Class A or Class B license 3 and 8 week programs, hands on training (160 hours of instruction)
Facilities and Equipment	All Roadmaster truck driving school locations have administrative offices, spacious classrooms, and computer labs. The schools maintain specially designed field-driving courses where students practice backing, coupling, uncoupling, docking and driving a truck. Roadmaster truck driving school provides equipment for Commercial Driver Licensing (CDL) testing at all locations. Roadmaster owns a fleet of late model tractor-trailers used exclusively for student training.
Enrollment	2-6 per truck (size varies by location and available equipment)
Tuition/ Training Costs	Approximately \$5,000

Institution	Truck Driver Institute
Location	Milton and Sanford, FL (12 locations throughout the U.W.)
Affiliations	Various carrier partners (offer financial incentives for student commitment/ recruitment through employer tuition assistance programs): H.O. Wolding, TMC Transport, Werner, Stevens Transport, Schneider, Cypress Truck Lines, KLLM
Overview	Founded 1973, private CDL training and trucking company
Website	www.drivebigtrucks.com
Programs Offered	3-week CDL preparation: Courses are a mixture of classroom and behind-the-wheel training to ensure students leave the training facilities with the skills, knowledge and experience that major transportation companies are looking for from their rookie drivers
Facilities and Equipment	12-acre facility with classroom and behind-the-wheel supervised driving with late-model tractor-trailer combinations
Enrollment	Approximately 200 students per month throughout the 12 locations
Tuition/ Training Costs	\$5,895

Institution	South Florida Community College
Location	Avon Park, FL
Affiliations	none
Overview	SFCC was established in 1965 by the Florida Legislature to serve the educational needs of Highlands and Hardee counties. The College began operation in August 1966 in temporary facilities provided at no cost to the State by public-spirited citizens of the City of Avon Park. The facilities were renovated, air conditioned, and partly furnished through the voluntary contributions of many interested individuals and organizations in both Highlands and Hardee counties and by the municipalities of Avon Park, Bowling Green, Lake Placid, and Sebring. In 1984, South Florida Junior College became known as South Florida Community College. Today, SFCC has three

	campuses and several off-site centers, including the Highlands, Hardee, and DeSoto campuses, and Lake Placid Center. In 2003, the College opened the Hardee and DeSoto campuses to give residents of those counties easier access to a college education
Website	http://www.southflorida.edu/
Programs Offered	Commercial Vehicle Driving: This program prepares students for entry level into the job market. Students learn vehicle systems, D.O.T. rules and regulations, safety, logs and other legal topics of interest to trucking and transportation. Students also learn safe operation, Smith System (five principles of defensive driving), cargo handling, hazardous materials, personal finances, business math, and public and employer relations. Students receive extensive hands-on experience in emergency equipment, safe operations, and preventive maintenance. This course will prepare students for the C.D.L. examination. The CDL Exam is administered by SFSC as part of the program.
Facilities and Equipment	“State of the art” facilities and equipment
Enrollment	General vocational education, limited to classroom size and vehicle availability
Tuition/ Training Costs	Commercial Vehicle Driving Program: <ul style="list-style-type: none"> • In-state resident tuition: \$935 • Out-of-state resident tuition: \$3,737 • Vocational Supplemental Fee: ~\$2,500

Institution	Pinellas Technical Education Centers
Location	St. Petersburg, FL
Affiliations	none
Overview	PTEC offers numerous technical programs and short-term training. Evaluating the needs of industry is a continuous process, and programs are established to satisfy industry’s training requirements. The centers are public, co-educational and equal opportunity facilities legally authorized by the School Board of Pinellas County and the Florida State Department of Education to provide occupational education beyond high school. Pinellas Technical Education Centers are committed to providing quality educational opportunities that meet the changing labor force needs of business and industry.
Website	www.mypotec.org
Programs Offered	Commercial Vehicle Driving: This program consists of one course and includes classroom, five weeks of range driving, and 1,000 miles of hands-on road driving on a variety of roads and conditions. Content includes D.O.T. safety regulations, understanding and complying with vehicle operation regulations, cargo handling and trip planning, vehicle inspection, maintenance and servicing, basic vehicle control procedures and basic vehicle maneuvers. Upon satisfactory completion of all requirements, students will be tested on-site for their Class A Commercial Drivers License (CDL). Those passing will obtain their license from the Department of Motor Vehicles office. Commercial Class “B” Driving: This program consists of one course and includes four weeks of driving range/classroom, and 200 miles of hands-on road driving on a variety of roads and conditions. Upon satisfactory completion of all

	<p>requirements, students will be tested on-site for their Class “B” Commercial Drivers License (CDL). Those passing will obtain their license from the Department of Motor Vehicles office.</p> <p>Medium and Heavy Duty Truck and Bus Technician (Planned sequence of Courses)</p> <ul style="list-style-type: none"> • Diesel Engine Mechanic/Technician Helper • Diesel Electrical and Electronics Technician • Diesel Engine Technician • Diesel Brakes Technician • Diesel Engine Preventive Maintenance Technician • Diesel Heating and Air-Conditioning Technician • Diesel Steering and Suspension Technician • Diesel Drive Train Technician • Diesel Hydraulics Technician
Facilities and Equipment	Classroom, lab and in-the-field supervised driving
Enrollment	General vocational education, limited to classroom size and vehicle availability
Tuition/Training Costs	<p>Commercial Vehicle Driving Program:</p> <ul style="list-style-type: none"> • In-state resident tuition: \$935 • Out-of-state resident tuition: \$3,748 • Course Fee: \$2,390 <p>Class B Program:</p> <ul style="list-style-type: none"> • In-state resident tuition: \$438 • Out-of-state resident tuition: \$1,757 • Course Fee: \$900 <p>Medium and Heavy Duty Truck and Bus Technician: \$10,305</p>

Institution	Mid Florida Tech
Location	Orlando, FL
Affiliations	Orange County Public Schools
Overview	Training includes operation of trucks and tractor-trailer vehicles handling cargo, reporting delays or accidents on the road and record keeping, communication and leadership skills, mathematical skills, human relations and employability skills, and safe and efficient work practices.
Website	http://www.ocpstechcenters.net/
Programs Offered	Commercial Vehicle Driving (Class A and B CDL preparation)
Facilities and Equipment	Classroom and in-the-field supervised training
Enrollment	General vocational education, limited to classroom size and vehicle availability
Tuition/ Training Costs	<p>Class A Program:</p> <ul style="list-style-type: none"> • In-state resident tuition: \$896 • Out-of-state resident tuition: \$3,581 • Class A Fee - \$2,149 <p>Class B Program:</p>

	<ul style="list-style-type: none"> • In-state resident tuition: \$420 • Out-of-state resident tuition: \$1,689 • Class B Fee – \$1,153
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Institution	Indian River State College
Location	Fort Pierce, FL
Affiliations	SAGE Corporation
Overview	The Commercial Vehicle Driving program prepares students for entry-level employment as a truck driver. The program focuses on safety issues, federal rules and regulations, private one-on-one driver training instruction, acquiring class "A" CDL License, and local or over-the-road job placement.
Website	http://www.irsc.edu/
Programs Offered	Career Training Certificate in Commercial Vehicle Driving. Practice tests and study for Class A and B permits, HAZMAT, Doubles/Triples and Tanker Endorsements.
Facilities and Equipment	160 hours of classroom, lab and driving experience; plus 160 hours of on-the-job training (over 1,000 miles of supervised driving).
Enrollment	General vocational education, limited to classroom size and vehicle availability
Tuition/ Training Costs	Course Fee: \$4,004 plus general college fees of \$2,560 (320 hours at \$8/contact hour)

Institution	Florida Coast Career Tech
Location	Jacksonville, FL
Affiliations	Florida State College at Jacksonville
Overview	Florida Coast Career Tech provides technical job skills necessary for an active career and a high wage quality of life. The FCCT philosophy promotes an active education — working in the most technologically advanced training labs available — and learning by doing. Job training linked directly to the hiring needs of Jacksonville area employers and partnerships with business and industry gives students the best opportunity to convert affordable training into a paycheck.
Website	http://www.floridacoastcareertech.org/programs/view/truck-driving
Programs Offered	8-week program, including training on: <ul style="list-style-type: none"> ▪ Florida Class A Commercial Driver's License Rules ▪ Tractor-Trailer Operations ▪ Air Brakes ▪ Combination Vehicles ▪ Vehicle Design, Inspection and Preventive Maintenance ▪ DOT Inspections ▪ Driving in Adverse Conditions ▪ Backing, Parking and Docking ▪ Shifting Techniques
Facilities and Equipment	Classroom learning: safety procedures, truck maintenance and state and federal regulations at the school's Cecil Center.

	Use a state-of-the-art truck simulator to learn driving basics. Then move to hands-on instruction receiving at least 800 miles of actual driving experience in various road and weather conditions..
Enrollment	General vocational education, limited to classroom size and vehicle availability
Tuition/ Training Costs	\$2,500

Institution	College of Central Florida
Location	Ocala, FL
Affiliations	Capella University, Florida State University, Saint Leo University, University of Central Florida, University of Florida, and Webster University
Overview	The purpose of this program is to prepare students for employment as tractor trailer/truck drivers. This program also provides supplemental training for persons previously or currently employed in these occupations. The course content includes operation of large semi-truck tractor vehicles, loading and unloading cargo, reporting delays or accidents on the road, verifying load against shipping papers, record keeping, and federal and state motor carrier and safety regulations.
Website	http://www.cf.edu
Programs Offered	Commercial Vehicle Driving (Postsecondary Adult Vocational Certificate Program)
Facilities and Equipment	Classroom and in-the-field training (320 clock hours of instruction)
Enrollment	Course is offered each academic year; limited class size
Tuition/ Training Costs	Course Fee: \$3,056 plus general college fees: <ul style="list-style-type: none"> • Resident: \$920 • Non-resident: \$3,666

Institution	Bradford-Union Area Career Technical Center
Location	Starke, FL
Affiliations	none
Overview	Bradford-Union Technical Center offers both Class "A", Class "B", and third party testing/training. Programs offer a sequence of courses that provide coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Transportation, Distribution and Logistics career cluster. The content includes: Loading and unloading cargo; reporting delays or accidents on the road; verifying load against shipping papers; and keeping records. The course content should also include instruction in human relations, leadership, communication, and employability skills, and safe, efficient work practices.
Website	http://www.bradfordvotech.com/course/commercialvehicle
Programs Offered	<ul style="list-style-type: none"> • Class "A" - Tractor Trailer Truck Driver - 320 Total Hours • Class "B" - Truck Driver Heavy Florida - 150 Total Hours

	In the field, students work on basic driving skills, handling equipment, dealing with various transmissions, backing, docking, and handling. Driving consists of city, day, and night driving. Classes last eight weeks: Monday, Tuesday, Wednesday, Thursday – 7:30 a.m. to 5:30 p.m.
Facilities and Equipment	Classroom and in-the-field training
Enrollment	http://www.bradfordvotech.com/course/commercialvehicle
Tuition/ Training Costs	<ul style="list-style-type: none"> • Class "A" Tuition is approximately \$889.60 plus textbooks, fees, and expenses. • Class "B" Tuition is approximately \$417.00 plus textbooks, fees, and expenses.

IV. Maritime Training Programs and Initiatives Outside Florida

- The state of Georgia has acknowledged the workforce training and education needs and opportunities to support the growing maritime and logistics industry. The **Georgia Center of Innovation for Logistics**, part of the Georgia Department of Economic Development, published a report with a focus on the current and future demand and supply of well-trained and skilled workforce in Georgia. The report identified solutions for increasing workforce supply, including earlier introduction to the industry at all educational institutions, i.e., high schools, technical schools and colleges, and internship programs providing real-world experience in the industry. These solutions are already in practice in Savannah through the Maritime Logistics Education Taskforce (MLET), a partnership of the Propeller Club, Port of Savannah, Savannah Traffic Club, Savannah Maritime Association, International Freight Forwarders and Customs Brokers Association (IFFCBA), Council of Supply Chain Management Professionals (CSCMP) and the Navy League Savannah Council. The MLET works with industry professionals and local high schools to provide hands-on internships.
- With the recent expansion of the Port of Charleston to the former U.S. Navy complex in North Charleston, the **South Carolina Ports Authority, the City of North Charleston and Lowcountry Alliance for Model Communities** developed a community mitigation plan (CMP). Included in the CMP's eight-point plan, a Maritime Training Institute (Career Center) was identified as an opportunity to "realize positive community impacts from Port expansion." The plan calls for development of a training institute in the area, collaboration with other appropriate initiatives and coordination with SC Works Trident Centers, which connect employers with skilled workforce throughout the state.
- The **Southeast Maritime and Transportation (SMART) Center**, a National Science Foundation Advanced Technological Education (NSF ATE) Center, works closely with its industry and education partners to develop, facilitate and promote workforce research, partnerships and training programs for the maritime and transportation industry. Among the SMART Center's accomplishments are the development of the Associate of Applied Science degree in maritime technologies at Virginia's Tidewater Community College and resources for K-12, middle and high school educators are among the center's other accomplishments. Additionally, SMART has begun building a web-based repository of maritime transportation information and resources for educators and industry employers.

- **Alabama Industrial Development Training (AIDT)** is an independent agency under the supervision and oversight of the Alabama Secretary of Commerce, and encourages economic development through job-specific training. Training services are offered in many areas, at no cost, to new and expanding businesses throughout the State. Considered Alabama’s No. 1 workforce development incentive,
 - AIDT is consistently ranked as one of the Top 10 workforce agencies in the United States and recognized internationally for its ISO-certified training program. AIDT provides a turnkey approach with customized pre-employment recruiting, screening, training and assessment. AIDT follows up with training in leadership and managerial development as well as offering process improvement assessments.
 - The Maritime Training Center is a subsidiary of AIDT. This facility was designed to meet the growing demand for industrial-related training for southern Alabama. The intent is to provide job-seekers with the qualifications and skills to join the growing maritime industry, as well as meet the needs of related industries throughout Alabama. The training center is a multipurpose training and education facility, featuring high-bay welding shops, classrooms and a computer lab.
- The **University of New Orleans School of Naval Architecture and Marine Engineering** offers a rigorous Bachelor of Science degree program in engineering to supply a well-educated workforce for the perpetuation and advancement of the maritime industry. The program includes foundational coursework and advanced courses with emphasis in maritime design of boats, ships or offshore structures.
- **Seattle Central Community College’s Seattle Maritime Academy** provides vocational education, technical training and licensure preparation, which meet select needs of the industry. The level and scope of training offered is directed toward the following maritime sectors: commercial fishing, merchant marine and workboat industry. Training includes programs in marine deck technology and marine engineering technology.
- At the **Stevens Institute of Technology**, in Hoboken, New Jersey, the Schaefer School of Engineering and Science hosts one of the nation’s few but essential degree programs in naval engineering. World-class professors and facilities prepare students to design, build, operate and maintain ships and other waterborne vehicles and ocean structures. Areas of study include ship and hull design; propulsion systems; and effects of ocean properties on ship transport.
- The **University of Michigan** offers a naval architecture and marine engineering program of study, with a mission to be a world leader in the education of engineers in the application of engineering principles for the marine environment by providing a leading bachelor’s program in naval architecture and marine engineering, with emphasis on the conceptual design, engineering, manufacture and lifecycle management of marine vehicles, structures and complex systems and providing the leading graduate education and research program in engineering for the marine environment. The program has a stated purpose of providing leadership and service to the state (of Michigan), and the national and international marine communities.
- The University of Michigan is a charter member of the **Naval Engineering Education Center (NEEC)**. NEEC is a joint educational initiative between the United States Navy, and a consortium of 15 educational institutions in the United States. Its mission is to engage and develop the next generation of civilian engineers through project-based education, collaboration, and curriculum experience leading to civilian career opportunities with the U.S. Navy.

- **San Jacinto College** in Houston offers United States Coast Guard (USCG)-approved and internationally recognized STCW (Standards for Training, Certification and Watchkeeping) maritime training and deck-level coursework for all professional mariners from the entry-level deckhand on an inland towboat to Unlimited Tonnage Masters on the world's largest ships. Engineering courses are available from engine room fundamentals to QMED (Qualified Member of the Engineering Department), DDE (Designated Duty Engineer), to Chief Engineer. Their staff consists of USCG Approved Ship Masters, Chief Engineers, former U.S. Navy, Merchant Marine Officers and skilled technicians with more than a century of combined experience who, according to the school, make the learning experience both effective and enjoyable. Programs include maritime technology, as well as international business and logistics.
- The **University of Southern Mississippi's Center for Logistics, Trade and Transportation** provides a multidisciplinary approach to the study of the movement of goods and people through various modes of transportation that promote trade. Upon completion of the program, students receive a master's degree and a skill set in planning and strategy; operations, management and leadership; systems analysis and modeling; transportation and trade policy; and economic development.

Appendix C: International Programs

- **Apave Mare, Sibenik, Croatia**

Apave Mare, formerly known as AdriaMare Conulto, has been dedicated to maritime training since 1989. All courses have been approved by the Ministry of Croatia and the Republic of Panama Marine Survey & Certification & Certification Services Inc. Dynamic positioning simulator training is available, assisting professional seagoing personnel in securing compliance with requirements of STCW 1995, ISM Code, ISPS Code, SOLAS, MARPOL, 73/76 & Nautical Institute.

- **Split Ship Management, Split, Croatia**

Split Ship Management's maritime training center has partnered with Diverso Impex, providing courses both on Transas and Kongsberg bridge simulators. In-house facilities are used mainly for SSM personnel but are available for all students. Training courses range from deck and engineer officer entry to senior officer certificates and mandatory safety courses.

- **Hanseatic Marine Training School, Limassol, Cyprus**

Offers courses for ratings and short specialized courses for officers.

- **Hellenic Marine Training Center, Piraeus, Greece**

Founded in 1999 to provide maritime career-oriented education to seafarers with the issuance of certificates of competence as well as upgrading of certificates to the next level for all ranks of bridge, engine and deck personnel.

- **Panama Maritime Training Center, Piraeus, Greece**

Maritime training and certifications for seafarers of Panama-flagged vessels.

- **Piraeus Maritime Training Center, Piraeus, Greece**

Advanced maritime nautical education and maritime operation solutions.

- **QMS Maritime Training Center, Piraeus, Greece**

With more than 15,000 students since its inception, there are 50 courses offered for seagoing, retired mariners, shipping company shore staff, middle- and higher-level managers and executives for further professional development, through classroom, in-house and onboard fleet programs.

- **Seagull, As, Horten, Norway**

Provides Norwegian Directorate-approved classroom courses to meet maritime training requirements. Courses, for as little as \$2,020US, are developed in-house, in compliance with the current rules and regulations.

- **Ferriby Marine, East Yorkshire, United Kingdom**

Offers consultancy, quality assurance, training and auditing services to the maritime and other industries. Founded in 1990, Ferriby Marine offers training courses for ship companies and port facility security officers.

- **Videotel Marine International, London, United Kingdom**

Videotel Marine International offers courses in compliance with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW). Courses include: Maritime training course; maintenance and repair; marine engineering; emergency; occupational safety; medical care and survival; navigation, cargo-handling and stowage; electrical; electronic and control engineering; and radio communications. Maritime training is offered online.

- **S.T.A.R. Cetner Italia s.r.l., Castel Voltumo, Italy**

Offers 95 course for seafarers, with IMO STCW training courses for more than 20,000 students introducing them to careers of the sea. Courses have the latest in efficient technology in practical and theoretical courses. Provides shuttle service from Naples airport and local hotel.

- **Odessa Maritime Training Center, Odessa, Ukraine**

Founded in 1944, Odessa Maritime Training Center is one of the leading higher learning institutions for marine education, situated in Odessa, the seaport of Ukraine. With more than 8,000 cadets and students, there are 1,000 skilled specialists who graduate every year in the fields of merchant marine and various marine transportation disciplines. Offerings include four-year undergraduate and five-and-a-half-year specialist and master's programs. The facilities of automation, ship engineering, electromechanical and radio electronic facilities are accredited by commensurate United Kingdom institutes.

- **Australian Maritime College (AMC), Launceston, Tasmania**

Also known as Australia's Institute for Maritime Education, Training and Research, AMC is globally recognized for providing students with flexible course options, with opportunities for full-time, part-time and online distance study. According to AMC, whether it's captaining a vessel, safeguarding marine environments, designing advanced ocean engineering structures, farming seafood or keeping the world's goods moving, the college offers a wide range of courses, including vocational certificates at many levels, bachelor degrees and diplomas, as well as postgraduate certificates and degrees, including doctorates.

- **Lloyd's Maritime Academy, London, United Kingdom**

The Lloyd's name has been associated with shipping for more than 300 years and bills itself as the most trusted brand for professional development in the maritime industry worldwide. With more than 70 seminars offered on such diverse topics as law, insurance, finance, technology, environmental concerns, security, bunkering and management, the Lloyd's Maritime Academy, located in London, works with leading academic and industry bodies to provide accredited education and training. Accreditation is available at various levels, from short online-based certificate courses to fully academic-accredited diploma and postgraduate diplomas. The Masters of Business Administration in shipping and logistics is Lloyd's pinnacle offering.

- **The National Maritime College of Ireland (NMCI), in Ringaskiddy, County Cork**

The NMCI offers three-year degree courses in three areas – nautical science, marine and plant engineering, and marine electro-technology engineering – as well as a certificate in navigational studies (seamanship) which will suit those with experience of working aboard merchant ships or fishing vessels. Built under Ireland's public-private partnership scheme, the Cork Institute of Technology (CIT), Irish

Naval Service (INS) and Focus Education work hand-in-hand to ensure the validity of NMCI course offerings. This model allows the college management and teaching staff to concentrate on education while the private partner is responsible for services to the college and the maintenance of facilities.

Vocational education and training programs for landside port and inland terminal workers located throughout the world operate under differing financial and management schemes, but are all dedicated to offering high levels of training to ensure safe and efficient operations. For example, **Belgium's Training Centre for Dockworkers (OCHA)** emphasizes the initial training as well as continued education with both theoretical and practical course work for its dockworkers at the Port of Antwerp. Financed and managed by the port's employers association, OCHA serves the direct needs of the port's users and has resulted in fewer and less severe accidents over the lifetime of the program.

Appendix D: Interview Results

Leaders and stakeholders participated in an open-ended questionnaire to determine the construction of and future demand for an effective workforce. The following questions were asked of all participants (as applicable):

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?
2. Do you believe you will experience increased efficiency and safety with trained staff in your entry-level positions?
3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?
4. From which institutions do you hire?
 5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?
6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?
7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your organization’s needs as well?
8. Are tuitions typically paid for by the company or by the students from your industry?
9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured to meet your needs?

I. Cargo Industry Interviews

Name	Position	Company
David Armellini	President	Armellini Express Lines
Mark Baker	Director	S. Florida Container Terminal
Edward Bello	CEO	Port Miami Crane Management
Edward Corrigan	Manager Terminal Operations	Crowley Maritime Corporation
Jose Alberto Diaz	VP & GM	Florida International Terminal
Jeff Fiser	VP	Tropical Shipping Company
Kris Hopkins	Port Agent	Seafarers International Union
Raymond Jones		Florida East Coast Railway
Theresa Lewis	Vice President – Intermodal Services	Landstar
Chuck Maravolo (Referred by Carlos Arocha)	Director	Port of Miami Terminal Operating Company
Ken Roberts	Executive	Indian River Terminal; Indian River Marine
Fred Rogacki	President & CEO	International Warehouse Services
Jorge Roviroso	Executive VP	Fl. Stevedoring Inc.; Favori Shipping Co.

DAVID ARMELLINI
ARMELLINI TRUCKING /ARMELLINI EXPRESS LINES

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years.

There are not many trucking companies based in Florida, we generally do our training from within our company. There is not a pool here in Florida, there are not courses for students to take in the local colleges but schools are beginning to plan for the future with logistics' courses.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, if we had better trained talent, it would drive down costs and the company would save. Currently we spend funds on training staff. College kids want \$60/70,000 immediately when leaving college; they forget they don't know the industry, or, that they don't know basic policies and procedures of the company.

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional/management: In the next ten years I will be hiring C.F.O., C.E.O., Operations management, all top executives

Skilled/technical: In 10 years I will be replacing all my skilled labor - I.T., routing managers, dispatch managers, warehouse managers, logistical team, and accounting.

Semiskilled sector: Laborers, usually stay two years, shop personnel

4. Which institutions do you hire from?

Do not hire from any institutions

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No. Some state schools are now offering logistics degrees

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Some outside Florida. Usually get employees via the website or head hunters, some word of mouth.

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

I am aware of schools in Tennessee, New York, Georgia Tech have logistics schools

8. Are tuitions typically paid for by the company or by the students from your industry?

Usually no, but we do support employees going back to school. We pay 100% for "A" grade. 50% for "B" grade.

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

Certainly an Academy would be beneficial in providing well trained potential employees, which would mean more efficient running of the company, resulting in more revenue, less time spent in training in house.

Location. I would pick Fort Lauderdale or Orlando areas for the Academy.

NOTES: Armellini trucking service covers 48 states. All drivers are haz-mat certified. 24/7 dispatch service, GPS positioning every 15 minutes. All trucks have Qualcomm Omnivision providing instant communication between drivers and dispatch. Armellini Express is a Smartway Partner.....which is a public/private initiative between E.P.A. (Environmental Protection Agency), large & small trucking companies, rail carriers, logistic companies, commercial manufacturers, retailers and other Federal & State agencies. The purpose is to improve fuel and efficiency and the environmental performance, reduction of both greenhouse gas emissions & air pollutions of the goods movement supply chain.

Armellini is the largest floral carrier specializing in nationwide, truckload service by a fleet of temperature controlled equipment operating from principal ports.

In 10 years' time, Armellini Express who currently has 500 employees will be replacing at least 400.

David Armellini came into the company as a young man and learned the business from his Father. His training was hands on.

EMPLOYEES

Current: 500; Replacement in 10 years: 400

**MARK BAKER
DIRECTOR, S. FLORIDA OPERATIONS.
S. FLORIDA CONTAINER TERMINAL**

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

We are a company that manages labor - International Long Shore men who handle large equipment. We employ trained employees, we don't have to train employees.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, must have trained employees.

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. Will need assistant operations managers for vessels. Will need managers to plan ship years, manage labor, must be proficient in Excel

Skilled/technical. Will need technology based staff especially since each piece of equipment is getting much more technological, for instance, there are now cameras on the equipment which can be viewed off site in an air conditioned room

Semi-skilled. Most labor is in the running of the equipment although will need lashing personnel which is tying the containers down on board the vessels, this is done manually

4. From which institutions do you hire from?

Hire from the Maritime Merchant Marine Academies, especially in Texas, Mass. and King's Point. We also use monster.com, and we have open houses - job fairs at the local schools. We do have a human resources dept. in the corporate offices.

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No not at all. We do all our training in house however we do utilize the facility in Baltimore

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Yes, from the Piney Point Academy, Baltimore facility. We do send employees to Baltimore and also Charlotte.

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

The Maritime Academies touch various items especially concentrating on crewing and sailing. Courses are job specific but nothing for stevedores

8. Are tuitions typically paid for by the company or by the students from your industry?

Company pays for employee tuition such as MBA but not for four years BA course

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

By having a comprehensive curriculum. Location should be by the ports, either Jacksonville, Tampa, Canaveral or Miami, but not Orlando with no sea around for hands on training on a vessel.

NOTES. Storage capacity 72 acres. Capacity of 538 refrigerated containers.

10 lanes of interchangeable gates. Berth space, 5,000 ft. Draft alongside 42'.

12 gantry cranes. Up to 350 blue collared workers, part time. We have 40-50 steady full time workers any day. In the office there are 22 workers.

In 10 years our workforce will be shrinking because of the technological speed we are inventing and improving things for efficiency, sadly it puts people out of work. SFCT provides full stevedoring & terminal services to some of the world's largest steamship lines.

Mark Baker went to school in banking liked financials, but decided it wasn't for him. Worked in New Jersey 38 years, was invited to come to Florida through a previous boss in New Jersey.

EDWARD BELLO
CHIEF EXECUTIVE OFFICER. PORT OF MIAMI CRANE MANAGEMENT

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

There is a lack of training in all areas especially crane maintenance, ports and docks

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, most definitely

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional Management. We will be needing operations managers, maintenance supervisors, crane operators

Skilled/technical. Gantry technicians and mechanics

Semiskilled sector. Regular mechanics and welders.

4. Which institutions do you hire from?

Hire from anywhere we can. For example, AAPA, in December we had only 2/3 applicants. We need specialized people and they are not to be found locally. We have tried the Miami Herald, we got 100 applicants but with little or no experience. We do not use the trade journals. I.L.A. will advertise for us.

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No, none what so ever

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Yes, we have a recruit joining us in two or three weeks from New Jersey, he is moving here as he has family here, he is a trained gantry crane mechanic. We inherit many tradesmen such as electricians when they come to work in house on a job, they already have training and experience.

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

One school in New Jersey, P.T.T.I. - Port Technical Training Institute, directed by Jim Anastasio, located in Newark. They are very busy; they train the L.S.A. and I.L.A. Also they come to Florida to give us two weeks of training with their gantry simulator. (They drive down with the simulator)

8. Are tuitions typically paid for by the company or by the students from your industry?

Yes, we pay for their books, testing meters. Generally don't use trade schools but we use Lindsey Hopkins at Miami University and several vocational schools in Miami.

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

It would be great to have all the resources in one area. Perhaps managed in conjunction with one organization, AAPA.

NOTES. We currently have 31 foremen, technical mechanics and welders & helpers and 4.5 administration including engineers. In the next ten years in Port of Miami, we will probably hire 20/25 more employees. It should be noted that the technology for running the cranes is getting so detailed. Our 4 new cranes have cameras on them; we are working towards a processing room whereby we can watch all activities of the cranes maneuvering around.

Since 2002, Crane Management has been responsible for the management and maintenance of the county's port of Miami gantry cranes and container handling equipment. Downtime in 2007 was 1.08%. In 2012 we were awarded the contract to manage the cranes for another five years. August and October of 2004 were the busiest crane months. We received a new gantry crane in October 2013 and four new super post-panamax gantry cranes recently. These four cranes were shipped to Miami from Shanghai via the cape in South Africa. We now have 13 ship-to-shore container handling gantry cranes on six 1,000' wharves.

Ed Bello joined the company in 2011. Ed got his BA in mechanical engineering at F.I.U. Florida. Spend his work life at the seaport, worked on the cranes since 1995.

**EDWARD CORRIGAN
CROWLEY MARITIME CORPORATION
MANAGER, TERMINAL OPERATIONS**

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

We work with a collective bargaining agreement with the teamsters with regard to labor. Training programs are followed rigorously according to regulation.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, but we do not rely on training, we get trained employees.

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. Supervisory level will be needed. Human Resources hires qualified personnel

Skilled/technical. Handled by head office in Jacksonville. IT is outsourced.

Semiskilled sector. Supplied to us by the teamsters

4. From which institutions do you hire from?

We do hire from the Diesel Institute of America. We get staff from municipalities, the pay is better. Also Merchant Marine Academies especially in Mass. and King's Pt. Human Resources handles hiring. We do advertise in trade journals. We do get interns from such places as the University of North Florida, they do case studies, we recently hired two students.

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No - different colleges, universities have different courses. Never a concern to get qualified employees.

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

We hire from Baltimore, the Journal of Commerce, and websites, handled by our H.R. office. Regarding training, we use a rigging class in Mississippi, crane training in Utah. My boss is going to Georgia for management training. We also go to the Caribbean, Kingston, Jamaica, for gantry crane training. (We can't use the Baltimore Company for gantry crane training because of our association with the teamsters.)

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

Colleges such as Miami/Dade and Broward Colleges have introduced logistics courses explaining the chain supply. Merchant Marine Academy, in Mass has good courses in maritime, security and warehousing. University of S. Florida has a good trucking program

8. Are tuitions typically paid for by the company or by the students from your industry?

Tuition is paid by the company. Educational classes, under graduates, post graduates; there is a reimbursement program by the company

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

In our area, I don't know if an Academy could assist specifically with us although the Baltimore Steamship Trade Association handles it well.

NOTES. 5,300 employees in total company. In Miami, 300 union labor. In 10 years we anticipate less employees because everything is getting much more technical with the latest technological developments. However, in the tug and barge division of the company we utilize licensed officers - American Marine Officers (A M O) - Dania. Master, Mates, Pilots - (M M P.) Piney Point at Baltimore trains licensed officers

Crowley was founded in Jacksonville in 1892. 13th largest company in Florida as of 2013. \$1.8B in revenue in 2012. Fleet of 300 vessels, LO-LO vessels, tugs and barges plus terminals, warehouses, tank farms and specialized vehicles.

Crowley offers flexible, scalable, agile logistics solution. Can handle seamlessly logistics requirements of offering services. 121 years perfecting logistics. Crowley has a 19,000 sq. ft. cold storage facility in Miami

Ed was offered an internship at a young age, did an internship, got a BA in marketing and business management and went to work in Newark port, came to Florida in 1992, worked with Crowley for 23 years.

**VICE PRESIDENT & GENERAL MANAGER.
FLORIDA INTERNATIONAL TERMINAL**

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

Primary concern is that less and less people know about our business. People hired by freight forwarders/agents have no clue about basic terms of our business - such as bill of lading. We need well trained new employees. Computers are fast but we do not have enough time to teach employees about resources.

In the old days, employees started from scratch and worked their way up from the bottom to the top. Now we need employees to be trained in a week. In every area, people are asking where I get train. After high school, college people have to train themselves if they want to get into this industry. Although Broward College is now teaching a logistics program but still have to learn day to day operations. Greatest shortfalls of the industry do not know enough about moving products from A to B and financial business.

South Florida exports large containers of hazardous materials; no one knows the rules and regulations of exporting it. We need terminal operators and customer service personnel with good experience.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, absolutely

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. Terminal and vessel operators. Customer service personnel who can communicate with clients about hazardous material regulations and have good knowledge of the industry.

Skilled technical. Not so much IT, we have one person in house but we outsource this. We use vendors otherwise

Semiskilled sector. Need operators understanding terminal life and loading and unloading vessels.

4. From which institutions do you hire from?

First and foremost look at alternatives in the industry, in the last 4 or 5 years we have hired individuals from competitors. We don't hire directly from college or universities, the graduates have no knowledge of the industry.

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No, nothing in Florida of any relevance. North East Universities and in the Mid-West have programs in logistics and supply and transportation - none in Florida I am aware of.

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Generally no. Economic issues regarding relocation and other concerns.

Training. We do send employees for training anywhere there are relevant courses such as safety training and workers compensation in Insurance Company in Texas. Broward and Miami/Dade College have one or two day courses.

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

North West University, Illinois, has a supply chain program - I attended that. University of New York, Hofftra has a transportation course, and department of global industries and geography.

8. Are tuitions typically paid for by the company or by the students from your industry?

We pay for employees going on courses

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

We need an Academy tremendously. South Florida is and continues to be very important for the maritime industry.

Location. The Academy should be in South Florida where the ports do international trade, between us, Port of Palm Beach and Jacksonville.

NOTES. We have 16 employees in our company. We use unionized labor between 350 and 400. In 10 years' time, we hope to grow 5%. We are limited by the infrastructure of the port, their final phases of the master plan. We hope to attract more qualified employees but again are limited by the outgrowth. In the past there has been a lack of infrastructure growth but that is changing nationwide. If you look at the U.S. versus Singapore we are behind. It's a field of dreams, we build it and they will come globally.

Florida International Terminal was formed in 2004 as a result of the association of two large Latin American port operators. S.A.A.M. & A.G.U.N.S.A. linked to largest Chilean steamship companies C.S.A.V. AND C.C.N.I. with the purpose to manage and operate a marine facility located at Port Everglades. F.I.T's goal is to be a leader in the port and terminal operations services in the region by incorporating a new style of hands-on management plus the modern and cutting edge equipment and technology we utilize in all our processes. We handle:

- Vessel loading and discharging
- Terminal services
- Electricity & monitoring for refrigerated containers
- Staffing & stripping of dry cargoes
- Equipment
 - 11 container top picks - Taylor & Hyster
 - 10 forklifts of various tonnage capacities
 - 26 yard tractors
 - 24 superchassis
 - 4 diesel generators
 - Other services
 - Fumigation (IWS)
 - M & R washing of containers
 - Stuffing of general cargoes (IWS)
 - Storage and distribution of general cargo (IWS)

- Terminal Security

Deploys private guards 24 hours a day, seven days a week. Jose attended the Naval Academy in Chile. Went to sea for 12 years and has been in management 40 years.

JEFF FISER

V/.P. COMMERCIAL TRADE. TROPICAL SHIPPING CO.

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

We need heavy machine trained mechanics. We do have an apprentice program in place.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes most definitely.

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. High level management. We operate primarily in the Bahamas and Caribbean and we are a full service logistics company - steamship - freight forwarding - warehousing and trucking company.

Skilled/technical. The challenge is always heavy equipment marine mechanics. IT is important, we handle in house.

Semi/skilled sector. Will need dock, warehousing workers but do have sources for hiring them.

4. Which institutions do you hire from?

Merchant Marine Academies especially King's Point and Mass. We had an extensive training program in 2010 it was suspended due to lower productivity. Prior to that we had a training program for 8 years. I went through the Sealands training program and developed a similar program here at Tropical for hourly employees to management.

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No, with the exception of technology courses. Don't see a great need to reach out to colleges in other states.

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Yes, Merchant Marine Academy, King's Point and Mass. Also local colleges and University of Florida. Most of the crew on ships have had their training in the Philippines. We will use Crane Tech in Tampa for training our heavy equipment operators.

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

Merchant Marine Academies and the University of Tennessee. University of North Florida for their Logistics program. University of Arizona Thunderbird for their International Business program.

8. Are tuitions typically paid for by the company or by the students from your industry?

Yes, Continuing education program and in some cases, degree. 1 or 2 of our senior management have got degrees on line. I did a degree at Harvard on line and a colleague did a degree at Columbia on line.

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

Assist in developing skills. Train marine mechanics for heavy crane equipment. Teach intermodal skills.

Location of Academy should be in South Florida no further north than Jacksonville.

NOTES. Currently have 1,100 employees, in ten years' time we should have 3/4% more employees.

Tropical is 50 years old. Has 12,000 containers, 14 vessels. Trades primarily in the Bahamas and Caribbean. Handles freight forwarding, trucking, brokerage and documents and special services.

In 1986 Sealand Corp merged with C.S.A. Acquisition Corp. a subsidiary of C.S.X. to form Horizon Lines, Inc. Many Sealand executives went to work with D.P.World in 2006 based in Dubai, the largest terminal operator in the world. The company does not operate in the U.S.

Jeff got his B.A. at the University of South Florida, started out as a basketball coach. Worked for Sealand for 27 years and has been 14 years in West Palm Beach at the Port.

KRIS HOPKINS
PORT AGENT. SEAFARERS INTERNATIONAL UNION, AGLIWD**1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?**

We need trained skilled, safety conscious well trained workforce for the future. All the people Kris deals with are trained at Piney Point Academy in Maryland, it is a state-of-the-art training Academy focuses on sea going personnel and the military.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, definitely well trained at Piney Point

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. Managerial jobs such as pertaining to the intermodal port and managing cargo and logistics

Skilled/technical. In the future, ports are becoming technologically advanced with such equipment as the gantry cranes.

Semiskilled sector. Facilitators in the yard especially as the equipment gets more sophisticated and more efficient.

4. Which institutions do you hire from?

Seafarers' Union uses the Training Academy in Piney Point, Baltimore and we hire from there.

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No, don't believe so, Florida does not provide personnel for sea going capabilities. Our seafarers are trained to board U.S. flagged vessels. 96% of the Piney Point Academy's members get jobs in the military, tugs or cruise ships.

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

From Piney Point Academy, Maryland, involved in training there. It should be noted we have 22 locations throughout the U.S. with headquarters in Maryland. I.F.S. crew foreign flagged ships.

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

Piney Point Academy, Maryland as well as the Merchant Marine Academies in Texas A & M, Cal Maritime, King's Pt. to name a few. All our members are trained to go to sea.

8. Are tuitions typically paid for by the company or by the students from your industry?

Tuition is paid by the company if necessary courses are needed to be taken. Students pay for their tuition at Academies before coming to us.

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

It is important that the ports stay cutting edge with well trained employees from an Academy. Apprenticeships are important and courses can also be done on line. An Academy could assist tremendously in the labor forces in the ports at Jacksonville, Cape Canaveral, Miami and Fort Lauderdale as well as in Tampa.

Possible courses right from high school. Kris is a member of the Propeller Club, Tampa, which was previously addressed in the Tampa Port report. In fact Kris was having a meeting this week with colleagues from the Propeller Club regarding setting up the same program on the east coast as what they have in Tampa. Next month they will be looking at how to intertwine their program into a high school program in South Florida.

The future of the waterfront in Florida will produce good paying jobs for the next generation.

Location. Probably near a major port, it is important to have hands on exposure.

NOTES. Immediate members in the area encompassing Tampa, 300. Around the nation, 30,000. In the next ten years, I see a 50-75% growth.

The Seafarers Harry Lundeberg School of Seamanship is located on the campus of the Paul Hall Center for Maritime Training & Education Vocational School dedicated to preparing students for success careers in the U.S. merchant mariners since 1967. The program is an unlicensed apprentice program.

Paul Hall Center for Maritime Training & Education is on 60 acres of waterfront in Piney Point, Maryland, 60 miles from D.C. The campus has SH HSS & Joseph Sacco Firefighting & Safety Training

School, classroom facilities, cooking lab for hands on training & culinary description & Seafarers Training & Recreational Center which contains dining facilities, housing quarters, recreational & laundry facilities. Hands-on-training is conducted on board the John F. Fay, a vessel which is docked at the campus' waterfront.

Jobs are available on U.S. flagged vessels in deep seas, inland waterways & the Great Lakes including cargo, tugs and cruise.

The Atlantic Gulf Lakes & Inland Waters, AFL-CIO represents professional U.S. merchant mariners sailing aboard U.S. flagged vessels in the deep sea, Great Lakes and inland trades.

Kris Hopkins got into the business through family, trained in the industry since 1982.

Kris referred Connie Wolski (Portus in Jacksonville & Port Everglades, H. R. Director) as having a lot of knowledge in this area.

**RAYMOND JONES
FLORIDA EAST COAST RAILWAY**

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

We are in a difficult position in securing a new labor force. We need drivers and they are in short supply. People look to other jobs, the salary of a train driver is good they can earn \$160,000 while an analyst earns \$70/80,000. We do take students from high schools leading up to colleges who have had two years course in transportation but the turnover is big. Our senior experienced upper management is getting older; we are filling the positions now. I foresee a considerable problem in the years to come. There is a gap from senior management with new staff taking over; they don't have the knowledge or the ability. They do have computer experience but no experience in our business of transportation. It is also hard to get truck drivers.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, more efficiency

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. Managers in finance - budgeting, operations, engineers - designing

Skilled/technical. Analysts in finance, sales and marketing staff, positions are filled quickly but the turnover is big. Our IT is outsourced.

Semi skilled sector. We will be hiring always, administrative, collections, drivers receiving accounting personnel.

4. Which institutions do you hire from?

Hire from colleagues' word of mouth, job fairs at local colleges. With regard to management we use search firms, we also use home search personnel - people who will work out of their homes

independently and then present us with their applicants. We have offices in Jacksonville, Boca, Miami and Orlando.. We run ads in rail transportation trade magazines

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

We are beginning to get there, we have not had any courses in the past but now there are courses in different entities offering a two year or a four year course in logistics, maritime, rail, trucking and warehousing. Training has been lacking on Florida and now especially with the opening of the Panama Canal in 2015 it seems that Miami/Dade and Broward Colleges as well as in Jacksonville have stepped up their logistics courses and are beginning to fill a void.

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Yes we do hire from out of State. We talk about current vacancies with other railroads and interested markets. The business is getting bigger, we are advertising out of state.

Training. Out of 8/10 students who start our training program (some from out of state) usually only 4 will stay and remain, We do try to promote from within the company. Depending on the position, we do send personnel for training out of state, for instance GA has a conductor training program. VA has a repair shop training program, Phoenix has Hazmat training. Most of the training is here through manuals and we then promote to higher positions such as supervisory positions. We also do track training. We do work with the American Association of Railroad Schools. We need training at the port in intermodal, container warehousing. In logistics we need distribution needs and increasing requirements. Big warehousing, big box manufacturing, free trade zone usage in inland ports and outside south Florida. A ship just can't show up and unload cargo!

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

We have a human resources office who will have these answers, Tom Ballas,

8. Are tuitions typically paid for by the company or by the students from your industry?

If we have an active employee and they are increasing their knowledge such as getting a M.B.A. we pay for their courses. One designated employee recently went to Cal. Logistic School. Chief engineer recently got a M.B.A. We support upper management such as sales and marketing in management courses of business and transportation.

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

Yes, we need an Academy here in Florida. It would be fantastic. Here in South Florida would be a good location between Miami/Dade and Broward or in Jacksonville. Most of the major railroads or transportation companies like, CSX Corporation, Rail America, Ft. East Coast have offices in the Jacksonville area. We are located strategically between the north and south railways here in south Florida. The Academy should not be in Orlando, their area is much more hospitality orientated.

NOTES. We currently have 630 employees - not contracted. Before the recession we had 800 but in the next decade we should increase to 900-1,000 employees, especially with the Panama canal opening up in 2015 and generating more cargo coming into Miami.

Fl. East Coast Railways provides safe, timely, cost effective rail and logistics solutions to meet the demanding transportation needs of domestic and international customers. We partner with the Port of Miami, Fort Lauderdale and the Port of Palm Beach and trucking companies to move intermodal freight to provide online damage free car load services to our customers.

Raymond Jones trained as a firefighter in New York, through a family connection became interested in the industry, moved to Florida and has been in the business 46 years.

THERESA LEWIS
VICE PRESIDENT – INTERMODAL SERVICES
LANDSTAR

1. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

New hires need to be strong with: analytics, logistics fundamentals, ability to solve problems.

Need employees who are good at identifying issues and who can streamline processes

Lucky we have UNF in the backyard, they have a great logistics program.

Hiring interns out of the UNF transportation & logistics program. Have a good track record.

2. Imagine the state of your industry in 20 years: What is your primary concern regarding having a sufficient well-trained workforce to draw from? Between now and then, are your concerns the same, or are there other priorities to cover within the transition?

Very dynamic industry; there will always be a demand for getting goods from point A to point B. The issue is getting the job done smarter and more efficiently in a very competitive marketplace.

Analytical expertise and strong executive management skills are critical (Landstar is agent-based, and the agent network is large and complicated).

Schools see the gap, but you either get it or you don't. Not all students have what it takes to make it in the industry.

Coaching comes from internships and industry exposure: schools are good, but there is nothing like direct experiences dealing with the nuances of each business working within the logistics chain.

Navigating the system, especially early in a person's career is a game of chess and you have to plan your moves out.

Students need access to technology. Database management, spreadsheets, communications skills are required.

Biggest issue: entitlement; today's young professionals' work ethic different. Not necessarily something you can teach.

3. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? What are the key resources and how readily are they accessed?

CSX and others have been hiring from University of Northern Florida.

Internships have been a good way to coach/train prospective employees.

Good fundamentals coming out of the schools, but the best training comes from exposure on the job.

Demand for transportation and logistics professionals is growing in Florida

4. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida? How do you assess the quality of these training services?

Landstar has been successful recruiting out of Florida, but sometimes have to go out of state to find the right person for the position.

5. What colleges or trade schools (anywhere in the U.S.) are you aware offer curricula specific to meeting industry needs?

- UNF has been very good/reliable
- HR will look around at other resources as needed

6. There are currently 7 U.S. Maritime Academies throughout the United States, each providing a different focus to support the next generation of maritime professionals. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce?

- In general, a maritime-focused academy wouldn't be a likely fit for Landstar. Need more of a surface transportation focus.
- Florida is seeing a lot more on-dock logistics business; Jacksonville in particular: JAX is becoming an intermodal hub for the country (great trucking access, central location, connections to Puerto Rico and South America, increasing focus by the railroads, etc.)
- Local transportation group is growing
- Lots of companies relocating to the area and demanding more of the transportation system
- Rail focusing on new development: will be seeing the first dedicated reefer boxcar service (produce) and associated infrastructure development (refrigerated warehousing). The industry is investing in Florida.

CHUCK MARAVOLO

DIRECTOR. PORT OF MIAMI TERMINAL OPERATING COMPANY

REFERRED BY CARLOS AROCHA

PORT OF MIAMI TERMINAL OPERATING COMPANY

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

Concern for safety and production.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes. Currently we train on the equipment. Entry level does not have any training when hired. Years ago we did training in the classroom and you clocked in via a time sheet in the yard. Now supervisors have express clocking in machine via computer.

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. Superintendents. Training coordinators

Skilled/technical. With the increase in growth of the industry and new equipment getting more technical, it is imperative we get more well technically trained employees. Machines now feature sensors, cameras and alarms. We need repair mechanics for the top loaded cranes.

Semiskilled sector. Miami received four new cranes recently. Port Everglades has more cranes, all in readiness for the opening of the Panama Canal generating more business.

Miami's channel is being dredged to receive the mega vessels. Railroads in Lauderdale and Miami are being made ready; this will be the quickest way for cargo to arrive from the Panama Canal in 2015. Ports with deep channels will be able to accommodate these mega vessels - Miami - Norfolk - Baltimore and New York.

4. From which institutions do you hire from?

We hire from the International Long Shore Men's Association.

- Miami its local ILA 1416
- Port Everglades 1526
- Cape Canaveral 1359
- Fort Pierce 1816
- Checkers 1922
- Mechanics 1922-1

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No. This is a specialized business. We follow O.C.A. regulations. Port regulations. Waterfront training regulations. Each piece of equipment needs 80 hours of specific training.

Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Do not hire outside of the state. However, we work with M.I.O.T. - Maryland Institute of Technology The institute comes down to us every six months to a year for two weeks. They drive down as they bring their gantry simulator with them for two weeks of intensive training. Employees taking this training are with Maersk, Evergreen, Mediterranean Shipping Company.

There is a new simulator training facility in West Palm Beach. E.T.E.C.H. 27132 Vista Parkway, Suite 313 W.P.B. 33411 Sebastian Rodriguez 561.762.8324., Chuck is going to review the facility Friday, 02.21.14. It is specifically for gantry fork lift operators

6. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

M.I.O.T. - Maryland Institute of Technology meets our specifications and has waterfront training

7. Are tuitions typically paid for by the company or by the students from your industry?

All paid by company

8. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

We use union laborers. We train the trainers. It would be good to have a facility in Florida.

The Academy should be located in South Florida, easily located between Miami and Fort Lauderdale.

NOTES. Between Miami, Fort Lauderdale and Cape Canaveral there are 2,500 union laborers., 500 part times working on cruise ships. Cargo is growing, railroads are growing there are larger vessels.

Three key lines, Mersck, Mediterranean and C.M.A. Florida imports primarily. Warehousing is growing; there is a distribution center in Stuart/Fort Pierce.

Chuck has been in the business since 1977. He was on a Russian steamship for three years. Then worked for a Russian company overseeing sale of their equipment to leasing companies. He has worked on the piers, terminals, and stevedoring in New York. Worked for C.C.T. now Crowley, started working with the I.L.A. in 1997. Chuck is the liaison between management and labor.

Stevedoring signatory.

KEN ROBERTS
INDIAN RIVER TERMINAL * INDIAN RIVER MARINE

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

Well, not a major concern currently, we used to do four runs to Nassau and three to Freeport weekly now we only have one vessel and that is chartered only. We cut back in 2012. Our vessel is foreign flagged and therefore has low cost foreign labor on board. Only 6 / 7% of the vessels in the U.S. are U.S. flagged so there is not the demand for a U.S. training facility currently although there is a big training center in Baltimore at Piney Point.

Locally there is the Chapman School in Martin County which trains vocational maritime personnel and we do have the Maritime Training Academy at Fisherman's Wharf.

An Academy is a great idea if there is a market. Dr. Ed Massey at the Indian River State College has been working on developing an curriculum for the maritime industry if the demand is there.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, trained staff always produces more productivity. In most maritime cases, crew has to get a license before life on board.

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. When we expand we will be needing operations managers trained, qualified personnel who know the international rules and regulations, ships' operations, Coast Guard regulations, shipping activities which are all governed by the maritime laws set up in London and which are followed worldwide.

Skilled technical. Not sure what the future will hold but one possibility was a tank farm, there are other ideas we are looking at. We have to remember that the channel is only 28' draft so that limits what kind of vessel we can bring in here.

Most of the ports in Florida are deepening their channels to accommodate the mega cargo vessels which may mean residual business for this port by pushing the small vessels here. How much trade is not calculated as yet. Miami River is looking at deepening their channels as well as Fort Lauderdale and Palm Beach ports. There will likely be some movement at the port of Fort Pierce. Miami port is

deepening their channel to 55' and will accommodate the mega cargo vessels once the Panama Canal is open in 2016.

4. Which institutions do you hire from?

Typically, when we do hire, we hire from word of mouth contacts. Sometimes we work with a workforce board, but most of the jobs we have do not require a four year degree. Trade employees tend to go from job to job such as longshoremen.

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

For existing needs, yes. However, we all have to rise to the occasion and get more knowledgeable about the future of our industry, such as natural gas becoming the primary fuel to the shipping industry.

In Europe, the Europeans are well ahead of us in this area, using Liquefied Natural Gas. (LNG)

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

No we do not hire outside of Florida, we get referrals from contacts.

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

The seven Merchant Marine Academies and the New York City School. There isn't one in the south east of the U.S. Texas does have one as part of their University. There is a pressing need in the U.S. maritime industry to review our standards. Currently most U.S. cruise ships are foreign flagged, allowing them to get crews from various overseas countries. In our vessel we can have crew from the Philippines, Central America, Honduras, Ukraine and Russia alone.

8. Are tuitions typically paid for by the company or by the students from your industry?

No. Employees are already trained when they come to us.

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

We have to wake up to the fact that the whole U.S. maritime industry is changing, new technologies are here - not coming. Ship design is changing; marine propulsion is changing, new engine design, etc. The U.S. has to wake up to meet those demands; I see all these activities happening in the trade journal magazines.

Intermodal is becoming increasingly important; we must put more emphasis on shipping traffic and gear up to the changes in the next couple of years and requirements of the industry. There is a lot of work ahead with regard to government policies and issues.

We have about 40 employees working in the terminal. Hopefully there will be changes in the next 5 - 10 years. And the area will explode.

NOTES. Ken indicated that he does have plans for his company but was not prepared at this writing to expound on them, but there could be an announcement in a couple of months.

Some of Atlantic Caribbean Line's wide range of services at Indian River Terminal, Fort Pierce includes ocean transportation of full container load or less than container load freight, trucking, freight consolidation, cargo tracking, and intermodal logistics. Our vessel has roll-on/roll-off capabilities, which provides a safe and convenient transportation solution for all types of vehicles and heavy equipment. In addition, our private terminal in Fort Pierce maintains equipment capable of handling all types of heavy-lift cargo.

FRED ROGACKI
PRESIDENT & C.E.O. INTERNATIONAL WAREHOUSE SERVICES

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

Well trained workforce is a big issue for the future. It is a big challenge for the next five years. We need a reliable workforce for warehouse distribution. We need skilled labor, equipment is getting more technical, fork life operators have to be more skilled in technology. Supervisors have to know how to handle handheld receiving devices now.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, most definitely

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional Management. Management on board must oversee operations logistics both global and domestically. Will need professionals in the IT sector as more and more the equipment is more technical driven.

Skilled/technical. Managers must be fluent in computing programs using such programs as Excel. (10 years ago we didn't need these skills). Being here in South Florida and dealing with trade with Latin America it is important to see that employees can speak two/three languages. We outsource our IT to three agencies and have worked with them for fifteen years. IT has become increasingly important, I have a task list in front of me to do and 80% of it involves IT.

Semiskilled sector. More trained labor needed here

4. From which institutions do you hire from?

We tend to use employment agencies, they advertise and search and get their top 20 and then present the top 4 to us for interviewing. 50% of labor is outsourced. Many times we will convert our vendors' labor to full time employees here. We offer 100% health benefits and that's very attractive to people sometimes even more than dollars.

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No not aware of any facility. Working internationally in the Ports of Miami and Fort Lauderdale we need to plan our curriculums accordingly.

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

No, do not hire out of state for training. Not generally do we send employees out of Florida for training. Occasionally we do for managers.

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

University of PA. has a very good logistics program.

8. Are tuitions typically paid for by the company or by the students from your industry?

We contribute 50% or 100% to an individual by company requirement and position. Two colleagues here did continuing education by on line courses.

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

The Academy would help better educate people for our industry. An educated person would have the desire and passion to get an education before entering our business.

Location. I would like to see the Academy in South Florida near Port Everglades, Miami and Port of Palm Beach which is becoming a bigger player. Possibly in Broward County.

NOTES. We have 100 employees, in the next 10 years we will be adding 10 new employees a year.

International Warehouse Services is a flexible international air and ocean option service from standard to expedited services. We have a 250,000 sq. ft. facility in the foreign trade zone. Largest user in Fort Lauderdale. The loading dock holds 40 containers, 50 workers work on the dock. We handle:

- There is 24 hour security.
- Warehousing
- Freight forwarding
- Trucking
- Brokerage & documents
- Special services
- U.S.D.A. Fumigation Facility
- Customs Evaluation Station (CES)
- Public Truck Scale
- Marine Survey Services

Fred went to college in New York after college Fred was a coach, teacher, then he was offered a job in Miami in logistics, took business classes, seminars, read everything and learned on the job. Been here 32 years.

JORGE ROVIROSA
FL. STEVEDORING INC. FAROVI SHIPPING CO.

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

It is vital to be well trained for the coming years especially as we do investments in the ports nationwide. Shipping Lines are reducing, they are consolidating their services and knowledge but the

companies are growing bigger. We must currently seek expertise beyond S. Fl. We must have trained people.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

In terms of my business at the pier handling cargo, we do have training and safety courses here.

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional/management. Our management team in the next ten years will come from our own family now training in all areas.

Skilled/technical. At the pier level we will be looking for supervisors

Semi/skilled. Long shore men. Large volume here. We are getting less ships but the ships are bigger. We deal with 30 ships and three major consortiums:- MERSK, M.S.C., AND C.M.A-C.G.M.

4. Which institutions do you hire from?

We basically hire by word of mouth or we get our employees, who are known quantities from other companies.

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

Hard to tell. Internally, people are organically grown and we move them into different slots.

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

No we do not recruit outside of Florida. Occasionally we will look at other States for training

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

Merchant Marine Academies in the U.S. and especially the one in the New York

8. Are tuitions typically paid for by the company or by the students from your industry?

No, we hire experienced employees

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

Don't have a negative or positive feeling about an Academy. If there is one it should be located in S. Florida.

NOTE: The ships are bigger, technology is getting slicker and therefore it is easier to operate generally. In labor we will probably need more.

Fl. Stevedoring has been in operation since 1972 with an active Stevedoring license with Miami/Dade Seaport Department and Port Everglades Authority. Our roots go back to 1937, Frank A. Roviroso founding the company which took his name with headquarters in Cuba. We employ skilled labor from

the International Longshoremen's Association. It is union labor. Fl. Stevedoring was one of the four founding members of the Port of Miami Terminal Operating Company.

Cruise. We offer porter services, baggage handling and vessel stores loading in Miami and Fort Lauderdale to Seaborne, Holland American, N. C. L., M.S.C. and Fred Olsen shipping lines. Cruise guests receive their first and last contact with I.L.A. Cargo. We have the most modern equipment in S. Florida and can handle any forms of cargo. We optimize productivity, maintaining a safe work environment allowing us to provide shorter vessel turnarounds and damage free handling. We handle Ro Ro's, cars, heavy equipment, lumber, steel yachts. We have state-of-the-art cargo handling equipment to provide our stevedoring customers efficient service.

The consensus across all the companies interviewed was that Florida's growing waterfront industry will produce good paying jobs as well as longevity in jobs for the next generation. The state and the industry would greatly benefit from a comprehensive training program for careers in domestic and global logistics, international business and indeed even the basics of port industry life currently and certainly for the coming years.

With extensive investments in logistics infrastructure, it is vital to maintain all aspects of port life and to employ a well-trained workforce. However, cargo operators have found there are gaps in knowledge of the industry seen in younger staff. In addition, there is a void currently in hiring trained entry-level positions across all categories of jobs. Positions of concern include high-level management, trained vessel operations managers, customer service personnel, engineers, analysts, gantry crane technicians, mechanics, welders, dockworkers, rail conductors and administrative workers. The interviewed companies identified many education and training programs previously discussed in this report as their main source(s) of workers. These facilities, located throughout the nation and offering programs with focused curriculum, do not provide a comprehensive approach to seaport logistics.

II. Florida's 15 Deepwater Ports Interviews, Cruise Industry Demands, U.S. Maritime Administration and Economic Development Involvement

Interviews were conducted in February 2014 with port directors and/or other key executives of a representative sampling of Florida's deep-water ports, including Port Canaveral, Port Everglades, Port of Fort Pierce, Port of Jacksonville, Port Manatee, PortMiami, Port of Panama City, Port of Pensacola and Port Tampa Bay. The table, below, lists the ports and the current employee pool. Total current jobs equals 558,200.

All interviewees unanimously responded in support of educational initiatives in the state of Florida as vacancies throughout all levels of the workforce will need to be filled in the coming years. Additionally, a clear trend in responses, all who were interviewed emphasized that an efficient, well-trained workforce is needed to meet the demands of the next decade and beyond. A more knowledgeable employee performs to a higher standard which results in less frequent and less severe accidents. It also results in more favorable insurance rates.

In general, ports try to employ those who have maritime training and knowledge, including Coast Guard retirees and graduates of institutions such as merchant marine academies and a variety of universities outside Florida, in addition to the universities of Central Florida, North Florida, South Florida and West Florida. Ports also look into their immediate workforce pool area for new hires, and word-of-mouth and inside industry recommendations are sometimes reliable means for finding qualified personnel.

Seaport Interviewee Summary

Port	Current Jobs*
Port Canaveral	13,100
Port Everglades	160,000
Port of Jacksonville	65,000
Port Manatee*	20,400
PortMiami	207,000
Port of Panama City	10,900
Port of Pensacola	1,800
Port Tampa Bay	80,000

**Direct, indirect and induced employment in both cargo and cruise*

However, as the industry gets more technical and has more licensing demands, it is imperative that specialized training becomes paramount. Some ports are now coordinating with local school systems, colleges, and universities to provide transportation and logistics-specific curricula. These programs demonstrate to high school-age future jobseekers that this is a good industry in which to take an interest. It should be noted, however, that none of the current port master plans include provisions for educational training for future staffing.

Interviewees at the participating ports identified positions in general fields that, over the next decade, will need to be filled, from professional management to skilled laborers. Senior management and executives are aging; in the next 10 years, ports will need to be hiring in this sector. Sales and marketing and business development sectors will be in great demand as well as the industry moves forward. The ports also identified skilled technical positions as being in a crisis demand situation in the next 10 years. The hiring of information technology (IT), engineering, planning, architectural design, computer-aided design (CAD) layout designers, data/inventory control, logistics, finance, communications, electronic specialists, automated radio communications all were identified by interviewees.

Semi-skilled employees who have had some exposure to port work were also identified as potentially being in high demand. Employees learn mostly on the job, but certification courses are required in most of these areas. The majority of employees in this sector of crane operators, mechanics, electricians, and plumbers keep their jobs for 30 years or more. In addition, facilities personnel will be in demand, where there is a challenging and ongoing void in training and attracting personnel in this area.

In the past and currently, these positions are filled through popular recruitment outlets, including the American Association of Port Authorities (AAPA), where available positions are advertised. The use of traditional recruiting websites in seeking employees, however, tends to be ineffective as the respondents do not have the requisite maritime industry experience. Security positions, including local police and sheriff force personnel, are a good example of positions that have grown in demand significantly over the 10 years, and are expected to continue to grow. Retired military personnel have been a good and reliable source pool for these hires. CHEP, an international company in Orlando, dealing in pallet and container pooling services, has been another source of qualified candidates for yard marshalling types of jobs.

Skilled labor, such as electricians and air conditioning specialists are usually hired with pertinent certification papers and/or licenses. If necessary, because courses are not available in Florida, ports will send their employees out of state for training, including, but not limited to security seminars of the AAPA.

According to interviewees, there are opportunities for new programs to be designed through existing programs. Internships are key so there's no little or no on-the-job training. Training people to step into jobs and "hit the ground running" is paramount for the future. The proposed program(s) should be supported by not only the ports themselves, but also by their extended partners and stakeholders, such as steamship lines, freight forwarders and trucking companies. The curriculum should cover all aspects of the maritime industry, including basic education on the day- to-day flow and logistics of waterborne commerce of cargo and cruise businesses.

It should be noted that a dedicated training program for Florida, though advantageous for the state's youth by providing globally oriented programs, may not necessarily be successful for all of the shipboard positions, which are often filled by overseas candidates. There is currently not much demand for captains and senior officers as most of the cruise vessels in the U.S. are foreign-flagged vessels and typically acquire their crews from Europe and beyond. Current graduates of the U.S.-based academies tend to take engineering, logistics and maritime management courses for executive level shore positions within shipping lines and seaports themselves.

Name	Position	Port
Paul Anderson	President & CEO	Tampa
Ed Miyagishima	Senior Advisor to the President & CEO	
John Ballestero	Seaport Intermodal Coordinator	Miami
Karl Eckhardt	Director of Operations	Port Everglades
Amy Miller	Port Director	Pensacola
Dave Sanford	Deputy Executive Director	Manatee
Roy Schleicher	Executive VP/ Chief Commercial Officer	Jacksonville
Dave Sessums	VP International Ship Repair & Marine Services	Tampa
Wayne Stubbs	Executive Director	Panama City
John Walsh	CCEO	Canaveral
Don West	Director Public Works & Port Director	Port of Fort Pierce

PAUL ANDERSON

PRESIDENT & C.E.O. TAMPA PORT

2. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

There is no strategic plan or vision for the next 5-10 years for the whole State of Florida. We should utilize all entities such as the Chambers, Associations, Trade Organization, etc. with the Board of Education as restaurants; hotels tourism will all be in the same place in wanting to hire qualified staff. In logistics alone Florida trades will be hiring from out of state in five years if we don't plan now. We need to conduct an overall survey of the requirements of the industries, develop an inventory and have the required positions of the future drive the Universities, Colleges and High Schools curriculums.

3. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, definitely, an informed employee is more productive for the company.

4. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional Management. Executives and upper management

Skilled/Technical. IT personnel, especially the emphasis on cyber security, - there is a small program addressing this currently at the University of South Florida.

Semiskilled sector. We will need dock, crane, cargo handlers and facilities personnel.

NOTE: 33% + of our work force are retired service personnel, - V.A.'s, they offer the skills, experience, self-motivation, reliable, honorable and trustworthy.

5. From which institutions do you hire from?

The surrounding area, first Hillsboro College for the 2 year certification courses, University of S. Florida and A.A.P.A.

6. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

Absolutely no across the State. University of N. Florida offers a logistics program and an upper management business program

7. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Look inside Florida first especially in the Tampa area. We go outside of the State of Florida for very top positions and will use an executive search company. Actually, companies in this area tend to pull from each other.

8. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

University of North Florida has a logistics program. University of South Florida. Dr. Chris Harts is involved with the curriculum. Workforce Florida is involved in education future.

9. Are tuitions typically paid for by the company or by the students from your industry?

We do help employees; we pay a few thousand dollars a year.

10. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

Design program through existing intuitions' curriculums to drive the needs of the future.

We should make Florida self-sufficient in educating our youth and having them then employed in the maritime business in Florida.

In fact all major sectors of various industries such as tourism, hospitality, biotechnical, banking, insurance should be planning for the future workforce with what is going to be required for the next ten years and beyond.

Location. In the Tampa Bay area we have 20 colleges & institutions. The Academy should be centrally located in Central or Southern Florida. Preferably near the water, we have the room to have the Academy here in Tampa. We are one of the largest ports in Florida with 5,000 acres.

NOTES. Tampa port employs 300 people, it is a landlord port, associated personnel - tenants, and services etc. amount to 15,000 people. In the area, the port has 80,000 people associated with it. The 15,000 people will expand to a further 5-10,000 people in the next ten years. The economic impact in the local area is \$8B.

There are 30M customers within an 8 hour drive of the port. In 2012, 974,259 passengers were handled at the port. 34M tons were moved in 2011.

The Hillsboro County School system with the maritime courses offered is the first in the country to practice them. Touches on honor students and under privileged students.

Paul Anderson was raised in California, attended the University of Florida and completed Senior Managers in Government Program at Harvard. University's John F. Kennedy School of Government. Paul is chairman of Florida Port financing Commission, elected by Florida Ports' Directors. Chairman of American Association of Ports Authorities. Leading AAPA and the U.S. Conference of Mayors for a cooperative effort, urging investment in seaport infrastructure and make U.S. ports competitive and a national priority. Legislative Chairman of Florida's Port's Council and serves as Board Director of Florida Chamber of Commerce.

Served the Committee on Marine Transportation and Cabinet Level Strategy Group reporting to President Bush. Paul Anderson was president, International Oil & Shipping Company in Boca for two years following service with J.M. Family Enterprises for ten years. Senior Director of Sea bulk Marine Inc., an international transportation company in Fort Lauderdale. Advisor on intermodal issues to Governors' Bush and Crist.

Ed Miyagishima is Senior Advisor to Paul Anderson. Strategic representative of the port keeping port's stakeholders' informed. Senior Advance Representative in Executive Office at the White House. Key Advisor to Governor Scott on scheduling, operating and Chief of Protocol. 15 years with Clear channel & Wyndham Worldwide. Assistant Cruise Direct Princess, Royal Caribbean Cruise Lines. Board member to Support Troops. Tampa Propeller Club member.

JOHN BALLESTERO
DIRECTOR OF OPERATIONS, PORT MIAMI

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

Miami port is union labor; training is really done on the job for fork lift drivers, tractor, and crane drivers for lifting the containers. Owners of companies don't like this as new drivers are slower, can't move so fast, although companies realize they have to put up with this in the long run for future growth.

Approximately 400 port employees in such areas as accounting, agencies, IT, administration, security, operations and management.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes. Currently, on the job training, however, safety training is effectively performed.

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional/management, improve quality of management team. -Accounting, administration, management. No backup plan currently.

Skilled/technical, IT, engineering, planning, architectural design, CAD layouts. Currently only hire skilled and qualified personnel.

Semi-skilled sector. Fork lift operators, maintenance, electricians, plumbers.

4. From which institutions do you hire from?

We mainly hire from Dade County, we have a pool of 28,000 employees there. Even the Port Director came from there. The trend is that employees get their training there and experience and then come to us. No system in place to get experience on ships or the waterfront. We need to improve the quality of the management team. We also use American Association of Port Authority.

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No. There is no training for the long shore men industry, fork lift operators, top loaders crane operators, Employees get training during the slow time to test the cranes and move containers. Stevedores don't like new men, they move slower.

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Yes. American Association of Ports Authority. As well as Miami we look to San Francisco, New York, especially in engineering and operations.

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

2 to 3 colleges. In New York, Boston, Merchant Marine Academy, King's Point and Massachusetts Maritime Academy as well as California Maritime Academy.

Courses do train students for a profession as captains on board ships. Although, there are not so many U.S, flagged ships currently, the majority of the ships have foreign flags which means that trained personnel generally go into steamship lines or work in operations at various ports in the U.S. University of Miami, Dade County has a course in Freight Forwarding but not a full program. There should be a full training course in two years, international trade and more in depth on cargo could be four years,

8. Are tuitions typically paid for by the company or by the students from your industry?

Tuition if required by the Port will be paid for. The port may match \$2,000 a term but it does not pay in full for a student's degree.

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

New port personnel need customs, brokers, forwarders courses at school rather than coming to the port and having on the job training. They need to know what a bill of lading is and how to handle it. Location of the Academy should be in the Dade/Broward counties' area where the majority of the activity is. It should not be Orlando, as it has no water. Jacksonville is too far north.

NOTE. John has been with the Miami Port for 53 years. Worked in N.Y. with steamship lines, learned operations, loading and unloading of vessels. In 1977 ran terminals from the private sector. In the 80's/90's left private industry.

In 2011, Miami port had 176,000 jobs with an economic impact of \$18B. It is the 11th cargo container port in the U.S. In 2010 there were 4.33M passengers. One in seven cruises in the world starts from the port of Miami.

In 2035 the port hopes to double the cargo revenue to \$2M. Passengers will increase from 4.33M passengers to 6M passengers.

KARL ECKHARDT
DIRECTOR OF OPERATIONS. PORT EVERGLADES

10. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

The concern is a worldwide issue. Under U.S. flag there is more quality than demand. There is a void for young people.

11. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes definitely. Requirements have increased, there are increased license demands. Qualifications are more detailed. It's more attractive for the young grads to get jobs in Silicon Valley. In the 70's there was not so much demand to get a Harvard education or an M.B.A. Now it is more common.

12. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

In professional/management sector, there is some training but not universal. Conferences on industry intermodals. Private sector, Sealand Service, Grace Line do their own training.

Skilled technical sector, skilled personnel are hired, no training skilled sector, currently.

Semi-skilled sector, there is a void, generally learn on the job - no courses available, need them

13. From which institutions do you hire from?

Mostly hire key positions from the American Association of Port Authority. For instance, the Director of Business Development position will be advertised here. Tend to try to get personnel in upper management from a maritime academy background.

14. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No. However, we do safety training, firefighting training on ships' right at the port. There is a simulator here in Dania Beach and there is simulator training at Resolve Maritime Academy - private sector. For those who want jobs on yachts there are larger maritime entities that do documentation, placement, training in Fort Lauderdale area.

Location of the Academy should be in south Florida near Fort Lauderdale/Miami ports where these is the most activity.

15. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida

Yes. We recruit for senior positions such as Director, Assistant Director, and Managers Nationwide and in the U.K. and Italy as well as American Association of Port Authority

Employee training, if necessary outside Florida. Currently, skilled labor such as electricians, air conditioning specialists, specialty areas are usually hired with their certifications in place.

16. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

Maritime Academy of California and other such Academies. There are entities that teach freight forwarding. Much training for ships' crews are trained back at their homes such as in the Philippines and in Indonesia and they come already trained. Nowhere in Florida currently has a comprehensive course for the maritime industry.

17. Are tuitions typically paid for by the company or by the students from your industry?

If there are necessary courses for employees, they are paid by company. Advancement courses are paid by employee. Students pay their own way

18. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

There should be a curriculum in many topics of maritime life. Basic education on terms and conditions of day to day cargo flow, etc. There should be a licensed degree and also certifications of nautical licenses.

Karl is doing some research on this and will forward information to us.

NOTES. Even in our master plan we do not have training for the future work force. There is no training for top management. Currently 188,203 jobs in direct, indirect, and induced jobs, by 2026, anticipated 346,461 jobs. The workforce has to be trained. The port is rising to the occasion with the \$73M rail project about to open in July, enabling cargo containers to go directly from ships to trains. In July also there will be an overpass to the port from 1 95. Ships are getting bigger; the work force has to rise to the occasion.

Karl has tremendous experience; he will be retiring in October, 2014 after 50 years. He graduated from the California Maritime Academy, spent time at sea before coming on land and has worked in numerous departments including logistics and operations.

AMY MILLER

PORT DIRECTOR, PORT OF PENSACOLA

19. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

While I think today's youth are global oriented, the level of education is secondary and is not geared to logistics or transportation. University of Florida has a logistics certification course in their College of Business. Dedicated focus of education and skills needs to be improved.

20. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

The problem with U.S.A. is that world operator's use the metric system. We do not. This makes it complicated when doing international business. As an example, I asked a student, recently, when on a tour, how many pounds in a ton? They could not answer.

21. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. We are a non-operating port, we are a land lord port so our demand is in sales and marketing and long range strategic planning and engineering.

Skilled, technical sector, in our area, ships' agencies and brokering skills need to be taught.

Semi-skilled labor work force is welders, pipefitters, topside maintenance and repair, plumbers, loading and unloading vessels, fork lift operators and warehousing staff.

22. From which institutions do you hire from?

We hire from the University of West Florida, the local city and we look for four year university international business graduates, especially in sales and marketing

23. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No, not sufficient training courses, but somewhat relevant courses at the University of West Florida

24. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Yes, we have recruited from the University of New York and Merchant Marine Academy in Texas.

25. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

University of West Florida, a number of Maritime Academies, Upper Mid-West, Michigan, Penn State and Ohio Universities

26. Are tuitions typically paid for by the company or by the students from your industry?

Both ways. In the case of training, the port pays for training. We do have a tuition reimbursement program

27. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

Yes, we need a Florida Academy. We need to give the opportunity to our young generation to train our own homegrown talent and keep it here. Currently our trained talent leaves the area for bigger and better opportunities elsewhere.

The structure should be a combination of different curriculums. Certification in two months, a summer program, as well as a curriculum on a two and four year track.

Location of Academy should be easily accessible by all in the State. Easily accessible by plane or car.

NOTES. Amy got into port life by accident, majored in journalism and had a career in the newspaper business. The local port authority director invited her to come to the port as PR/Marketing Director and she worked her way up to her present position of which she has been in for three months. One of the strategic initiatives she plans is writing a master plan, the last one being done in 2000.

Port of Pensacola is a non-container port. The port is looking to grow, make an impact in the community and offer higher salaries. Current income per capita in Pensacola is expected to increase from \$22,000 to \$28,000 in 2025. Average jobs currently at the port are \$31,000.

The Port works closely with G.E Wind Turbo, manufacturing wind turbo and the port exports them and imports materials for them. There is also an International paper company locally as well as off shore oil and gas companies the port supports through vessel maintenance.

DAVE SANFORD

DEPUTY EXECUTIVE DIRECTOR, PORT MANATEE

28. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

People have poor or no experience. People with experience are in short supply. New hires generally know nothing of port life. Must get comprehensive training.

29. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, training is knowledge, knowledge is power.

30. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. Sales and Marketing. Security. Stable area in Finance.

Skilled/technical. IT department is well staffed. Maintenance experienced people will be needed to be hired.

Semiskilled sector. Tenants employ these people such as warehouse staff.

31. From which institutions do you hire from?

Positions are hired from Manatee Technical Institute for the work force at large. Most major jobs are advertised through AAPA.

32. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No. The problem is in getting people who know and understand the industry. We would be very supportive of an Academy. Only maritime facility is over near Port Everglades - Resolve.

33. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Yes for the top positions. We advertise in AAPA, their website, national trade publications. Primarily use AAPA for training of employees

34. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

We use Manatee Technical Institute, but nothing in the area is near a Maritime Academy.

35. Are tuitions typically paid for by the company or by the students from your industry?

Tuitions paid by the company. For college courses, the employee pays the full amount.

36. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

Curriculum should be geared to the large student population to not only be trained in skills but in port industry, which is very much lacking

Location. We already have a "talked about" security training program. We send our team all over the country to teach security officers. We already have the training rooms in our security building. We have the perfect space with classrooms with break out rooms and there is vacant space. WE WANT the new Academy here in Port Manatee.

NOTES. Carlos Buqueras is the Executive Director who is heavily recruiting business from Brazil, Argentina & Spain. 8M Floridians live in two hours of the port. Trade gateway to Central America, South America & Caribbean. We support 24,000 jobs and \$2.3B annually in economic impact. 9M tons of cargo annually. We hope to go to 15M tons in 10 years. 95% of the business comes from the Panama Canal. We are Del Monte's second largest U.S. receiving port. The closest U.S. deepwater seaport to the Panama Canal. The port operates its own Class 111 railroad connecting with CSX rail. We have 5,000, room to grow and our channel is 40'. We are Orlando's port.

Our Security Training Program for Ports is paramount. ISPS and MTSA security training. Security officer - first responders - security awareness - security plan auditing - port security personnel. We are the only Port to teach Facility Security Officer Training.

We support 24,000 jobs. 54 employees at the port. 70 part time. In 10 years the port will support 70 full time and 100 part time employees. Our objectives are to market inside the port and outside the port. Case in point, Air Products, January 14, 2014, announced opening a manufacturing facility opposite the port. It will hire 50 persons. It manufactures new liquefied natural gas - heat exchanger.

Historically the surrounding area pays 1/3 lower than at the port. Work closely with the Economic Development Council and Manatee County's pool of staff.

ROY SCHLEICHER
EXECUTIVE V.P./CHIEF COMMERCIAL OFFICER. JACKSONVILLE

37. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

Yes, we have a concern in looking for experienced personnel. Young people do not of any understanding of port life. Jacksonville University of North Florida has a logistics program; Florida State College has a logistics and transportation program. The top course is logistics.

38. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, important note is that we are not top heavy in labor. Everyone here is doing 2 or 3 or 4 jobs. Most of the interviews we conduct, we are looking for experienced people. We have no time to teach, with a Maritime Training Academy they would be ready to contribute immediately on starting a position at the port.

39. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional Management. In the next ten years we will be in a position to hire upper management and executives. Most of the senior management now is older and there will be a turn over.

Skilled/technical. In this area there will be a crisis situation in the next ten years.

Semiskilled sectors. We maintain this sector for a long time -30 years. There is sustainability in crane operators or a mechanic being in the same job for a length of time

In all three sectors we usually hire experienced older personnel so they can get right into their jobs.

40. From which institutions do you hire from?

We hire from traditional websites - although they are not productive. Also we use the Journal of Commerce, trade magazines. For operations positions such as security, we will go to the local police force. Skilled labor such as mechanics we will go to the community colleges where students have trained in mechanical courses. We also recruit from the University of North Florida where they have a logistics program.

41. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

The Port Authority does conduct management classes. Colleges here do have logistics classes and the University of North Florida has a good logistics program. We do also hire from the military service personnel. We have 3,000 in the area and many when they retire look for work in technical and management positions. We love these people as they have on the job training.

42. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

We recruit for the C.E.O. position nationwide. The Executive V.P. and upper management is recruited via trade magazines and search firms. Training for our employees for security and other seminars is through AAPA, and sometime their courses are out of state. We use other organizations too, such as the University of North Florida, which has a certified transportation program (CTP).

43. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

Other than the University of North Florida, the major schools such as Kings Point and Texas has a school

44. Are tuitions typically paid for by the company or by the students from your industry?

Transportation tuition is paid for by the company and is paid by a grant. There is a reimbursement program for those attending the University of North Florida

45. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

Training people to step into jobs is paramount for the future. I am sure this will be supported by steamship lines, freight forwarding companies and trucking companies. Right now people are getting on the job training because there are not such Academies available in Florida.

There is a big gap between experienced people in their 50's and 60's and then there are the 30 year olds. In today's world of cutting down to the bottom line there are no extra employees. We do encourage interns, which gives them on the job training and when they have finished their studies they are candidates for hiring. Logistics, being a "sexy" word is what people are gravitating towards. Location, here, near the port of Jacksonville, could coordinate with programs we have going in our area schools.

NOTES. There are 22,000 port dependant positions. 65,000 direct/indirect jobs in the area. 43,000 of these jobs are connected with cargo, manufacturing, retail, distribution industries and wholesaling. In 2011 we handled 900,433 containers, 81M tons of cargo. Revenues of \$51 in 2011. We work with Asian trade, as well as the Panama and Suez canals. Our channel is going from 40' to 47'. We handled 188,726 passengers (from Carnival's Fascination) in 2011, producing 460 jobs and contributed \$67M to the local economy. We are seeking more cruises.

Average salary at the port is \$43,980 in Jacksonville area the average salary is \$27,215. Key companies have new warehousing distribution centers in Jacksonville.

Jaxport has a very good relationship with the local community. They have a community external affairs program - Angel tree neighborhoods.

Jaxport and local teachers have got together and have planned a port based economics' curriculum for high school seniors studying economics in Duval County Public Schools. Jaxport & Big Brothers, Big sisters of North East Florida & Kessler Mentoring have a program whereby Port workers mentor students at a local middle school. Jaxport contributes to annual college scholarship fund, coordinated by the International Long Shore men's Association. (ILA Local 14087) to send high school students to college.

Jaxport partners with regional Chamber of Commerces & Duval County Public Schools to provide internships for the Port Authority and other business for students attending information technology career academies and the two area high schools, Raines high School & A. Philip Randolph. Roy got into the business via his family, his grandfather and father were in the business. He has been in it 45 years and in those days people got their jobs via word of mouth. He has been in clerical, sales, management and port operations.

Career Academies.

Programs in high schools offer structured personalized learning through career related classes with a focus on technical skills for chosen industries.

Transportation themes career academies have two tracks.

- a. International business and marketing
- b. Logistics & distribution

So grads can enter the work force with skills for a variety of positions.

Jaxport supports international trade and business academies in the two area high schools. Jaxport career day speakers address local schools.

Jaxport is at the crossroads of the nation's rail & highway network. 1-10, 1-175, & CSX, Norfolk Southern & Florida East Coast Railway.

Jacksonville Intermodal. Strategically located at the southeastern corner of the United States, Jacksonville offers the best intermodal connections in the South Atlantic. More than 55 million consumers are within an eight-hour truck drive of all three JAXPORT marine terminals, each of which is minutes from an Interstate highway. More than 100 trucking and drayage firms operate in and around Jacksonville's port to take advantage of the city's highway system, anchored by I-95, I-10 and I-75.

Jacksonville offers more than 36 daily trains via two Class I railroads – Jacksonville-based CSX Corporation (CSX) and Norfolk Southern (NS) – and one regional railroad, Florida East Coast Railway (FEC):

CSX provides port customers access to its 22,000-mile network that reaches 23 states and Canada; NS operates approximately 21,000 route miles in 22 states and the District of Columbia, connecting port customers throughout their rail network; and Florida East Coast Railway offers multiple daily departures servicing locations from Jacksonville to South Florida.

CSX provides on-dock rail at the Blount Island Marine Terminal. Talleyrand Terminal Railroad, Inc. provides direct switching for Norfolk Southern and CSX at the Talleyrand Marine Terminal. The facility is only minutes from FEC's intermodal ramp.

DAVE SESSUMS

VICE PRESIDENT. INTERNATIONAL SHIP REPAIR & MARINE SERVICES PORT OF TAMPA

46. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

Very concerned. Dave is Chairman of the Propeller Club. (www.propellerclubtampa.com) The Propeller Club is in partnership with the education community through collaborative associations with Hillsborough County Public Schools, Hillsborough Community College and the Adult Technical Centers. The Club's Education Committee is focused on expanding the growth and training of the maritime industry workforce. There are 450 members in all industries.

47. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes. Current program existing, see below:

The Maritime Program at Black High School

The Maritime program at Blake High School is a new endeavor in Maritime Education. The program will consist of a holistic curriculum anchored to 16 instructional units. This year, 15 freshmen are participating in the first Maritime class. With tremendous support from the community including the International Propeller Club, Marine Engineers Beneficial Association, and the Port of Tampa we plan on expanding the program to two freshmen classes next year and create additional course offerings at the middle schools that feed students to Blake.

Students in Maritime work together in the Maritime class and a Biology class, this concept is referred to as a cohort in middle and high school. This cohort allows the program to use a Career Academy model. The Maritime Academy will begin its certification process for Career Academy credentials next year. This rigorous process will allow the Academy to offer Industry Certification (Basic Safety Training), expand the cohort scheduling, strengthen industry relations, and include a student organization. These components provide the students with an authentic learning experience in preparation for Maritime post-secondary education and Maritime careers.

The Maritime curriculum touches on major aspects of the industry and is a one-of-a-kind model. The curriculum has been developed by Industry partners over the last two years and written by contextual learning trained teachers. This approach allowed the development of a truly industry driven problem-

based rigorous curriculum. The curriculum is organized around 16 instructional units. These units include: Careers, Ships, Engineering, Oceanography, Admiralty Law, Port Operations, Marine Biology, and others. The variety of scope in this curriculum would require tremendous resources to create a Maritime library for student use. Therefore, multiple industry Internet sources for student activity design. Combined, the curriculum is easily transferable and ready to implement at sites across the nation. As a capstone, we plan on creating an internship program for students over their junior year summer break that will include career exploratory On-the-Job-Training opportunities during their senior year. Currently, we are working on creating standards that meet state requirements to create a state approved course list for dissemination to all Florida Middle and High Schools. Once complete, this program will meet the demands of the Maritime Industry to provide high-skilled, motivated, workers for all areas of Maritime.

- Maritime Program - Jefferson High School (info. pending)
- Maritime Program - Stewart Middle School (info. pending)

Maritime Program at Blake High School

Jakub Prokop	Dave Sessums	Greg Quintana
Curriculum & Helios	Tampa International Propeller	Marine Engineers Beneficial
Jakub.prokop@sdhc.k12.fl.us	Club	Assoc
813.451.5314	Education Committee Chair	Helios Sub-Committee Chair
813.247.1118	dsessums@internationalship.com	gquintana@mebaunion.org
	813.249.7223	813.247.7223

48. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional/management. Estimators, project managers, naval architects, admiralty attorneys and management.

Skilled/technical. IT specialists, Communications and electronics' specialists, automated radio communications. As technology advances on the shipping world both on board and on shore, we must rise to the occasion with training the future work force.

Semiskilled sector. Equipment operators, welders, fitters, dock master, electricians, clocking crews and sand blasters.

49. From which institutions do you hire from?

Basically from customers and via word of mouth, generally specialized positions and it is important to have known excellent workers.

50. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No, not any pertinent courses in Florida which is why we instigated our program with local high schools.

51. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Yes, for instance our estimator recently joined us from Mexico. On occasion we send employees for out of state training to San Diego and Rhode Island for a dock master course. Diesel course at King's Point, N. Y. during their summer program. We also have used University of Ohio.

52. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

The seven Merchant Marine Academies are prominent. The Harbor School in New York's Governor 's Island. and in Toledo, Ohio.

53. Are tuitions typically paid for by the company or by the students from your industry?

We give some support between 15% - 25%. Students from the industry pay for their own.

54. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

The future work force must be trained to meet the demands of today's world. The key is the engagement between industry and schools. The Propeller Club encompasses teacher programs, 3/4 companies. This program is two sided, teacher externships. Students get to intern. Tampa port makes guest speakers available and conducts field trips.

Currently we have 60 students in the high school program, 15 in the magnum honors program. There is a total lack of training especially in looking ahead for the next 50 - 100 years. As costs increase around the world, as we move consumer goods around the world, raw materials changes the costs, and the standards of goods change. What starts out with low costs raw materials in one country eventually changes to another country. As the industry grows the cost of transportation grows. Technological requirements keep increasing. We must do more to attract younger people to the industry.

During WWII, we were forced to rise to the occasion in the maritime industry but since the war, the industry has been neglected. We must rise to the occasion again.

We conducted some focus groups and what overwhelmingly came out of it was we put the tasks to students that they are problem solvers. They have practical tasks to do and become problem solvers, in other words they do not sit in a classroom doing theory, they take a practical position in internships etc.

Location. Academy should be right here at the Port of Tampa where we already have a local high school program.

NOTES. Tampa port handles 40% of all the cargo in and out of Florida. In 2011 the port handled 34M tons of cargo. It is the largest port in Florida - 5,000 acres.

In 2012, 974,259 passengers were handled.

The port generated \$43M and \$15B in 2012 to the economy of the surrounding area. It is responsible for 80,000 jobs, direct and indirect jobs. Within an 8 hour drive there are 30,000 customers.

Dave Sessums started in the business when he was 12 years old. After college and an engineering degree he went to N.Y. University - a scholarship in English.

Safety initiatives are mandated by Ports of America.

Tampa Cooperative Safety Initiative (TCSI)

WAYNE STUBBS
EXECUTIVE DIRECTOR. PORT OF PANAMA CITY
55. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

We are an operating port handling cargo, managing warehouses, equipment. concerned about cargo handling, forklifts, crane operators, and warehouse management. Currently no training plans in place for the future

56. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes. We are a blue collar working area. We do not have training programs in place, tend to hire skilled labor.

57. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. Being a small port there is not such a demand for turnover in management.

Skilled/technical sector. Need IT, planning, data control, inventory control, logistics and diagnostics. Financial team of 8/9 will be needed.

Semi-skilled sector, cargo handling and procedures. Attracting stevedoring personnel is a real challenge as well as supervisory planning.

58. From which institutions do you hire from?

N.Y. University logistics program. Technical managers locally. Management, operations manager from American Association of Ports Association

59. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No currently insufficient training. Need warehousing operations shortage and logistics. Need training pool.

60. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Currently recruit from the University of Tennessee, Cheps in Orlando. Data skills needed. Analysis skills are a growing demand.

61. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

Savannah Ga., Southern University locations, N.Y. logistics program Kings Point Academy. Merchant Marine Academies.

62. Are tuitions typically paid for by the company or by the students from your industry?

Improved skills for the employee are paid by the employer. Students' courses are not paid by the port.

63. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

"Intermodal" - expression over used. Maritime, there are a few existing schools in Florida offering a logistics program. Need a training center, possibly in Orlando so it is centrally located

NOTES. Wayne got his experience at the Port of Savannah in terminal operations and general port management. Port is dependent on manufacturing companies and their cargo. Wayne spends half his time in attracting manufacturing plants to grow the cargo business. Works with the Gulf of Mexico for growth.

10,863 jobs locally creating \$1,442,468 in economic activity. \$467.8M wages/salaries by Port in 2012. Sister port to Port of Progreso, Mexico.

JOHN WALSH

CHIEF EXECUTIVE OFFICER. PORT OF CANAVERAL

64. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

Current maritime academies which are out of the State of Florida have limited admission. They are not tied in with port activity, they are expensive and most of the time prohibitive for families to be able to afford them. We do ongoing training and we are a port of call and homeport for the cruise vessels. There is a shortage in the exporting, manufacturing, logistics industries for well qualified personnel. There is nothing in Florida. Here, there is a 4 year BA program, usually MDB is earned when on the job. It would be good to include the vessels themselves for hands on training.

65. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Yes, definitely do. There are dangers in every corner, the more training; the better it is for an informed employee. This helps also in our insurance rates.

66. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional/management. As we double our business in the cruise area and we increase our cargo business tenfold, we will need to hire senior management.

Skilled/technical. This area is growing significantly

Semiskilled. In the next ten years we will be doubling our staff here at the port. At entry level employees need to be more skilled and conversant in port life.

67. From which institutions do you hire from?

We hire from a variety of Universities, retired Coast Guard and Merchant Marine Academies such as in New York, we look at Military Academies. Additional recruits come from University of Central Florida and Brevard Colleges. We try to hire personnel who have maritime training and knowledge.

68. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

There is a lack of training and a huge void in Florida. There is a program at Resolve in Fort Lauderdale which pilots and cruise lines utilize.

69. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Yes, we try Florida first and then go out of State. We utilize AAPA, publications on line and online websites.

70. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

Merchant Marine Academy in New York, Maine and Texas

71. Are tuitions typically paid for by the company or by the students from your industry?

The company pays for continuing education programs, for such people for instance as pilots. Students pay for their education.

72. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

Job opportunities are in demand for the future at the port. Students must be made aware of port life, Jones Act, Shipping etc. The Fl. Maritime Academy should be tied into State Schools. Affordable tuition is key to a good base in Florida. Students from high school, the military come out with an Associate's Degree. Universities here have the classic BA. Then learn the job when employed. Interns are ahead with their knowledge of the port life. When hiring, currently hire a senior worker because of the experience, a man who has been 15 years in Coast Guard is knowledgeable.

Location. The Academy should be centrally located in Florida so it can serve the State. We are at dynamic crossroads and industries. At or two hours from Canaveral in conjunction with State Colleges and Universities would be ideal.

NOTES. In 2012 Carnival, Disney and Royal Caribbean handled 4M passengers in the next ten years we plan to double the number of passengers to 8M. - in 2015, 5M passengers and in 2017, 6M passengers and so on. In 2017 we plan 11 homeport cruise vessels. Cargo volume is currently 3.9M tons. We plan to double this in the next ten years. We will be expanding our container systems, tank farms and lime rock businesses. We currently have 17,000 jobs at the port and plan to double this in the next ten years. The channel will be 55'. High speed rail will give us central connections. The airport in Orlando is 1 hour away. The auto train is one hour west of the port. With NASA on the Space Coast, there are massive resources from Coast Guard and Naval Officers, there are more

engineers here than in any other part of the world. The University of Central Florida, 65,000 students has an excellent curriculum headed up by Dr. Head. Also, there is the Florida Institute of Technology. There is a lot of political support here in this area.

John Walsh came from a background of civil engineering and construction management in Philadelphia market place and on the waterfront. Has an MBA. Had experience from being at sea, a pilot, harbor master, marine terminal operations, and naval yards.

DON WEST

DIRECTOR PUBLIC WORKS & PORT DIRECTOR OF FORT PIERCE

1. What is your primary concern regarding having a sufficient well-trained workforce in coming years?

That we have well trained and certified employees to handle port jobs as we grow. Most of the specialized folks travel to Port Canaveral or Port of Palm Beach to work daily. This has become a bedroom community.

2. Do you believe you will experience increased efficiency and safety with trained staff in your entry level positions?

Absolutely yes, better informed employee produces better

3. What kinds of jobs do you perceive you will need to be filling over the next decade in professional/management, skilled/technical and semiskilled sectors?

Professional management. At the port Indian River Terminal hopes to expand and therefore we will need trained upper management especially in operation. Most of the management who live in this area go to Ports Canaveral and Palm Beach daily to work. If mega yachts come to the port and other vendors, certified employees won't have to travel to Canaveral and Palm Beach to seek work and keeping these people here will expand out tax bracket.

Skilled/technical. Maritime research institutions created the need for training curriculum at the local educational center. There's an ocean research company in Martin County as well as other marine research institutions in the area, (the estuary here has brought them here), but local educational facilities have risen to meet their needs in their curriculum. They have a good relationship together. It is hoped that Indian River State College and F.A.U. will develop a curriculum to meet the expansion at the port.

Semi-skilled sector. As the port expands, facilities at the port will expand such as customs. There is a customs facility at the airport currently but there is an arrangement with the port and customs to handle foreigners arriving. It would be good to have a permanent facility at the port should the demand be there. There is a free trade zone at the airport as the port gets busier it would be prudent to have a free trade zone at the port.

4. Which institutions do you hire from?

Hiring referred to Ken Roberts at the Indian River Terminal

5. Do you believe Florida currently provides sufficient industry-specific training resources to help meet those needs? If so, where?

No Florida does not have a cohesive educational plan for the maritime industry. However, currently, the port of Fort Pierce doesn't have the necessity; hopefully it will have in the future.

6. Do you presently recruit/hire outside Florida and/or send employees for training outside Florida?

Again, refer the answer to Ken Roberts at Indian River Terminal

7. What colleges or trade schools anywhere in the U.S. are you aware offer curricula specific to meeting industry needs and your company's needs as well?

I am aware of the Merchant Marine Academies in Texas an King's Point. Don attended King's Point as well as his brother.

There is a small maritime school in Martin County, the Chapman School of Seamanship. Offers courses to vocational and commercial maritime personnel.

The other Maritime Training Academy facility is at Fisherman's Wharf at Fort Pierce Port. Curriculum covers maritime leisure and commercial personnel. (Roberto Valletto, Director)

Both curriculums are in a separate report.

Dr. Massey, Dr. Roberts at Indian River State College work on curriculums to enhance attracting businesses to the area, they intend to design a curriculum to support the expansion of the maritime business at the port. I.R.S.C. is a community corporate training institute.

8. Are tuitions typically paid for by the company or by the students from your industry?

Continuing education is generally paid by the company.

9. How do you believe a Florida Maritime/Intermodal Academy could assist in providing the needed future workforce? How do you think it would need to be structured/located to meet your needs?

As trade expands in Florida, with the additional cargo coming from the Panama Canal expansion in 2016, the demand is here in the State of Florida to get our own Academy to train our folks so they don't have to go out of State to get training.

Location. Fort Pierce Port, where there is a small maritime academy, a very willing state college and another seafaring training school nearby in Martin County. Also, there is a big desire from elected officials to develop an academy here. Of course, if the port expands, the workforce should be well trained and will expand too.

NOTE: In St. Lucie there are some key big companies, - Tropicana, Liberty Medical, PGA of America, Wal-Mart distribution center and Q.V.C.

One of our initiatives is The Green Collar Task Force; it is one of its kind in Florida. The G.C.T.F. is a collaboration of representatives from St. Lucie County, Government, Workforce Solutions - a non-profit organization and a partnership of 8 trade unions.

There is also a large bioscience area - Torrey Pines Institute for Molecular Science, Mann Research Center, the Oregon Vaccine & Gene Therapy Institute and Tradition Center for Innovation.

Aquaculture interest - Harbor Branch Oceanographic Institute, U.S. D. A., I. F. A. S. and F.A.U.

The Port of Fort Pierce has 34.65 privately owned acres, 87.6 acres undeveloped.

Don comes from a maritime family; his father was overseas in maritime business. He and his brother went to Merchant's Marine Academy, King's Point. Don has been in the business 33 years.

Review of Cruise Industry Workforce Demands

Members of the Florida-Caribbean Cruise Association participated in this study and provided insight into the land- based operations in the cruise industry. It was unanimously stated that training was paramount to operations, in particular, customer service training. Employees serving as greeters, porters and ambassadors provide the first impression of the cruise experience. These positions are typically hired through third party contractors who usually maintain their own training standards. Even though these employees are not directly employed by the cruise lines, they are vital to business success

Review of U.S. Maritime Administration Involvement

The U.S. Maritime Administration (MARAD) supports the maritime education efforts throughout the country. During the study interview, representatives of MARAD provided input on the needs, demands,

and opportunities for maritime and intermodal education. It was made abundantly clear that the current maritime academies more than sufficiently supply the industry with onboard personnel. On the other hand, land-based positions were identified as being needed from the state and regional perspectives and related workforce training as being vital to providing adequate staff.

Review of Economic Opportunities

A representative of Enterprise Florida, Inc., a public-private partnership promoting economic development for the state of Florida, provided input. Through their own efforts and programs, this organization encourages workforce education and training throughout the state.