

Florida Credential of Value Workgroup Report

MARCH 2022

*Submitted to the Florida Department of Education's Division of Career,
Technical, and Adult Education*

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Introduction

Under the leadership of Governor DeSantis, Florida has set a bold goal of becoming the number one state in the nation for workforce education by 2030. Reaching this goal will be an important step towards driving economic and social mobility among Floridians while building a pipeline flush with talent for Florida's in-demand, high-wage jobs of today and tomorrow.

At the core of this goal is the expectation that Florida's education and workforce training systems have a clear sightline into which training programs will lead Floridians to careers in high-value fields and the corresponding credentials that will open doors to employment. As economic shifts reshape the world of work, it is increasingly clear that thriving in present and future times will require some level of postsecondary education or training.

Robust systems that pinpoint, understand, and prioritize credential-based pathways to high-value fields will be key to Florida achieving its goal, with particular emphasis on shorter-term credentials that are quickly gaining relevance in labor markets, especially in times of economic downturn, and appeal to traditional and non-traditional learners. Becoming number one in workforce education will require deep partnership between the Florida Department of Education (FDOE), the Department of Economic Opportunity (DEO), CareerSource Florida, and the state's new REACH office all subscribing to a similar vision of success and shared accountability for results.

Together, their efforts to build and sustain a state-of-the-art workforce education system must be aligned to a statewide framework for defining a credential of value – a framework that effectively captures demand and appreciates the ability of both non-degree and degree-connected workforce programs to change lives. Such a framework should be used to identify credentials needed within priority occupations; embed those credentials into high-quality career pathways and programs; and help inform policy and targeted funding incentives to drive equitable access and attainment of those credentials by all learners, but especially those who are underrepresented in family-sustaining wage roles, including learners of color and those experiencing poverty.

2021 REACH Act

In 2021, the Florida legislature passed the Reimagining Education and Career Help (REACH) Act, a comprehensive bill that requires the state to rethink its workforce education system at scale. At its center, the REACH Act intends to bring the various parts of Florida's workforce education ecosystem together with employers to ensure that state education and training systems match the growing and dynamic needs of the labor market. To that end, the legislation specifies several important roles in this work. Namely:

- The Labor Market Estimating Conference (LMEC) will examine and project occupational supply, demand, and gap analyses within Florida's labor markets;
- The LMEC will also calculate entry-level and middle-level wages for all occupations currently active in Florida. Florida leadership has requested that the LMEC calculate wage projections for each occupation in Florida *based on the educational level associated with each occupation*. Doing such will create groupings or clusters of occupations—separately for each educational level—based on natural breaks in the wages associated with occupations;
- A Credential Review Committee – with representation from FDOE's division of career and adult education, the Florida College System, the State University System, REACH, urban and rural local workforce boards, private postsecondary institutions, industry associations, the business community, DEO, and the Department of Agriculture - will be convened and facilitated by CareerSource and will be the entity responsible for creating a Master Credential List for the state of Florida. The Credential Review Committee will be responsible for establishing thresholds associated with occupational earnings, and thresholds associated with in-demand occupations, which will both be applied to the LMEC's data to determine occupations that meet wage and demand thresholds.

Moreover, the legislation also laid out particular requirements for determining credential value. Specifically, all credentials—both non-degree and degree—must meet clear indicators of labor market demand, either at a statewide level or at a local level according to criteria adopted by the Credential Review Committee. Non-degree credentials of value must also, at a minimum, require learner competencies that are aligned with labor market demand and provide evidence of employment and middle-high wage outcomes for those who have earned the credential. Finally, for non-degree credentials that do not meet the middle-wage thresholds using data calculated by the LMEC and set by the Credentials Review Committee, the REACH Act specifies that such credentials can still be considered high-value if they are part of a sequence of credentials that

are required for the next level in-demand occupation that does meet wage considerations. In other words, non-degree credentials that fall below the wage threshold have acceptable value if they “stack” to another credential that leads to a middle or high-wage employment opportunity.

Florida’s Credentials of Value (CoV) Workgroup

At the time of the 2021 REACH Act’s passage, FDOE had already begun working with Education Strategy Group (ESG) to conceptualize a Credential of Value (CoV) framework and a corresponding methodology to determine which credentials meet the value indicators within the framework.

Leveraging ESG’s credentialing expertise and using parameters set forth in the legislation, FDOE convened a formal workgroup of workforce education leaders and employers from across the state to advise and inform the development of a framework to identify high-value credentials within the Florida education and training ecosystem.

Workgroup members included senior representatives from FDOE, DEO, CareerSource, REACH, local school districts and postsecondary institutions, the Florida Council of 100, and the Florida Chamber Foundation. 24 members in total, the workgroup focused developing a conceptual framework of value to assess “the worth” of registered apprenticeships, industry certifications, licenses, college credit certificates, career certificates, applied technical diplomas, associate in applied science degrees, and associate in science degrees. Together, they:

- Participated in virtual and in-person working sessions between May 2021 and January 2022;
- Contributed to recommendations for defining high-value credentials and a corresponding methodology for identifying credentials that meet wage and demand thresholds as well as indicators of credential stackability;
- Considered how these indicators might be leveraged across education and workforce initiatives to increase the value and alignment of programs throughout the state; and
- Shared the development of this work with leaders within their respective organizations to capture and include their feedback throughout the process and generate support for the final framework.

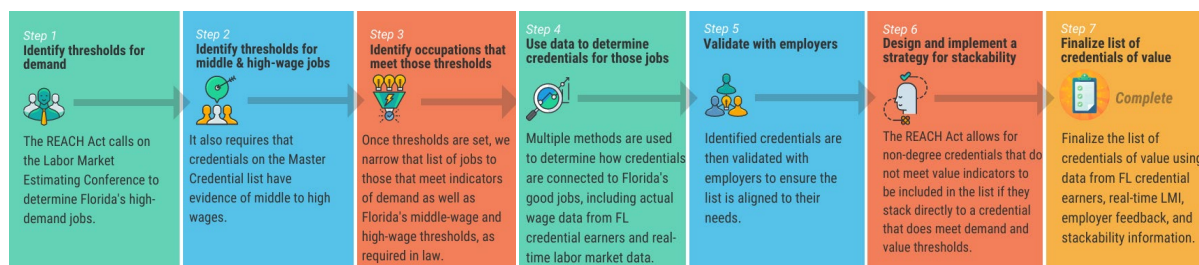
In addition, Dr. Jeff Strohl, Director of Research at the Georgetown University Center on Education and the Workforce, and John Fischer, President of Education Solutions, LLC, served the workgroup in an advisory capacity.

The 2021 REACH Act created an opportunity for the CoV workgroup to develop and test a preliminary CoV framework according to the parameters of the legislation; identify challenges, especially related to data, that limit the ways in which the framework can be conceptualized and operationalized; transfer that early work to the Credential Review Committee as a well-developed strawman to inform the state’s official CoV work; and queue up a CoV research agenda that will enable Florida’s workforce education system to drive economic growth and mobility.

The efforts of the workgroup proceeded through a series of consecutive steps summarized below, the latter parts of which are illustrated in figure 1:

- 1) Examine the national landscape to understand the range of philosophies and methodologies being used by leading states to define and identify CoV;
- 2) Study leading wage threshold methodologies to determine which Florida might consider using to identify high-value, in-demand occupations and their associated credentials;
- 3) Apply demand thresholds determined by the workgroup, using existing demand thresholds outlined in the DEO Statewide Demand Occupation list to identify in-demand occupations. Filter those results to cull out those that require some level of postsecondary education and training;
- 4) Use wage and earnings outcomes for non-degree credentials where possible (calculated by the FDOE’s office of Florida Education and Training Placement Information Program (FETPIP), and supplement with Emsi-Burning Glass data, to determine which occupations meet or exceed the middle-wage threshold identified by the state. Identify the credentials required or preferred for employment in those occupations;
- 5) Vet those non-degree credentials with the employer community to validate the relevance of those credentials in their talent sourcing processes. Modify the list of non-degree CoV as appropriate.
- 6) Design a set of criteria and an associated methodology to determine which non-degree credentials that do not meet the middle-wage threshold effectively stack to the next-level occupation that does meet the wage threshold.

Figure 1



Key Considerations of the Workgroup

The workgroup, led by FDOE and supplemented with expertise provided by ESG, worked through those steps in earnest in the summer and fall of 2021 to arrive at a framework for non-degree credential quality. They prioritized four questions as key considerations for their work:

1. How do we measure and balance workforce demand and wage considerations?
2. What are the implications of statewide and regional demand for occupations and credentials?
3. What are the essential elements of quality and value within the Florida credentialing ecosystem?
4. How do we ensure the voices of employers are reflected in this work to keep a strong focus on economic needs?

Examination of Leading State Practices

At its first meeting in May 2021, the CoV workgroup examined strong components of leading states' efforts to define, identify, and incentivize priority non-degree credentials. While they studied the field generally, they honed in on aspects of current work to identify CoV in Alabama, Hawaii, North Carolina, and Washington to better understand key strategies and drivers at play.



Alabama – The Committee on Credentialing and Career Pathways, which is part of the Alabama Workforce Council, is responsible for annually analyzing labor market information and data on career pathways to determine regional and statewide in-demand occupations, career pathways, and credentials of value. They target occupations that:

- I. Meet or exceed 70% of median regional wage
- II. Show annual positive growth for the next ten years
- III. Projected to have a minimum of 15 openings a year
- IV. Median wage exceeds the Lower Living Standard Income Level by 70%
- V. Requires a post-secondary degree, certificate, or credential for initial employment



HAWAII – Hawaii's Promising Credentials work includes credentials associated with jobs that are expected to increase in demand, pay a family-sustaining wage, and offer a promising career ladder. Through rigorous labor market analysis and broad outreach to the employer community, Hawaii has identified four tiers of credentials that offer value to learners and employers alike: foundational credentials, springboard credentials, door opener credentials, and advanced credentials, each of which require differing levels of education and training to meet learners' needs. The Promising Credentials methodology takes into consideration credentials for high volume occupations (250+

positions and 50+ annual openings) and those with positive growth (Positive growth and 25+ annual openings) that meet or exceed the ALICE individual wage threshold for the state.



North Carolina – As part of its work to identify high-value, non-degree credentials, North Carolina conducted extensive stakeholder outreach – especially within the employer community - about the credentials most critical to the state’s

promising occupations, which are identified through their Star Jobs work. North Carolina leaders developed a continuum to communicate the value of credentials to learners and employers around the state. This work continues to be a key element of the state’s plan to reach its 2 million x 2030 postsecondary attainment goal.



Washington – Over the past year, Washington has spent considerable effort building a quality industry-recognized credentials list. They have prioritized three criteria that are key to identifying credentials that lead to in-demand, family-sustaining wage jobs: they are valued by industry for workplace entry or advancement; they are state, nationally, or internationally-recognized; and they stack seamlessly to

additional education or training opportunities. Washington also considers regional wages when deciding on thresholds.

Questions to Consider: How can Florida leverage the work and expertise of other states to develop their own criteria for a Master Credentials List? What aspects of the work from other states are not feasible or applicable to Florida’s work?

Wage Threshold Methodologies

Next, Florida’s CoV workgroup learned about and considered three different wage threshold methodologies in use either in Florida or across the country to better understand strategies that can be brought to bear for identifying the resource level needed to support a family in Florida. Each methodology can also be used at a regional or county level to take into consideration varying costs of living in different parts of the state.

The DEO Regional Occupational Demand List, the current methodology used by Florida, is a compilation of employer surveys, modeling, and administrative records that are used to calculate the occupational employment distributions for each industry across the state. It considers current occupational demand as well as forecasted demand, and it identifies middle and high-wage thresholds. Current state-level demand criteria include 500 annual openings and average

growth rate of 1.26 percent, or 1,200 annual openings with any positive growth. Middle-wage is set at an entry-level of \$12.31 per hour and mean wage of \$15.13 per hour, and high-wage occupations are classified as those that offer an entry wage of \$15.13 per hour and a mean wage of \$23.72 per hour.

The CoV workgroup also considered the [Asset Limited, Income Constrained, Employed \(ALICE\) methodology](#), a new way of defining and understanding the struggles of households that earn wages above the Federal Poverty Level but not enough to afford a bare-bones household budget. The United Way's ALICE report uses data from Florida to identify the wage level needed for survival (i.e. housing, childcare, food, transportation, healthcare, technology, and a 10 percent "miscellaneous contingency fund"), which in their estimation equates at the state level in Florida to an hourly rate for a single adult survival budget of \$12.30 per hour; a senior adult survival budget of \$13.67 per hour; a family of four survival budget (with two earners) at \$17.38 per hour per worker; and a family of four survival budget (with a single earner) at \$34.76 per hour. **Note: The stability threshold from ALICE is not described here and may be considered as part of the CoV work.**

Finally, the CoV workgroup studied the [MIT living wage calculator](#) that provides state and county-level hourly wage requirements that account only for the basic needs of a family based on estimates of typical cost. They set those subsistence levels at a state level for Florida at \$14.82 per hour for a single adult living wage; \$30.92 per hour for one adult, one child living wage; \$32.38 per hour for a family of four living wage with a single worker; and \$20.79 per hour for a family of four living wage with two earners. The MIT living wage calculator does not account for "non-essentials" such as pre-prepared meals, restaurant dining, entertainment, vacations or holidays, savings or retirement planning. These methodologies forced difficult conversations about Florida's priorities for this work. Workgroup members wrestled with what is meant by living wage or family-sustaining wage, and they voiced support for what can sometimes be opposing priorities, such as setting thresholds at a living wage level while also making allowances in some way for occupations that serve a social good but pay low wages. Workgroup members gathered feedback on these methodologies from colleagues within their respective organizations who often shared similar sentiments. These conversations prepared workgroup members to understand the implications of the wage threshold that would be set by the LMEC for purposes of determining CoV.

Question to Consider: *If the LMEC data on occupational earnings is used to establish the "middle-wage" thresholds, how do these thresholds compare to the ALICE "survival wage" and MIT "living wage" thresholds?*

Selected Demand Thresholds

Because the LMEC did not plan to issue demand thresholds for identifying CoV in 2021, the FDOE recommended that the workgroup use the state's existing occupational demand thresholds set by DEO as a placeholder so that the work to define and identify CoV could continue to progress. Those two demand thresholds, as described above, are:

1. 500 annual openings and an average growth rate of 1.26 percent; or
2. 1,200 annual openings with any positive growth.

ESG evaluated occupations against these thresholds to determine whether they should be considered in demand using occupational projections generated by Florida DEO.

Occupations and their associated credentials that met either or both of those thresholds were classified as in-demand.

In-demand associate degrees were not assessed for wage thresholds after this step, per the 2021 REACH Act. Occupations and their associated non-degree credentials that were classified as in-demand could be assessed for wage. Non-degree credentials associated with occupations that did not meet either in-demand threshold were removed from further economic analysis.

Selected Wage Thresholds

On October 6, 2021, the LMEC met and adopted official projections for Florida's statewide, regional, and local labor markets. The LMEC analyzed occupations and occupational groups for the state and for the 24 workforce regions for high school diploma through associate degree credential holders. Its analysis included five wage brackets, identification of current job openings, and projections for job openings three years, five years, and ten years from now.

FDOE then identified a **middle-wage threshold of \$52,540** annually using the LMEC's "medium wages" bracket classification. ESG translated this annual salary into a quarterly wage for analysis of credential earner outcomes associated with those occupations using data provided by FETPIP and the Bureau of PK-20 Education Reporting and Accessibility (PERA), and they adjusted it to an hourly wage to analyze occupations within the DEO's occupational projections for the identification of associated industry recognized credentials in Emsi/Burning Glass. Business rules for this analysis are provided later in this report. In-demand non-degree credentials associated with occupations that exceeded this middle-wage threshold were included on a preliminary CoV list.

Question to Consider: *Is the \$52,540 annual wage threshold in line with Florida’s goals for its CoV work, and might the CRC consider alternative earnings thresholds?*

The \$52,540 annual wage threshold is similar to but exceeds alternative methodologies considered by the CoV workgroup regarding the range of resource level needed to support basic needs of families living in Florida. For a family of four (two working adults + two children), the ALICE methodology described above suggests that a survival budget equates to an annual wage of \$36,150, while the MIT living wage calculator (shown below) suggests a living family wage to be \$43,243.

1 ADULT				2 ADULTS (1 WORKING)				2 ADULTS (BOTH WORKING)			
0 Children	1 Child	2 Children	3 Children	0 Children	1 Child	2 Children	3 Children	0 Children	1 Child	2 Children	3 Children
\$14.82	\$30.92	\$38.04	\$49.08	\$23.97	\$28.88	\$32.28	\$35.30	\$11.99	\$16.77	\$20.79	\$24.62

However, a key decision point for Florida’s work going forward will be determining at what point after credential attainment learners can rightfully be expected to earn a middle-high wage. If the state’s wage outcomes data, for example, is most complete and reliable at the 4th quarter of employment, Florida might consider lowering the middle-wage threshold to a level that recognizes reasonable middle-level earnings for learners just one year into employment. Conversely, if Florida decides to evaluate wage outcomes in the 20th quarter of employment, it can expect different earnings outcomes for learners five years into employment.

Additionally, Florida **might consider utilizing the forthcoming LMEC data that groups together occupational wages separately for each educational level.** By using these data, Florida can potentially establish a unique “middle-wage” threshold for different occupations that is appropriate for the level of postsecondary education required for the occupation.

Employer Validation

That preliminary CoV list represents a first cut at what constitutes a set of non-degree credentials in in-demand fields that labor market data—in this case, a combination of wage/earning outcomes using Florida’s FETPIP data and job ad data using Emsi/Burning Glass—suggests are required or prioritized by employers in their hiring process in roles that pay \$52,540 per year or more.

Next, the workgroup sought to verify that preliminary list with the employer community to ensure that it accurately represents the credentials they require or prioritize in their talent sourcing processes. That employer validation work took two forms.

Employer Survey

First, using an instrument developed by ESG, CareerSource surveyed employers within priority industries to get broad feedback from the field regarding the extent to which they value the non-degree credentials on the CoV list. CareerSource leaders, with the help of the Florida Council of 100, recruited employers that represent in-demand, high-wage occupations to respond to the survey. CareerSource identified employers from urban and rural parts of the state who represent small, medium, and large businesses that effectively represent the broader employer community.

Nearly 400 of those employers responded to the survey, during the month-long window over which the survey was open. The survey asked employers to identify the priority industry(s) with which they are most closely associated. It then presented the preliminary CoV list for that industry(s) and asked employers a series of questions about the extent to which they value each credential, whether they would suggest removing any credentials from the list, and if there are additional credentials they rely on in their hiring and placement processes that weren't captured in the labor market data analyses.

The 368 survey respondents represented a range of sectors and companies. 27 percent have fewer than 10 employees, while 25 percent have 11-50 full time employees. The top three regions in which respondents most commonly conduct business were: CareerSource Research Coast - Indian River, Martin, and Saint Lucie Counties (21 percent of respondents); CareerSource Northeast Florida - Baker, Clay, Duval, Nassau, Putnam, and St. Johns Counties (20 percent of respondents); and CareerSource Citrus Levy Marion - Citrus, Levy, and Marion Counties (18 percent of respondents). 18 percent of respondents represented healthcare; 16 percent represented architecture, construction, and engineering; and 16 percent represented education and training. On the flip side, only 2 percent of respondents represented arts, audio/visual technology and communications; 3 percent represented Information Technology (IT); and 3 percent represented law and public safety. The results of the survey are discussed later in this report.

Employer Focus Groups

At the same time, the REACH office recruited select employers - again representative of the broader field - to participate in focus groups in mid-February to further test and validate the preliminary list. Those in-depth conversations were designed to help the CoV workgroup - and eventually the Credential Review Committee - investigate any remaining questions about individual credentials on the preliminary list, decide which to retain or remove from the list, and investigate any new credentials that have been suggested for inclusion by employers. Focus

groups were hosted for Information Technology (IT), healthcare, advanced manufacturing, business/finance, agriculture, and construction. Approximately a dozen employers representing a range of Florida companies participated in each, including those from small and large companies as well as urban and rural companies. The results of the focus groups are discussed later in this report.

Stackability Criteria

As mentioned earlier, in-demand, non-degree credentials that do not meet the middle-wage threshold are not included within the employer validation work. Instead, the 2021 REACH Act allows them to be considered for inclusion on the CoV list if they stack to the next-level occupation or credential that does meet the threshold.

Members of the CoV workgroup helped to generate criteria that can be used to evaluate non-degree credentials for this “stackability”. They collaborated to develop draft ideas; vetted those ideas with colleagues in their respective organizations; and provided feedback to FDOE on the range of ideas under consideration.

ESG compiled that feedback and examined it against leading research to arrive at a refined set of criteria. As currently conceptualized, any credential evaluated for stackability would have to meet some of these criteria in order to be included on the CoV list:

1. Meet or exceed a “floor” wage threshold of 200 percent of the federal poverty level; (Note that once Florida moves to a \$15/hour minimum wage, that will become the floor threshold.)
2. Are part of a well-defined sequence of credentials that lead to in-demand, middle-wage opportunities;
3. Are validated and recognized by industry;
4. Are included on Florida’s gold standard articulation list or are part of statewide articulation agreements;
5. *[to be implemented once Florida has researched stackability practices across the state]* Offer evidence that a TBD percentage of credential holders (or those certifications on gold standard articulation list) actually stack that credential to another CoV in that well-defined sequence. **Note: there is evidence to suggest that not many gold standard**

certifications are actually applied to a students' program of study in the related training program.

Question to Consider: *Florida must investigate which of these criteria are necessary for a credential to be considered "stackable."*

Criteria #4 in the list above pertains to existing practices used in Florida that are a strong indicator of stackability, and these articulation agreements are recognized statewide by all Florida College System institutions.

For example, the [Gold Standard Articulation List](#) identifies specific industry certifications that, once earned, can articulate into college credit-hours towards specific Associate in Science or Associate in Applied Science degrees. Additionally, the [statewide articulation agreements](#) represent specific clock-hour Career Certificate programs that, upon completion, articulate into college credit-hours towards specific Associate in Science and Associate in Applied Science degrees.

Non-degree credentials that have been vetted by these articulation agreements may not need to meet additional criteria for stackability. However, non-degree credentials that are not already included on these articulation agreements may need to meet multiple indicators of stackability listed above.

ESG has developed draft parameters for each of these criteria (described later in this report) that Florida may adapt and adopt as it begins to evaluate each lower-wage non-degree credential for stackability classification.

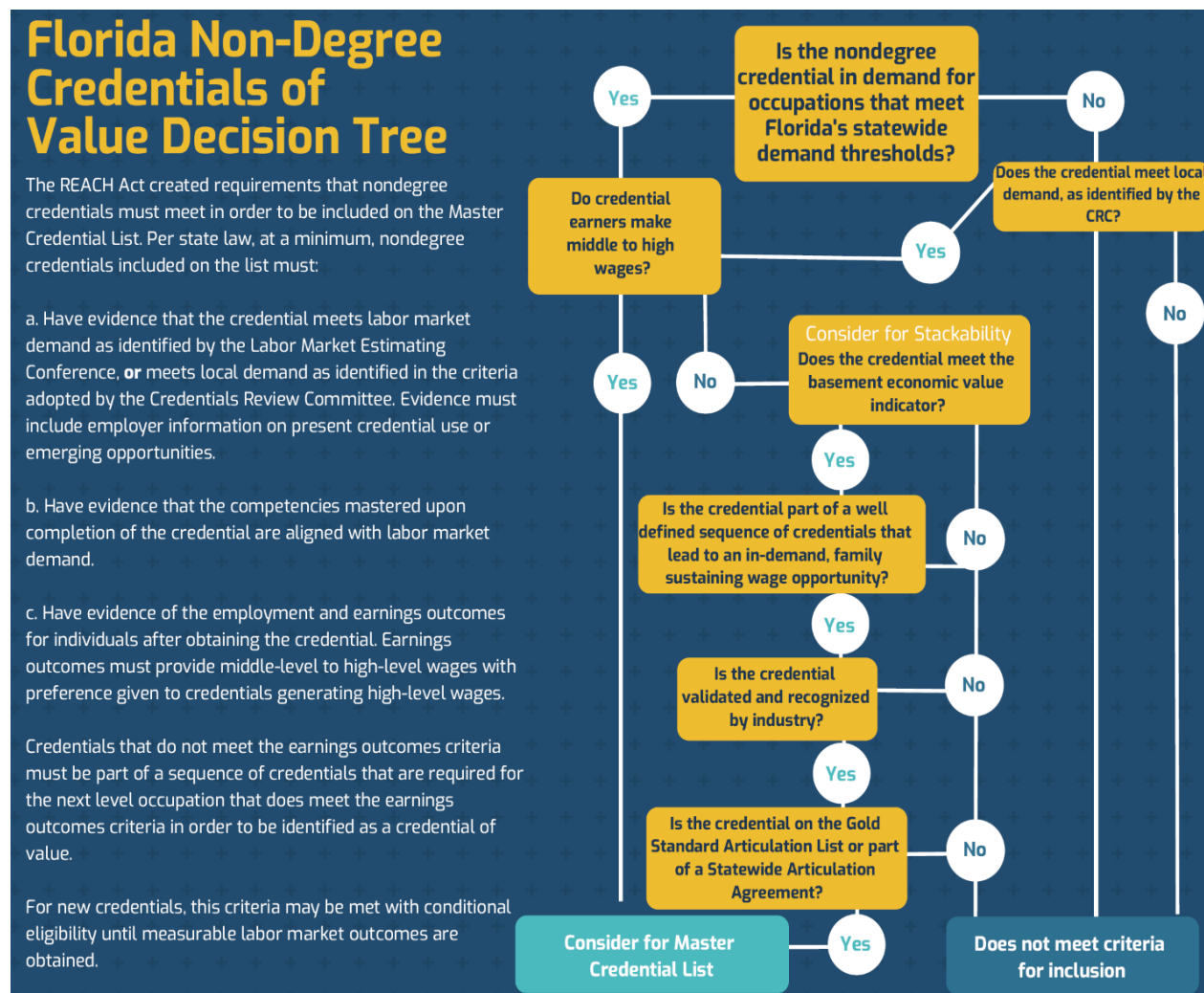
Importantly, ESG recommends that the fifth criteria be phased in over time. Florida has not yet undertaken any research to determine the extent to which learners who earn a lower-wage credential return to workforce education to earn the next-level credential in that sequence that ultimately leads to a middle-high wage role. This appears to be a necessary aspect of any framework of quality or criteria to assess a stackable credential's value.

As Florida develops its capacity to collect, analyze, and understand learners' stackability practices across the state, leaders from FDOE, CareerSource, and the REACH office can collaboratively agree on an implementation timeline for the fifth criteria and establish the appropriate threshold for the "percentage of non-degree completers who stack that credential into another CoV."

Credential of Value Framework

The efforts of the CoV Workgroup, including key leaders from FDOE, CareerSource, and the REACH office, has brought into focus a credential quality framework for non-degree credentials that can inform and help shape the Credential Review Committee's work in creating a Master Credentials List for Florida. Figure 2 below identifies the steps and thresholds that non-degree credentials - registered apprenticeships, industry certifications, licenses, career certificates, college credit certificates, and applied technology diplomas - have been assessed against to create a preliminary CoV list for Florida. In addition, ESG evaluated Associate in Applied Science Degrees and Associate in Science Degrees against demand criteria as indicated in the 2021 REACH Act, and ESG has included those that exceeded either of DEO's demand thresholds on the preliminary CoV list as well.

Figure 2



Question to Consider: *How might the Credential Review Committee (CRC) use the draft CoV list?*

The CoV workgroup sought to develop and test a methodology to identify a set of non-degree credentials that meet the requirements set forth in the 2021 REACH Act. This process should serve as a dry run to the CRC's work. The CRC should examine each of the conditions used by the workgroup—demand thresholds, wage threshold, quarterly earnings outcomes, minimum number of occupations associated per credential, etc.—to determine where it agrees or disagrees with those starting points.

The CRC must *first* determine if their process will evaluate credentials based on the actual earnings of program and industry certification completers using FETPIP data.

If this approach is selected, the CRC should examine and test wage outcomes data available for Florida non-degree credential earners to determine whether they want to use earnings at the fourth quarter, 12th quarter, and/or 20th quarter of employment post credential attainment for analysis.

The CRC might then use that decision to determine whether to make adjustments to the wage threshold used to identify “middle-wages.” It should also identify unusual cases and determine whether and how to include them in analyses, e.g. part-time workers whose annual wages fall below the identified threshold.

The CRC will also need to collaborate with DEO to establish a linkage between postsecondary industry certifications and SOC codes.

Analytics Process & Associated Business Rules

The following information provides additional detail regarding ESG's analytics in working through the steps of the non-degree credential framework described above. Note that the data request collaboratively prepared by ESG and FDOE and submitted to FETPIP is included in the appendix of this report.

Wage Earnings/Outcomes

The 2021 REACH Act allows for the identification of high-value non-degree credentials using employment and wage outcome data of credential completers. FETPIP is the appropriate data source to identify wage outcomes for Florida's credential completers tracked into the paid workforce, but PERA data must first be consulted to generate cohorts of students who have earned credentials (certificates, ATD's, Apprenticeships or industry certifications) within the Florida College System, District Technical Colleges, or K-12 system. Upon creation of the cohort files, PERA forwarded these data to FETPIP to pull in wage outcomes of these non-degree

credential earners. The FDOE provided to ESG a program-to-occupation (CIP-to-SOC) linkage that identified a single occupation (SOC) aligned to each postsecondary program of study. However, a significant portion of the industry certification data that ESG received lacked SOC codes. Currently, Florida does not have an established crosswalk that links postsecondary industry certifications to SOC codes. Where data was not available in-state or was incomplete, ESG used DEO's 2019 labor market information to estimate wage outcomes. An established crosswalk is necessary, then, before work may move forward in the development of a formal framework.

Further, the 2021 REACH act does not specify the point of employment at which wage outcomes should be analyzed, e.g. wages after one-year, three-years, or five-years of employment post credential. ESG consulted with data specialists at FDOE and FETPIP to determine the appropriate measurement point. It was determined that wages earned in the fourth quarter of employment post credential attainment would yield the most complete set of data for analysis and would offer a consistent measurement approach methodologically. Of the quarterly wage outcomes provided, the fourth quarter also provided the most relevant point at which a credential helped learners find employment.

Question to Consider: *In these analyses, how should Florida incorporate multiple SOC code linkages to each postsecondary program of study or industry certification?*

As part of the ongoing work to better assess the alignment between postsecondary programs and occupations, Florida is engaged in updating and enhancing their CIP-to-SOC crosswalk. In the Florida postsecondary sectors, programs of study are identified by a 6-digit CIP code. These CIP codes can be aligned with more than one occupation (SOC code). In other words, given postsecondary programs train students for a variety of occupations. Using the forthcoming enhanced Florida CIP-to-SOC crosswalk, state leaders should consider how more than one occupation might be assessed on labor market demand for each program of study that is reviewed for inclusion on the Master Credential List.

Within the FETPIP data file of *All Found Employed*, ESG used the following guidelines to identify credential outcomes:

- **Sample size:** For credentials earned between 2018-2020, there must be at least 10 earners with Students with 4th Quarter Post-Earnings Data to conform to Florida's data practice in providing a sample size large enough to draw conclusions about value.
- **CIP/SOC Codes:** Each credential requires a primary SOC code in order to be mapped to a specific occupation and its demand data within the DEO occupational projections. Any earned certificates without a SOC code were removed from the data set.

- Wages: Using the column *4th Quarter Post-Earnings Median Wage*, identify the credentials with wages of at least \$13,135, the quarterly equivalent of \$52,540 annual wages. For purposes of this analysis, ESG used 4th quarter earnings exclusively given the severe window of time allowed for analysis and the completeness of the earnings data available. Future analyses by Florida may choose to consider 12th quarter and/or 20th quarter earnings.
- Employed Full-Time Unduplicated Counts: If earners are found employed full-time and part-time in the same quarter, FETPIP will only count once in the full-time sheet so that students are unduplicated. For the purposes of this analysis, ESG used earnings outcomes from credentials earners found employed full-time, regardless of continuing education status. Wages from full-time employment were used to reach the best proxy for an annualized salary to compare to the wage threshold.

Within the DEO and Emsi data, ESG used the following guidelines to identify in-demand, middle-wage occupations and associated credentials:

- Wages: Using the *2019 Hourly Wage Median* in the 2019 Florida Occupational Employment and Wages file, identify occupations with hourly wages of at least \$25.26, the hourly equivalent of \$52,540 annual wages.
- Demand: Using the demand thresholds of 500 annual openings and an average growth rate of 1.26 percent; or 1,200 annual openings with any positive growth, identify occupations that meet both wage and demand thresholds. (Note that ESG used DEO's occupational demand files—and not Emsi job ad data—to measure occupation openings. Should Florida decide to use Emsi data for this purpose going forward, Emsi has a deduplication process to reduce the impact of picking up the same ad across multiple job boards. In addition, they rely on state data from DEO as well as Emsi industry data and staffing patterns to measure annual openings.)
- Job Ad Data: Upon identifying occupations that meet both wage and demand thresholds in the Florida occupation file, search for each occupational SOC code and clip the associated qualifications data from Emsi. Assign each qualification a type, paying special attention to bachelor's degrees, advanced degrees, and qualifications that require a bachelor's degree or higher to obtain. Remove these qualifications from the data set. Vendors, commercial drivers licenses, and security clearances should also be removed.

Review each row of the job ad data to ensure each credential makes sense for the corresponding occupation.

- Credential Demand:** After cleaning the job ad data as described above for industry-recognized credentials, identify a threshold for the number of job postings referenced per occupation. In this case, ESG chose to use the mean number of occupations associated with an industry-recognized credential, i.e. credentials were identified as in-demand if they aligned with at least 8 in-demand occupations. The goal of this step is to prioritize industry-recognized credentials that give learners a range of high-value occupations from which to choose when pursuing professional opportunities rather than narrowly qualifying them for just a few potential roles. (Note that credentials pulled from locally-available outcomes data may have less than 8 associated occupations. Credential demand thresholds were used exclusively for industry-recognized credentials identified through Emsi.)

Table # 1: Hourly Wage Thresholds

Hourly Wage	Threshold	Definition
\$12.38	Initial Floor for Stackability	200% of federal poverty level 2021 for a single person: \$25,760 divided by 2080 hours. Evaluate these occupations for stackability.
\$15.00	Adjusted Floor for Stackability	Implementation of the \$15/hour minimum wage in Florida triggers this new “floor” threshold. Evaluate these occupations for stackability.
\$25.26	Middle Wage	\$52,540 annually divided by 2080 hours

Table #2: Quarterly Wage Threshold

Quarterly Wage	Threshold	Definition
\$6,438	Initial Floor for Stackability	\$12.38/hour times 520 hours worked in one quarter
\$7,800	Adjusted Floor for Stackability	\$15/hour times 520 hours worked in one quarter
\$13,135	Middle Wage	\$52,540 annually divided by four quarters

Table #3: Data Sources

Data Source	Uses	Priority
FDOE/FETPIP	<p>Wage Outcomes Data</p> <p>Certificates earned through Florida career-technical education programs, colleges, universities, local testing sites, or accessed online</p> <p>Evidence of Stackability</p>	<p>Prepared by the FETPIP and PERA data offices, this is the first source to use for 4th Quarter Post-Earnings wage outcomes for the following credential types: college credit certificates, career certificates, applied technology diplomas, Associate in Applied Science (AAS) degrees, Associate in Science (AS) degrees, and registered apprenticeships.</p> <p>See Appendix 1 for data fields, definitions, and uses.</p>
DEO 2019_allms as file	Occupational Wage thresholds	Prepared by the Florida Department of Economic Opportunity, the each occupation's 2019 Hourly

	Evidence of Stackability	Wage Median was used as the secondary wage source
DEO stw	Occupational Demand	<p>Prepared by the Florida Department of Economic Opportunity, this is the primary source of occupation demand. Specific fields used included:</p> <ul style="list-style-type: none"> • SOC: to match occupation wage and outcomes data across files • 2028 projected growth: to determine eligibility to meet the demand threshold of 1.26 percent average growth rate or positive growth, and • Annual openings: to determine eligibility for 500 or 1,200 openings, in line with the demand thresholds listed above.
Emsi	Industry Recognized Credentials, Licenses and Associate Degrees	Emsi was used as the primary data source for industry recognized credentials aligned to occupations that met the wage and demand thresholds

Question to Consider: *How might Florida approach a credential that is aligned with fewer than eight in-demand occupations but is growing substantially or has a significant number of openings in the aggregate?*

The important priority to maintain in the process of identifying credentials from job ad data associated with in-demand occupations is to design and implement with fidelity a methodology that provides a range of high-value workforce opportunities for learners. Florida might run multiple analyses using different credential demand thresholds - starting with the mean and examining thresholds just above or below the mean - and analyze the results to determine the variability of credential identification results using those different thresholds. In addition, Florida might establish a threshold for both the number of associated occupations and/or the number of job postings in which the credential is referenced to allow for credentials in growing fields to make the “cut”.

Data Challenges

During the data gathering process, issues in fulfilling the data requests were identified, and some were resolved prior to receiving the FETPIP files. One challenge that was not resolved during the data exploration process was missing SOC codes for industry certifications and postsecondary credentials within the Florida College System, District Technical Colleges, and K-12 system. For example, within the postsecondary credentials file, nearly 5,300 rows of data for Earners Found Employed did not have a SOC code attached to their credential. At the time of this data pull, FDOE only maintained a CIP-to-SOC crosswalk for programs of study that were offered in either the Florida College System or the technical college system. Without a SOC code linked to a program or industry certification, and on the timeline available to ESG for this work, it was not possible to map to an occupation and determine if the credential was associated with an in-demand, middle-wage occupation. Similarly, the industry certifications file provided by FETPIP did not have SOC codes, leading ESG to use Emsi qualifications data in lieu of locally available data. Currently, the FDOE only maintains a list of industry certification-to-SOC codes for secondary industry certifications; a comparable crosswalk does not exist for postsecondary industry certifications. To standardize how all industry certifications were reviewed, ESG opted to use Emsi data for all industry certifications.

A few noteworthy challenges identified and resolved within the PERA data request include the definition of a “high school completer,” which was determined to be anyone who earned either a high school diploma, GED, or certificate of completion. When looking at high school completer records, PERA looked for industry certifications in the Reporting Year graduation (“completion”) and the previous three years. However, due to a change in the data structure in 2014-15, PERA could only look as far back as 2014-15 for industry certifications. This means they weren't able to look at the three previous Reporting Years for the 2015-16 completers and 2016-17 completers, leaving the earliest and most complete cohort to be 2018. This is a challenge to consider for future uses of the locally available industry certification data.

Separately, upon receiving draft postsecondary credential data, ESG, FDOE, and FETPIP decided to combine cohorts of credential earners in an attempt to meet the needed sample size (n=10). Students who earned the same credential and had wage outcomes data available were grouped by the following completion years:

- 2010-2011
- 2012-2014
- 2015-2017
- 2018-2020

Draft CoV List

The following industry-recognized credentials, career certificates, college credit certificates, and apprenticeships are associated with occupations that meet both demand and wage thresholds. The draft list below is largely a combination of reported completers of college and district sub-associate-level CTE programs and earners of secondary and postsecondary CAPE certifications ESG’s data request, developed in partnership with FDOE, included the non-degree credential categories outlined in the 2021 REACH Act, i.e. all industry-recognized credentials that have been or are currently on the secondary CAPE list and all industry-recognized credentials that have been or are currently on the postsecondary CAPE list.

For more detailed information on credentials included in the analysis, please review [this spreadsheet](#). Please note that ESG did not segment the credentials by the education level of the earner at the time the credential was earned.¹ The data received and used in the analysis includes outcomes of credential earners by completion year. All earners were grouped together regardless of whether they earned the credential through the Florida College System, state university system, private institutions, independent colleges in Florida, or high school (graduates) in each year identified.

Credentials of Value
Advanced Life Support
American Welding Society Certification
ASNT Non-Destructive Tester
Banking Operations-Financial Services College Credit Certificate
Banking Specialist-Financial Services College Credit Certificate
Certified Anti-Money Laundering Specialist
Certified Arborist

¹ Clarification as to what segmenting credentials means is needed, here.

Credentials of Value
Certified Case Manager
Certified Coding Specialist
Certified Diabetes Educator
Certified Employee Benefit Specialist
Certified Financial Risk Management
Certified First Responder
Certified Flight Instructor
Certified Forklift Operator
Certified Fraud Examiner
Certified Healthcare Emergency Professional
Certified In Production And Inventory Management
Certified Information Privacy Professional
Certified Information Security Manager
Certified Information System Auditor (CISA)
Certified Information Systems Security Professional
Certified Internal Auditor

Credentials of Value
Certified Occupational Therapy Assistant
Certified Pharmacy Technician
Certified Plant Engineer
Certified Power Quality Professional
Certified Quality Auditor
Certified Regulatory Compliance Manager
Certified Scrum Master
Certified Surgical Technologist
Certified Welding Inspector
Chartered Property Casualty Underwriter
Cisco Certified Network Associate
Cisco Certified Network Professional
Commercial Pilot License
CompTIA Network+
CompTIA Security+
Drone Pilot Certificate

Credentials of Value
Electrical And Instrumentation Technology 1 Career Certificate
Electrical And Instrumentation Technology 2 Career Certificate
EPA 608 Technician Certification
EPA Universal Certification
Fire Officer Supervisor College Credit Certificate
Fire Sprinkler System Technology - Apprenticeship
Food Handler's Card
Food Safety Certification
HAZWOPER Certification
Heavy Equipment Operation Apprenticeship
HVAC Certification
IAT Level II Certification
Journeyman Lineman
Lean Six Sigma Black Belt
Lean Six Sigma Certification
LEED Accredited Professional (AP)

Credentials of Value
LEED Green Associate
Licensed Practical Nurse
Licensed Vocational Nurses
NICET Level II Certification
Operator Certification
Patient Care Technician
Pesticide Applicator License
PMI Professional in Business Analysis
Product Certification
Professional in Human Resources
Professional Risk Manager (PRM)
Program Management Professional
Project Management Professional Certification
Radiation Therapy Specialist College Credit Certificate
Radiology Certified Coder
Registered Respiratory Therapist

Credentials of Value
Registered Technologist
Salesforce Certified Administrator
Senior Professional In Human Resources
ServSafe Certification
SHRM-CP (Society for Human Resource Management Certified Professional)
Six Sigma Black Belt Certification
Six Sigma Green Belt Certification
Standards of Training Certification and Watchkeeping
Transit Technician 1 Career Certificate
Transit Technician 2 Career Certificate
Transit Technician 3 Career Certificate
Transportation Worker Identification Credential (TWIC) Card

The following associate in science or associate in applied science degrees are associated with occupations that meet demand thresholds:

Associate Degrees
Accounting

Associate Degrees
Accounting Technology
Aeronautics/Aviation/Aerospace Science And Technology, General
Aerospace Technology
Air Conditioning, Refrigeration And Heating Systems Technology
Architectural Design & Construction Technology
Asl-English Interpretation
Automotive Service Management Technology
Aviation Administration
Aviation Maintenance Administration
Aviation Maintenance Management
Aviation/Airway Management And Operations
Baking & Pastry Management
Baking And Pastry Arts/Baker/Pastry Chef
Bible/Biblical Studies
Biomedical Engineering Technology
Biomedical Equipment Technician

Associate Degrees
Biotechnology
Biotechnology Laboratory Technology
Building Construction Technology
Business Administration
Business Administration And Management, General
Business Administration, Management And Operations, Other
Business Analysis Specialist
Business Entrepreneurship
Business/Commerce, General
Cardiovascular Technology
Chemical Technology
Civil Engineering Technology
Communication And Media Studies, Other
Computer And Information Systems Security/Information Assurance
Computer-Aided Drafting And Design
Construction Management Techno

Associate Degrees
Construction Management Technology
Corrections And Criminal Justice, Other
Crime Scene Technology
Criminal Justice Technology
Criminal Justice/Police Science
Criminal Justice/Safety Studies
Culinary Arts/Chef Training
Culinary Management
Customer Relationship Management
Dealer Spcfc Auto Technology
Dental Assisting Technology And Management
Design And Visual Communications, General
Diagnostic Medical Sonography Technology
Diagnostic Medical Sonography/Sonographer And Ultrasound Technician
Dietetic Technician
Digital Media/Multimedia Technology

Associate Degrees
Divinity/Ministry
Early Childhood Education
Early Childhood Management
Education, General
Education/Teaching Of Individuals In Early Childhood Special Education Programs
Education/Teaching Of Individuals With Hearing Impairments Including Deafness
Education/Teaching Of Individuals With Specific Learning Disabilities
Electrical Distribution Technology
Electrical Power Technology
Electronics Engineering Technology
Elementary Education And Teaching
Fashion Marketing Management
Fashion/Apparel Design
Film Production Technology
Financial Services
Fire Science Technology

Associate Degrees
Fire Science Technology (Feshe Model)
Fire Science/Fire-Fighting
Forensic Science And Technology
Game And Interactive Media Design
General Studies
Golf Course Operations
Graphic Design
Graphics Technology
Hospitality & Tourism Management
Hospitality Administration/Management, General
Human Services
Human Services, General
Industrial Management Technology
Information Science/Studies
Information Technology
Interactive Media Production Technology

Associate Degrees
Interior Design Technology
Landscape & Horticulture Technology
Legal Assistant/Paralegal
Legal Studies, General
Liberal Arts And Sciences/Liberal Studies
Marine Engineering, Management & Seamanship
Marine Environmental Technology
Marketing Management
Marketing/Marketing Management, General
Medical Assisting Advanced
Medical Office Administration
Medical Radiologic Technology/Science - Radiation Therapist
Medical/Clinical Assistant
Missions/Missionary Studies And Missiology
Music Production Technology
Nuclear Medical Technology/Technologist

Associate Degrees
Nuclear Medicine Technology
Nursing R.N.
Occupational Therapy Assistant
Office Administration
Opticianry
Organizational Communication, General
Orthotics & Prosthetics Technology
Paralegal Studies (Legal Assisting)
Pharmacy Management
Photographic Technology
Physical Therapist Assistant
Physical Therapy Technician/Assistant
Physician Assistant
Public Relations, Advertising, And Applied Communication
Radiation Therapy
Radio And Television Broadcast Programming

Associate Degrees	
Radiography	
Radiologic Technology/Science - Radiographer	
Registered Nursing/Registered Nurse	
Respiratory Care	
Respiratory Care Therapy/Therapist	
Restaurant Management	
Simulation Technology	
Social And Human Services	
Sports, Fitness, And Recreation Management	
Supply Chain Management	
Surgical First Assisting	
Surgical Services	
Teaching English As A Second Or Foreign Language/Esl Language Instructor	
Theater And Entertainment Technology	
Theology/Theological Studies	
Translation-Interpretation Stu	

Associate Degrees

Transportation And Logistics

Veterinary Technology

Youth Services/Administration

Results of Employer Validation Efforts of the Draft CoV List

The primary goal of the employer survey and related focus groups - both administered after the draft CoV list was compiled - was to vet the non-degree credentials that met Florida's draft demand and wage thresholds according to Emsi data to understand whether they have talent sourcing value in the employer community and whether additional credentials should be considered for inclusion on the CoV list. Survey questions and responses are included in Appendix 3 to provide more detailed insight into employer feedback. In addition, employer surveys and focus groups also present an opportunity for Florida to learn about credentials that are emerging in value to employers in fields that are becoming more important to Florida's economy but don't yet meet current demand thresholds.

Within employer survey responses, ESG sought to identify trends expressed by a substantial proportion of respondents either confirming the value of credentials on the draft CoV list, expressing disagreement with one or more credentials included on the draft CoV list, or suggesting new credentials that should be considered for the list. Outlier responses, i.e. those expressed by a small number of employers, do not constitute a sample size substantial enough to sway changes or additions to the CoV list, which was created using data from job ads showing that many employers are actively prioritizing or requiring those credentials for employment.

Employers generally agreed with the credentials that have been identified for inclusion on the draft CoV list. While a relatively small number of employers suggested different credentials to add to the CoV list, most credentials did not meet Florida's middle-wage threshold, which employers acknowledged. Those that did required a bachelor's degree, which was not the focus of this body of work. Across the board, employers representing hospitality, agriculture, and equestrian industries expressed frustration that their industries were not included in the survey given that there were not any associated occupations that met Florida's middle-wage threshold.

Within focus groups, cross-sector employer representatives also expressed general agreement with the credentials that were included on the draft CoV list. Employers emphasized that this is an employee-driven market and will remain so for the foreseeable future. That has implications for how they recruit, hire, and onboard talent. They acknowledged that they'll need to be more flexible with respect to the credentials they look for in new hires. · Across the board, all employers recognized that they need to get more involved in training and upskilling employees, and the CoV list can help them prioritize clear lanes for that work. With respect to particular industries:

- In business/finance and IT, employers suggested that any amount of experience was preferable to a non-degree credential. They openly discussed

that Florida should not focus on prioritizing only credential attainment and should simultaneously work to find ways to offer work-based learning experiences for learners.

- In healthcare, employers acknowledged that some lower-level credentials, like home health aids, do not and should not make the middle wage threshold, but that Florida must create meaningful stackability paths to move workers from that starting point to a higher-level position. Supply was by far the driver of their thinking as they openly expressed frustration at the difficulty of recruiting and hiring healthcare roles, especially nurses.
- In IT and business/finance, employer representatives were accustomed to hiring employees who'd earned bachelor degrees. Future conversations might intentionally include representatives who are more familiar with non-degree credentials.
- Construction and manufacturing focus groups would have benefitted from having lower-level employers in the conversation who are more directly involved in hiring, like subcontractors. Future participants need to include trade-specific representatives (e.g. plumbers, HVAC, electricians, etc.) They all mentioned skills-based hiring rather than certifications unless the credential was tied to apprenticeship or license.
- Manufacturing representatives admitted that their industry does a bad job at signaling credentials in job ads. They agreed that the field needs to create less-specific (less narrow) credentials. They don't feel like the field of credentials adequately addresses what they need.

Preliminary Parameters for Operationalizing Stackability Criteria

Per the 2021 REACH Act, non-degree credentials (NDC) that are included on the CoV list that don't meet middle-wage threshold have to meet the stackability criteria described earlier in this report. The following draft processes describe how Florida might approach operationalizing those criteria with each step acting as a gate through which non-degree credentials must pass or they will be removed from consideration. ***Note that this will require a credential-by-credential assessment to make stackability determinations.***

1. **Basement Wage:** Evaluate whether the NDC meets the basement wage threshold in use (i.e. \$12.38/hour or \$15.00/hour). If it does, then that credential moves on to be assessed against the next stackability criteria.
2. **Credential Sequence:** Evaluate whether the NDC is part of a well-defined sequence of credentials that lead to an in-demand, middle-wage opportunity. If it does, then it moves on to be assessed against the next stackability criteria.
 - a. Determine whether the NDC is offered within an aligned course and/or at the conclusion of a program of study within a secondary or postsecondary career and technical education program. The secondary and postsecondary programs must be linked to at least a bachelor's degree in which the SOC directly linked to the bachelor's degree meets the demand thresholds set by the LMEC and middle-wage threshold for Florida of \$52,540.
 - b. Link secondary (K-12) programs of study to related SOC and CIPs to create career pathways that extend from secondary into postsecondary in the aligned career. This will allow for credentials associated with the SOC and CIPs to be added within the sequence.
 - c. Relatedly, ESG recommends a review of Florida's college credit certificates and non-credit postsecondary certificates to determine how they relate or embed themselves within a well-defined sequence of credentials. Linking these credentials to SOC and CIPs will allow for better identification of where they fit within a well-defined sequence of credentials.

3. **Industry validated and recognized:** Evaluate whether the NDC meets the definition of industry validated and recognized. If so, it moves on to be assessed against the next stackability criteria.

- a. To determine industry validated and recognized, Florida should survey employers within the related sector of the NDC. FDOE can lead this process but should rely on chambers, workforce boards, and employer/industry associations to assist in delivering and promoting the survey to ensure higher response rates from employers OR identify an entity to lead this process for them.

- i. **Industry validated-** Employers within an industry sector signal the value of the occupation-specific NDC by: (a) including the NDC in job postings as required or highly recommended; (b) using the NDC as a factor in selecting candidates for hire; and/or (c) offering higher pay for those who possess the NDC.

In the absence of the NDC in job postings, an employer survey can be used to determine industry validated. An NDC is considered “Industry Validated” if over 49.5% of employer/industry respondents indicated “Yes” to the following survey prompt:

“All other things being equal, if two applicants possess the same education and experience, but one has earned [insert name of this specific NDC], would that application be given a preference in hiring or higher pay?”

- ii. **Industry recognized-**Employers within an industry sector signal their familiarity with the NDC.

1. An NDC is considered “Industry Recognized” if over 49.5% of employer/industry respondents indicated “Yes” to the following survey prompt: “If you are familiar with the NDC, answer ‘yes’ or ‘no’ for the value question for each NDC listed.”

4. **NDC Articulation:** Evaluate whether the NDC is included on Florida’s gold standard articulation list or is part of a statewide articulation agreement. If so, then it moves on to be assessed against the next stackability criteria.

- a. ESG recommends a review of Florida’s college credit certificates and non-credit postsecondary certificates to determine how they relate or embed themselves within a well-defined sequence of credentials and/or create statewide articulation agreements specific to college credit certificates. If college credit certificates are embedded within a well-defined sequence, they would meet stackability criteria as a part of step 1.
5. **Lagging Criterion: Evidence of Stackability:** Currently, Florida does not have standard reports that evaluate extent to which learners who earn a lower-wage credential return to postsecondary education to earn the next-level credential in that sequence that ultimately leads to a middle-high wage role. Florida must first conduct research into stackability rates and patterns (i.e. how pervasive is NDC stacking currently, by whom, and in which programs). Florida should automate and develop annual reports on stacking tracked by program and pathway; this reporting should occur at both the state and institutional level so that progress can be benchmarked. Then, Florida should evaluate a reasonable growth goal (i.e. one that takes into consideration Florida’s baseline learned through research) of the percentage of credential holders they hope will “stack” that credential to a CoV in that well-defined credential sequence. As Florida develops its capacity to collect, analyze, and understand learners’ stackability practices across the state, leaders from FDOE, CareerSource, and REACH can collaboratively agree on an implementation timeline and a percentage progression for the fifth criteria.

As a next step, Florida should create and convene a representative faculty panel to vet and finalize these stackability criteria. That panel should then be leveraged to help establish a process and timeline for operationalizing the final criteria. In general, the stackability criteria review should fall within the same process and timeline as the larger CoV review. Florida should determine how often they intend to revisit credentials and align this timeline. For example, if CareerSource updates LMI every two years, credential review should coincide with this timeline to ensure the most up to date and accrued LMI and occupational information is reflected.

In addition, Florida should conduct the survey for employer validation in coordination with the COV review. Representation from survey responses should include at a minimum: geographic representation from each region within the state, sample sizes of small, medium, and large companies, inclusion of trade associations and other entities representing employer voices, regional workforce boards, and chambers of commerce. Florida should consider how many responses from each of these categories would represent a significant sample size to feel that they have adequate representation from the field to come to a decision.

Upcoming Priorities for Florida

ESG's work to date on behalf of the CoV workgroup and FDOE is a strong step toward understanding CoV within Florida. This first pass at defining and operationalizing a CoV framework gives clearer sight into the credentials that are especially relevant within Florida's economy that pay good wages; into credentials that are needed within the state's economy but do not offer middle wages; and into the limitations of data in comprehensively identifying CoV. It also queues up for the Credential Review Committee a solid starting point for their work in creating a Master Credentials List and offers some important lessons learned/priority next steps for consideration:

- **Methodology for Degree Credentials:** The 2021 REACH Act makes clear that all CoV must have relevance in the labor markets of today and tomorrow. Degree and non-degree credentials alike must meet in-demand thresholds set by the LMEC to be considered CoV. Those that don't cannot be considered for inclusion on the Master Credential List. While it allows additional criteria to be used, the legislation suggests that a degree credential that meets demand thresholds is a CoV (without suggesting that the wages earned by those degree holders should be taken into consideration).

The legislation further requires that non-degree credentials meet additional criteria to be considered CoV. They must either meet or exceed the middle-wage threshold determined by the LMEC, or they must stack to a credential associated with an occupation that does. The current draft framework within this report illustrates that process. However, if a non-degree credential that doesn't meet the middle-wage threshold stacks to an associate's degree that meets the demand thresholds but hasn't been evaluated for wage outcomes, can that fulfill the "stackability" intention of the legislation? This is an important question for the Credential Review Committee to ask and answer as it moves forward with its Master Credential List.

- **Finalizing Demand Thresholds:** According to the 2021 REACH Act, the LMEC is responsible for setting demand thresholds for Florida. Because they have not yet completed that work, ESG used Florida's current demand thresholds, which have been set by DEO. As CareerSource moves forward with the Credential Review Committee, they will need to replace the demand thresholds used to generate this preliminary CoV list with new thresholds established by the LMEC.
- **Finalizing Wage Thresholds and Related Methodology:** As described earlier in this report, FDOE selected a middle-wage threshold of \$52,540 from the LMEC's "medium wages" classification, which seems to honor the legislative intent of the 2021 REACH Act. As the

Credential Review Committee moves forward with this work, it may be prudent to review the range of threshold options offered by the LMEC to confirm that this medium wage is the best choice.

Relatedly, the Credential Review Committee might also consider at *what point in employment past credential attainment should wages be assessed against that threshold*.

ESG—in collaboration with FDOE and FETPIP—used fourth quarter earnings, which yielded the most complete set of data for analysis, but it’s reasonable to ask whether workers can expect to make middle wage within a year of their employment start date. While the Credential Review Committee might opt to look at the wage threshold against three years of employment or even five years, there are two important factors to consider: 1) As workers get further into employment, their wages have more to do with their on-the-job performance than with the credential that got them their initial position; and 2) the data available for analysis at three years and five years is less complete.

Finally, at the time of this report, a high-wage threshold had not yet been identified for Florida. The Credential Review Committee will need to work with the LMEC to finalize that classification to honor the intention of the REACH Act.

- **Regionalization of Thresholds:** Once demand and wage thresholds have been finalized by the LMEC at a state level and for Florida’s 24 workforce regions, the Credential Review Committee will have the opportunity to expand this preliminary data analysis to take into consideration regional thresholds that have been adjusted for cost of living in different parts of the state. DEO’s 24 local area demand occupations list may serve as a helpful starting point to that effort.
- **Schedule for Ongoing CoV Assessment:** Finally, the Florida team - FDOE, CareerSource, DEO, REACH—will need to collaboratively agree to a schedule that routinely evaluates credentials to ensure that Florida is up to date in its identification of CoV, especially given the frequency with which the economy shifts. ESG suggests that this work happen at least every other year, from using LMI and wage outcomes to identify CoV to engaging employers to validate the importance of those credentials to evaluating credentials that fall below the wage threshold against the final stackability criteria.
- **CTE Audit Modifications:** Across the course of completing this work, ESG gained familiarity with some of the pieces of Florida’s CTE audit. Based on that initial understanding, ESG sees opportunity for Florida to explicitly connect the audit to the

credentials of value work. Secondary CTE programs of study need to be connected to CIP and SOC. Then, demand and wage thresholds should be linked to credentials and degrees within the sequence to ensure there is alignment. This would help K-12 offer a sequence that ultimately links to a bachelor's degree along with the credentials and lower-level degrees that are aligned to produce a credential that ultimately meets Florida's middle-high wage thresholds.

Appendix 1. ESG Data Request to FETPIP

Please see the [accompanying document](#) for a full copy of the data request. The following table outlines column headers of the received data file titled Credentials of Value 3 year - Draft 12.10.21

Column Header	Definition	Use
Completion Year	Year of credential completion	Used to group the outcomes of credential earners by year
Credential Type	Type of Credential	Distinguishes between all certifications referenced in the REACH Act, including: <ul style="list-style-type: none"> • Registered apprenticeships • Licenses • College credit certificates • Career certificates • Applied technology diplomas • Associate degrees
Name of credential earned	Name of credential attained	
CIP Code	Associated program or credential CIP Code	Can be used to map CIP to SOC, when the crosswalk is in use
Primary SOC Code	Associated program SOC Code	Used to match credential outcomes data to occupational demand
Career Cluster	The name of the career cluster	Used to segment certifications by industry for employer validation
# of Credential Completers Statewide	Total number of unique individuals statewide who earned the credential in the reporting year	Requested for narrative purposes, if FDOE chooses to report out descriptive analytics on the CoV list
# of Completers with Valid SSN	Total number of unique individuals found with valid social security number	Requested for narrative purposes, if FDOE chooses to report out descriptive analytics on the CoV list

Column Header	Definition	Use
% of Completers with Multiple Credentials Completed	Total percentages of individuals that had a different credential completion reported in the same year	Requested for narrative purposes, if FDOE chooses to report out descriptive analytics on the CoV list
# Found Employed	The total number of unique individuals with wage data available within the 4th quarter of credential completion, regardless of part-time or full-time status	Requested for narrative purposes, if FDOE chooses to report out descriptive analytics on the CoV list
# Found Employed Full-Time, Not Continuing Ed	The number of unique individuals with full-time wage data available within the 4th quarter after completion and are NOT continuing education	Requested for narrative purposes, if FDOE chooses to report out descriptive analytics on the CoV list
# Found Employed Full-Time	The number of unique individuals with full-time wage data available within the 4th quarter after completion	Requested for narrative purposes, if FDOE chooses to report out descriptive analytics on the CoV list
# Found Employed Part-Time	The number of unique individuals with part-time wage data available within the within the 4th quarter after completion	Requested for narrative purposes, if FDOE chooses to report out descriptive analytics on the CoV list
# Continuing Education	Total number of unique individuals found enrolled in a postsecondary institution in the 4th quarter after completion of credential	Requested for narrative purposes, if FDOE chooses to report out descriptive analytics on the CoV list
# Working and Continuing Education	Total number of students found in both the wage data field and enrollment data in the 4th quarter after completing the credential	Requested for narrative purposes, if FDOE chooses to report out descriptive analytics on the CoV list

Column Header	Definition	Use
# Found Employed With One Employer	Total number of completers found with one employer wage record	Requested for narrative purposes, if FDOE chooses to report out descriptive analytics on the CoV list
# Found Employed With More Than One Employer	Total number of completers found with more than one employer wage record	Requested for narrative purposes, if FDOE chooses to report out descriptive analytics on the CoV list
Total “Pool” Count	Total number of individuals found employed or in continuing education (excluding those found undeterminable or no matching data).	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners
Students with Pre-Earnings Data	Total number of students who have pre-earnings data available 4 quarters prior to program completion	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners
Pre-Earnings Minimum Value in Wage Distribution	For all wages collected 4 quarters prior to program completion, the minimum wage amount	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners
Pre-Earnings at 10th Percentile	For all wages collected 4 quarters prior to program completion, the 10th percentile wage	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners
Pre-Earnings at 25th Percentile	For all wages collected 4 quarters prior to program completion, the 25th percentile wage	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners
Pre-Earnings Median Value in Wage Distribution	For all wages collected 4 quarters prior to program completion, the median wage	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners
Pre-Earnings at 75th Percentile	For all wages collected 4 quarters prior to program completion, the 75th percentile	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of

Column Header	Definition	Use
	wage	credential earners
Pre-Earnings Maximum Value in Wage Distribution	For all wages collected 4 quarters prior to program completion, the maximum wage value	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners
Students with 4th Quarter Post-Earnings Data	Total number of students who have post-earnings data available 4 quarters after program completion	Used to determine the sample size of at least 10 students
4th Quarter Post-Earnings Minimum Value in Wage Distribution	For all wages collected 4 quarters following program completion, the minimum value	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners
4th Quarter Post-Earnings 10th Percentile Value in Wage Distribution	For all wages collected 4 quarters following program completion, the 10th percentile wage	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners
4th Quarter Post-Earnings at 25th Percentile	For all wages collected 4 quarters following program completion, the 25th percentile wage	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners
4th Quarter Post-Earnings Median Wage	For all wages 4 quarters following program completion, the median wage	Used to calculate an annual wage to compare against the wage threshold
4th Quarter Post-Earnings 75th Percentile in Wage Distribution	For all wages 4 quarters following program completion, the 75th percentile wage	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners
4th Quarter Post-Earnings Maximum Value	For all wages 4 quarters following program completion, the maximum wage value	Requested for narrative purposes, if FDOE chooses to conduct further analysis on wage progression of credential earners

Column Header	Definition	Use
Students with 12th Quarter Post-Earnings Data	Total number of students who have post-earnings data available 12 quarters after program completion	Requested as an option to review against the wage threshold
12th Quarter Post-Earnings Minimum Value in Wage Distribution	For all wages collected 12 quarters following program completion, the minimum wage value	Requested as an option to review against the wage threshold
12th Quarter Post-Earnings at 10th Percentile	For all wages collected 12 quarters following program completion, the 10th percentile wage	Requested as an option to review against the wage threshold
12th Quarter Post-Earnings at 25th Percentile	For all wages 12 quarters following program completion, the 25th percentile wage	Requested as an option to review against the wage threshold
12th Quarter Post-Earnings Median Value	For all wages 12 quarters following program completion, the median wage	Requested as an option to review against the wage threshold
12th Quarter Post-Earnings at 75th Percentile	For all wages 12 quarters following program completion, the 75th percentile wage	Requested as an option to review against the wage threshold
12th Quarter Post-Earnings Maximum Value	For all wages 12 quarters following program completion, the maximum wage	Requested as an option to review against the wage threshold
Students with 20th Quarter Post-Earnings Data	Total number of students who have post-earnings data available 20 quarters after program completion	Requested as an option to review against the wage threshold
20th Quarter Post-Earnings Minimum Value	For all wages 12 quarters following program completion, the minimum wage	Requested as an option to review against the wage threshold
20th Quarter Post-Earnings 10th	For all wages 12 quarters following program completion,	Requested as an option to review against the wage threshold

Column Header	Definition	Use
Percentile Wage	the 10th percentile wage	
20th Quarter Post-Earnings 25th Percentile Wage	For all wages 12 quarters following program completion, the 25th percentile wage	Requested as an option to review against the wage threshold
20th Quarter Post-Earnings Median Wage	For all wages 12 quarters following program completion, the median wage value	Requested as an option to review against the wage threshold
20th Quarter Post-Earnings 75th Percentile Wage	For all wages 12 quarters following program completion, the 75th percentile wage	Requested as an option to review against the wage threshold
20th Quarter Post-Earnings Maximum Wage	For all wages 12 quarters following program completion, the maximum wage value	Requested as an option to review against the wage threshold

Appendix 2. ESG Data Request to PERA

This was a request for PERA to generate a number of cohort files to send to FETPIP to track employment and wage outcomes for students who have earned an industry certification. The cohort files included all students who earned an industry certification. As mentioned in the report above, this received industry certification outcomes data was not used due to missing SOC codes.

- PERA will include all “high school completers” (as in, those who earned either a HS diploma, GED or certificate of completion).
- When looking at a high school completer, PERA will look for industry certifications in the Reporting Year graduation (“completion”) and the previous three years.
- However, due to a change in the data structure in 2014-15, we can only look as far back as 2014-15 for industry certifications. This means we won’t be able to look at the three previous Reporting Year’s for the 2015-16 completers and 2016-17 completers.
- Digital Tools will be excluded from this data request, as they are not the same as industry certifications. Digital Tools tend to be earned by middle schoolers.
- There are some errors with the “test completion date” in the 2015-16 Reporting Year. Some data were reported as in the future. These “future dates” will all be replaced by PERA as 5/1/2016 and then sent to FETPIP.
- For any blank dates in K-12, PERA will simply enter the date of 5/1/XXXX. XXXX will reflect the Reporting Year. This will even include industry certs found missing in previous year. E.g., a missing date for an industry certification reported in 2016-17 will be coded as 5/1/2017.
- For any blank dates in WDIS, these will be imputed based on the term (summer, fall, winter/spring) in which the industry certification was reported. YYYY reflects the annual year. Therefore:

- o Summer term = 9/1/YYYY
- o Fall term = 12/31/YYYY
- o Winter/spring term = 6/30/YYYY

Overview: This is a request for PERA to generate a number of cohort files to send to FETPIP to track employment and wage outcomes for students who have earned an industry certification.

- The cohort files should include all students who earned an industry certification, unduplicated to the student—industry certification.

- o If a student is reported as earning an industry certification in more than one sector, use this as the hierarchy to select which record to keep:

- § Florida College System

- § District Technical College

- § K-12

- While we are going to include all industry certifications reported to FDOE, this request also asks for a flag in the cohort files to identify whether the industry certification is on the:

- o CAPE Secondary Industry Certification Funding list
 - o CAPE Postsecondary Industry Certification Funding list
 - o Industry Recognized Credentials for Perkins V Postsecondary Measures

Learners and Institutions: This request is for PERA to generate a number of annual cohorts of industry certifications earned for FETPIP tracking. Once data is provided to FETPIP, FETPIP will include aggregated wage information, as outlined in the separate, accompanying request. All secondary and postsecondary industry certifications earned are to be included in the analysis.

Please include all industry certifications earned from the Florida College System, district technical colleges, and K-12. Please include high school students who were dually enrolled.

Please note, for K-12 industry certifications, ONLY include high school graduates in the cohort. For high school graduates included in the cohort, include all industry certifications the student has earned at the time of high school graduation.

For industry certifications earned in FCS or district technical colleges—this includes any student. In other words, the student’s program enrollment status does not impact their inclusion in the cohort.

Cohort years:

- 2015-16
- 2016-17
- 2017-18

- 2018-19
- 2019-20

Additional notes for reference:

- The completion date field is available for FCS industry certifications for all cohort years.
- The completion date field is only available for K-12 and District Technical Colleges for 2018-19 and 2019-20. PERA should report this field as blank in the cohort tables.
 - o Note, in these instances, when FETPIP receives the file FETPIP can impute a “Completion date” of 6/1/XXXX. XXXX is based on the Reporting Year (e.g., 2016-17 RY becomes 6/1/2017 for the purposes of FETPIP tracking).

Requested Fields:

<i>Field</i>	<i>Notes</i>
Database from which the record was pulled (K-12, WDIS, or CCTCMIS)	
Reporting Year	
Student ID	
First name	
Last name	

Date of birth	
Industry Certification title	
Industry Certification Code	
Completion Date associated with Industry Certification	<p>Note: For 2016-17 and 2017-18 Reporting Years, the Industry Certifications reported through the K-12 Database and WDIS Database, we will not have the completion date. PERA should report these instances as blank or "Missing." In those instances, FETPIP will impute the date of 6/1/XXXX as a proxy. XXXX is based on the Reporting Year. This means FETPIP will be using Q2 for those students to count out quarters for employment tracking.</p>
Was this industry cert on the K-12 CAPE list for the corresponding year in which it was EARNED? (yes/no)	<p>Note: The intent is to use the "Completion Date" field to provide the answer to this column. However, that is not possible for industry certs reported in 2016-17 and 2017-18, K-12 database and WDIS database. Therefore, for those instances, FETPIP will impute the date of 6/1/XXXX as a proxy to make this determination. XXXX is based on the Reporting Year. This means FETPIP will be using Q2 for those students to count out quarters for employment tracking.</p> <p>The 2017-18 through 2021-22 CAPE Secondary Industry Certification Funding lists are found here.</p>

	<p>The 2015-16 and 2016-17 CAPE Secondary Industry Certification Funding list can be found here.</p>
<p>this industry cert on the K-12 CAPE list for the corresponding year in which it was REPORTED? (yes/no)</p>	<p>The 2017-18 through 2021-22 CAPE Secondary Industry Certification Funding lists are found here.</p> <p>The 2015-16 and 2016-17 CAPE Secondary Industry Certification Funding list can be found here.</p>
<p>Is this industry cert on the K-12 CAPE list for 2021-22? (yes/no)</p>	<p>The 2017-18 through 2021-22 CAPE Secondary Industry Certification Funding lists are found here.</p> <p>The 2015-16 and 2016-17 CAPE Secondary Industry Certification Funding list can be found here.</p>

<p>Was this industry cert on the Postsec CAPE list for the corresponding year in which it was EARNED? (yes/no)</p>	<p>Note: The intent is to use the "Completion Date" field to provide the answer to this column. However, that is not possible for industry certs reported in 2016-17 and 2017-18, K-12 database and WDIS database. Therefore, for those instances, utilize the date of 6/1/XXXX as a proxy to make this determination. XXXX is based on the Reporting Year. This means FETPIP will be using Q2 for those students to count out quarters for employment tracking.</p> <p>The 2017-18 through 2021-22 CAPE <u>Postsecondary</u> Industry Certification Funding lists are found here.</p> <p>The 2015-16 and 2016-17 CAPE <u>Postsecondary</u> Industry Certification funding list are found here.</p>
<p>Was this industry cert on the Postsec CAPE list for the corresponding year in which it was REPORTED? (yes/no)</p>	<p>The 2017-18 through 2021-22 CAPE <u>Postsecondary</u> Industry Certification Funding lists are found here.</p> <p>The 2015-16 and 2016-17 CAPE <u>Postsecondary</u> Industry Certification funding list are found here.</p>
<p>Is this industry cert on the Postsec CAPE list for 2021-22? (yes/no)</p>	<p>The 2017-18 through 2021-22 CAPE <u>Postsecondary</u> Industry Certification Funding lists are found here.</p> <p>The 2015-16 and 2016-17 CAPE <u>Postsecondary</u> Industry Certification funding list are found here.</p>

Is this Industry Certification on the Perkins V Postsec Industry Certification list?

The Industry Recognized Credentials for Perkins V Postsecondary Measures list is [found here](#).

Appendix 3. Survey Responses

The employer validation survey received 368 responses from January 9-February 6, 2022. The following section previews employer feedback on occupations and credentials to include as a priority within local workforce development and training.

Architecture, Construction, & Engineering

Question: The following occupations within the Architecture, Construction & Engineering industry have been identified as priority occupations based on demand, skill requirements, and median wage. Are there any occupations on this list that, in your view, are likely to decrease in importance in your industry over the next five years?

	Decreasing in importance		Unsure		Not decreasing in importance	
Aerospace Engineering and Operations Technologists and Technicians	2.94%	1	70.59%	24	26.47%	9
Aerospace Engineers	2.94%	1	67.65%	23	29.41%	10
Architects, Except Landscape and Naval	0.00%	0	51.52%	17	48.48%	16
Cartographers and Photogrammetrists	0.00%	0	90.91%	30	9.09%	3
Civil Engineers	5.56%	2	27.78%	10	66.67%	24
Computer Hardware Engineers	2.94%	1	47.06%	16	50.00%	17
Construction and Building Inspectors	7.89%	3	13.16%	5	78.95%	30
Electrical and Electronic Engineering Technologists and Technicians	2.94%	1	32.35%	11	64.71%	22
Electrical Engineers	2.94%	1	23.53%	8	73.53%	25
Electronics Engineers,	0.00%	0	45.45%	15	54.55%	18

Except Computer						
Engineers, All Other	0.00%	0	38.24%	13	61.76%	21
Environmental Engineers	2.94%	1	41.18%	14	55.88%	19
First-Line Supervisors of Construction Trades and Extraction Workers	5.71%	2	20.00%	7	74.29%	26
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	3.03%	1	45.45%	15	51.52%	17
Industrial Engineering Technologists and Technicians	3.03%	1	51.52%	17	45.45%	15
Industrial Engineers	2.94%	1	47.06%	16	50.00%	17
Landscape Architects	2.94%	1	50.00%	17	47.06%	16
Mechanical Drafters	2.94%	1	50.00%	17	47.06%	16
Mechanical Engineers	0.00%	0	31.43%	11	68.57%	24
Surveyors	0.00%	0	38.24%	13	61.76%	21

Question: Are there any occupations within your industry that are not listed above that you believe should be included as a priority within local workforce development and training because they are high-demand occupations that typically pay living wages, i.e. at least \$25.26 per hour?

- Electricians (n=7)
- HVAC technicians (n=4)
- Plumbers (n=3)
- Carpenters (n=2)
- Heavy Equipment Operators (n=2)
- Pipefitting/Welding (n=2)
- CNC Machinists and Export Control Officers (n=2)
- Hospitality Related-Hotels, Restaurants, Convention Centers (n=2)
- Construction material handlers, supervisors and managers
- Field Construction Workers

- Sheet metal
- AGRICULTURAL
- Architectural Project Manager
- CAD Designers
- Project accountant
- Community, regional, and urban planners
- Coastal engineers and scientists
- All construction trades
- Form did not have my industry listed as an option -agriculture or entertainment/sports - horse industry/horse racing; module will not allow me to choose anything but this section?
- Drivers
- Swimming pool mechanics
- Logistics experts, Property Maintenance & Repair
- Chemical Engineers / Chemical Operators / Technicians
- Maintenance Technicians - provide PMs to equipment in manufacturing. Also troubleshoot, repair and calibrate.

Question: Are there any credentials in your industry that are not on the list above that you believe should be considered for inclusion based on their alignment to in-demand, high-wage occupations?

- Professional Engineer (PE) (n=4)
- DOL Issued Journeyman Electrician Apprenticeship Certificate (n=2)
- Journeyman Electrician (n=4)
- American Institute of Architects (Registered Architect) or Licensed Architect (NCARB) (n=2)
- Licensed or registered landscape architect (n=2)
- Journeyman License in Trades (HVAC, Plumbing, Fire Sprinkler, Sheet Metal, Pipefitter/welder, low voltage)
- Traffic signal technician
- All construction trade apprenticeship certificates, PE, FE, SPHR, PHR, CPA
- OSHA 500 (n=2)
- Osha 501
- OSHA 30
- Food safety Certified
- PLANTING - HARVEST - PACKING
- License Interior Designer (NCIDQ)

- Chef Certifications
- Hospitality Management Certifications
- Plumber
- Licensed land surveyor
- Certified planner
- Equine certification degrees
- Marion County equine academy
- FFA and 4-H programs
- Assoc and BS degrees in equine/ag
- State licensing for Building Inspectors - there are many certs and licenses that are required
- CDL Drivers and MOT Certification
- Engineer Intern (EI)
- Advanced Maintenance of Traffic Certification
- Construction Trades Qualifying Program (CTQP - Inspector Certification)
- IPC

Business, Management & Financial Operations Industry

Question: The following occupations within the Business, Management & Financial Operations industry have been identified as priority occupations based on demand, skill requirements, and median wage. Are there any occupations on this list that, in your view, are likely to decrease in importance in your industry over the next five years?

	Decreasing in importance		Unsure		Not decreasing in importance	
Accountants and Auditors	3.70%	1	0.00%	0	96.30%	26
Advertising and Promotions Managers	7.41%	2	29.63%	8	62.96%	17
Architectural and Engineering Managers	3.70%	1	33.33%	9	62.96%	17
Budget Analysts	7.41%	2	18.52%	5	74.07%	20
Chief Executives	7.69%	2	19.23%	5	73.08%	19
Claims Adjusters, Examiners, and	0.00%	0	33.33%	9	66.67%	18

Investigators						
Compensation and Benefits Managers	3.85%	1	26.92%	7	69.23%	18
Compliance Officers	0.00%	0	36.00%	9	64.00%	16
Computer and Information Systems Managers	0.00%	0	8.00%	2	92.00%	23
Construction Managers	0.00%	0	34.62%	9	65.38%	17
Cost Estimators	0.00%	0	46.15%	12	53.85%	14
Credit Analysts	11.54%	3	34.62%	9	53.85%	14
Education Administrators, All Other	12.00%	3	44.00%	11	44.00%	11
Financial Examiners	15.38%	4	46.15%	12	38.46%	10
Financial Managers	0.00%	0	26.92%	7	73.08%	19
General and Operations Managers	7.69%	2	26.92%	7	65.38%	17
Human Resources Managers	4.00%	1	12.00%	3	84.00%	21
Human Resources Specialists	3.85%	1	26.92%	7	69.23%	18
Industrial Production Managers	7.69%	2	46.15%	12	46.15%	12
Insurance Appraisers, Auto Damage	7.41%	2	44.44%	12	48.15%	13
Insurance Underwriters	7.41%	2	48.15%	13	44.44%	12
Loan Officers	15.38%	4	30.77%	8	53.85%	14
Logisticians	7.69%	2	34.62%	9	57.69%	15
Management Analysts	0.00%	0	48.00%	12	52.00%	13
Market Research Analysts and Marketing Specialists	0.00%	0	38.46%	10	61.54%	16

Marketing Managers	0.00%	0	34.62%	9	65.38%	17
Personal Financial Advisors	11.54%	3	23.08%	6	65.38%	17
Property, Real Estate, and Community Association Managers	7.69%	2	34.62%	9	57.69%	15
Purchasing Managers	3.85%	1	46.15%	12	50.00%	13
Sales Managers	0.00%	0	44.00%	11	56.00%	14
Social and Community Service Managers	15.38%	4	38.46%	10	46.15%	12
Training and Development Managers	11.11%	3	29.63%	8	59.26%	16
Training and Development Specialists	18.52%	5	29.63%	8	51.85%	14
Transportation, Storage, and Distribution Managers	3.85%	1	34.62%	9	61.54%	16

Question: Are there any occupations within your industry that are not listed above that you believe should be included as a priority within local workforce development and training because they are high demand occupations that typically pay living wages, i.e., at least \$25.26 per hour?

- Equine industry professionals
- Recruiters (n=2)
- Agribusiness
- Manufacturing Cost Accounting
- Welding, metal fabrication
- business analysis
- Lean six sigma
- Social media management and strategy
- New market advertising
- Virtual sales skills
- Soft skills
- Insurance Sales & Service personnel

- Insurance Agent
- Project management
- Data analytics/science however \$25.26 is a not an entry wage in education even with the requisite skills, although a person with those skills outline would have a great career path but would not start at that wage.
- Culinary Professional with certification
- Executive Assistant
- Tech Support Specialists (some are lower paying, but experienced ones are higher)
- Leasing Representatives and Property Managers
- Retail Food service workers, servers, cooks, management
- All positions within IT
- Senior managers
- Information Technology Managers
- Information Technology Coordinators
- Systems Engineers
- Customer support specialists
- Project Administrators
- Electrical Prefab techs
- Materials and Purchasing

Question: Are there any credentials in your industry that are not on the list above that you believe should be considered for inclusion based on their alignment to in-demand, high-wage occupations?

- Certified Public Accountant (n=3)
- College Credit and Associate of Science Equine Studies
- 2-20 & 2-20 Insurance License
- State License
- HVAC Certification
- Culinary Certification
- SHRM-SCP
- 4-40 Insurance License

Education & Training

Question: The following occupations within the Education & Training industry have been identified as priority occupations based on demand, skill requirements, and median wage. Are

there any occupations on this list that, in your view, are likely to decrease in importance in your industry over the next five years?

	Decreasing in importance		Unsure		Not decreasing in importance	
Career/Technical Education Teachers, Postsecondary	2.44%	1	14.63%	6	82.93%	34
Instructional Coordinators	5.13%	2	23.08%	9	71.79%	28

Question: Are there any occupations within your industry that are not listed above that you believe should be included as a priority within local workforce development and training because they are high demand occupations that typically pay living wages, i.e. at least \$25.26 per hour?

- Certified K-12 teachers or Charter School Teachers (n=4)
- Early Childhood Education (n=2)
- Nursing (n=2)
- Health Care workers (n=2)
- Career Counselor (n=2)
- Logistics (n=2)
- Program coordinators or managers (n=2)
- Welding (n=2)
- Equine Professionals, all sectors
- Grant writers
- Instructional coaches
- Administrators
- Commercial truck driving
- Project managers
- Data scientist
- Support positions like maintenance, plumbers, tech support, etc.
- HVAC
- Building Construction
- Child Care workers should be paid more.

Question: Are there any credentials in your industry that you believe should be considered for inclusion based on their alignment to in-demand, high-wage occupations? If “Yes,” please list those credentials here (please do not use abbreviations).

- CDA (n=2)
- Five Year Professional Teaching Certificate (n=2)
- All administrative positions require at least a Master's Degree and experience within the education field
- College Credit and Associate of Science In Equine Science
- Project Managers
- K-12 Educator General Knowledge
- ParaPro
- Counseling
- Educational support credentials
- Project management
- Data analytics
- Process improvement (leans six sigma)
- Design thinking
- Advanced Excel
- Networking and software implementation
- FCCPC
- Aviation Credentials for high school students
- No one credential, each would be specific to the instructional or work area.
- We need to remember some jobs may not start at \$25.00 an hour but are beginning wages that lead to better jobs

Healthcare

Question: The following occupations within the Healthcare industry have been identified as priority occupations based on demand, skill requirements, and median wage. Are there any occupations on this list that, in your view, are likely to decrease in importance in your industry over the next five years?

	Decreasing in importance		Unsure		Not decreasing in importance	
Cardiovascular Technologists and Technicians	0.00%	0	44.12%	15	55.88%	19

Chiropractors	8.82%	3	58.82%	20	32.35%	11
Dentists, General	2.86%	1	48.57%	17	48.57%	17
Diagnostic Medical Sonographers	0.00%	0	39.39%	13	60.61%	20
Dietitians and Nutritionists	5.56%	2	36.11%	13	58.33%	21
Hearing Aid Specialists	5.88%	2	55.88%	19	38.24%	13
Magnetic Resonance Imaging Technologists	0.00%	0	51.52%	17	48.48%	16
Nuclear Medicine Technologists	0.00%	0	55.88%	19	44.12%	15
Nurse Anesthetists	0.00%	0	38.89%	14	61.11%	22
Nurse Practitioners	2.56%	1	12.82%	5	84.62%	33
Occupational Therapists	0.00%	0	21.05%	8	78.95%	30
Occupational Therapy Assistants	2.70%	1	29.73%	11	67.57%	25
Optometrists	2.94%	1	58.82%	20	38.24%	13
Pharmacists	5.56%	2	19.44%	7	75.00%	27
Physical Therapist Assistants	0.00%	0	35.14%	13	64.86%	24
Physical Therapists	0.00%	0	27.78%	10	72.22%	26
Physician Assistants	0.00%	0	32.35%	11	67.65%	23
Radiation Therapists	0.00%	0	54.55%	18	45.45%	15
Radiologic Technologists and Technicians	0.00%	0	45.45%	15	54.55%	18
Registered Nurses	2.38%	1	9.52%	4	88.10%	37
Respiratory Therapists	0.00%	0	26.47%	9	73.53%	25
Speech-Language Pathologists	0.00%	0	47.22%	17	52.78%	19
Veterinarians	3.03%	1	69.70%	23	27.27%	9

Question: Are there any occupations within your industry that are not listed above that you believe should be included as a priority within local workforce development and training because they are high demand occupations that typically pay living wages, i.e. at least \$25.26 per hour?

- Licensed Practical Nurses (n=6)
- CNA (but it pays less than \$20 per hour) (n=4)
- Home Health Aids are not on the list but are in critically low supply. Wages start around \$16 per hr. (n=4)
- Registered Behavior Technician (n=2)
- Mental health techs/aides (n=2)
- Peer Recovery Specialist (n=2)
- Paramedics and EMT's (n=2)
- Medical Assistants (n=2)
- Applied Behavior Analysis
- Phlebotomist
- Psychiatrist
- RN
- Nurse practitioner
- Physicians
- LMHC's
- CRNA
- AA
- Medical Technician
- Dental Hygienists
- Dental Assistants
- Surgical Technologist

Question: Are there any credentials in your industry that are not on the list above that you believe should be considered for inclusion based on their alignment to in-demand, high-wage occupations?

- Registered Nurse (n=2)
- CPR Certified (n=2)
- Certified medical assistants (n=2)
- Registered Behavior Technicians (n=3) including certification through the Behavior Analysis Certification Board
- Certified Recovery Peer Specialist (CRPS)

- Certified Recovery Support Specialist (CRSS)
- Change Management
- Social Workers - MSW or LCSW
- Basic Life Support
- Behavior Analysts
- Masters degree trained health professionals for instructors
- Home health administrators
- Home health director of nursing
- PT
- OT
- Medical Technician
- CRNA
- AA
- Phlebotomist
- Perfusionist
- Expanded functions dental assistant
- X-ray certification
- Hygiene sedation license
- Registered Nurse
- EMT Paramedic

Information Technology

Question: The following occupations within the Information Technology (IT) industry have been identified as priority occupations based on demand, skill requirements, and median wage. Are there any occupations on this list that, in your view, are likely to decrease in importance in your industry over the next five years?

	Decreasing in importance		Unsure		No, not decreasing in importance	
Operations Research Analysts	0.00%	0	33.33%	2	66.67%	4
Statisticians	0.00%	0	50.00%	3	50.00%	3

Question: Are there any occupations within your industry that are not listed above that you believe should be included as a priority within local workforce development and training

because they are high demand occupations that typically pay living wages, i.e. at least \$25.26 per hour?

- Web developer (n=2)
- Cybersecurity (n=2)
- Help desk technician
- Business analyst
- System administrator
- Legal Secretary
- Technical Engineers/Networking Cloud Computing (n=2)
- SW engineering
- AI/ML
- Adv Comms 5G
- Autonomy
- Data Science
- Culinary and Maintenance Technicians
- Auditor
- Techs, advisors, maintenance
- Software Developer
- Clinical Informaticists
- Computer Engineers
- Software Specialists
- Hardware Specialists

Question: Are there any credentials in your industry that are not on the list above that you believe should be considered for inclusion based on their alignment to in-demand, high-wage occupations?

- Microsoft Certified
- Certified Cloud Security Professional
- Certified Network Professional
- Certified Information Systems Security Professional
- CompTIA Network+
- ITIL v3 or higher
- LaunchIT Accessible Web Design & Development
- Ability to communicate IT issues to a layman in the company, problem solve IT issues while keeping in mind customer service interface of non-IT users

Law & Public Safety

Question: The following occupations within the Law & Public Safety industry have been identified as priority occupations based on demand, skill requirements, and median wage. Are there any occupations on this list that, in your view, are likely to decrease in importance in your industry over the next five years?

	Decreasing in importance		Unsure		Not decreasing in importance	
Lawyers	0.00%	0	37.50%	3	62.50%	5
First-Line Supervisors of Police and Detectives	0.00%	0	28.57%	2	71.43%	5
First-Line Supervisors of Firefighting and Prevention Workers	0.00%	0	28.57%	2	71.43%	5
Fire Inspectors and Investigators	0.00%	0	42.86%	3	57.14%	4
Detectives and Criminal Investigators	0.00%	0	42.86%	3	57.14%	4
Police and Sheriff's Patrol Officers	0.00%	0	28.57%	2	71.43%	5

Question: Are there any occupations within your industry that are not listed above that you believe should be included as a priority within local workforce development and training because they are high demand occupations that typically pay living wages, i.e. at least \$25.26 per hour?

- Child Abuse Investigator
- Adult Protective Services Investigators
- Economic Self Sufficiency Staff
- Paralegals
- Equine specialized lawyers and accountants
- Public Safety instructors
- 911 Public Safety Telecommunications Operators

Question: Are there any credentials in your industry that are not on the list above that you believe should be considered for inclusion based on their alignment to in-demand, high-wage occupations?

- Clinical Director
- Case Manager
- Nurses
- Certified Paralegal
- FDLE law enforcement officer
- Corrections officer

Life, Physical & Social Science

Question: The following occupations within the Life, Physical & Social Science industry have been identified as priority occupations based on demand, skill requirements, and median wage. Are there any occupations on this list that, in your view, are likely to decrease in importance in your industry over the next five years?

	Decreasing in importance		Unsure		Not decreasing in importance	
Biological Scientists, All Other	0.00%	0	25.00%	2	75.00%	6
Chemists	0.00%	0	25.00%	2	75.00%	6
Clinical, Counseling, and School Psychologists	0.00%	0	40.00%	4	60.00%	6
Conservation Scientists	0.00%	0	62.50%	5	37.50%	3
Geoscientists, Except Hydrologists and Geographers	0.00%	0	75.00%	6	25.00%	2
Medical Scientists, Except Epidemiologists	0.00%	0	37.50%	3	62.50%	5
Physical Scientists, All Other	0.00%	0	50.00%	4	50.00%	4
Psychologists, All Other	0.00%	0	33.33%	3	66.67%	6

Social Scientists and Related Workers, All Other	0.00%	0	33.33%	3	66.67%	6
Urban and Regional Planners	0.00%	0	62.50%	5	37.50%	3

Question: Are there any occupations within your industry that are not listed above that you believe should be included as a priority within local workforce development and training because they are high demand occupations that typically pay living wages, i.e. at least \$25.26 per hour?

- Social workers / case manager / youth care worker
- Quality Technician
- Engineer or Manager
- Validation
- Cleanroom Production operations
- Cell / Gene Therapy Lab Technician
- Environmental Scientists
- Human Services

Question: Are there any credentials in your industry that are not on the list above that you believe should be considered for inclusion based on their alignment to in-demand, high-wage occupations?

- Lab Technician
- Biotechnician Assistant Credentialing Exam (BACE)

Installation, Maintenance, & Repair

Question: The following occupations within the Installation, Maintenance, & Repair industry have been identified as priority occupations based on demand, skill requirements, and median wage. Are there any occupations on this list that, in your view, are likely to decrease in importance in your industry over the next five years?

	Decreasing in importance	Unsure	Not decreasing in importance
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Aircraft Mechanics and Service Technicians	8.33%	1	50.00%	6	41.67%	5
Avionics Technicians	9.09%	1	45.45%	5	45.45%	5
Bus and Truck Mechanics and Diesel Engine Specialists	9.09%	1	54.55%	6	36.36%	4
Electrical and Electronics Installers and Repairers, Transportation Equipment	9.09%	1	45.45%	5	45.45%	5
Electrical and Electronics Repairers, Commercial and Industrial Equipment	7.69%	1	38.46%	5	53.85%	7
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	8.33%	1	50.00%	6	41.67%	5
Electrical Power-Line Installers and Repairers	8.33%	1	50.00%	6	41.67%	5
First-Line Supervisors of Mechanics, Installers, and Repairers	9.09%	1	45.45%	5	45.45%	5
Telecommunications Equipment Installers and Repairers, Except Line Installers	9.09%	1	63.64%	7	27.27%	3

Question: Are there any occupations within your industry that are not listed above that you believe should be included as a priority within local workforce development and training because they are high demand occupations that typically pay living wages, i.e. at least \$25.26 per hour?

- HVAC Technician (n=2)
- Plumbers (n=2)
- Building contractors
- Auto mechanics (n=2)

- Construction Foreman managers
- Alarm industry installation technicians
- Computer applications ability
- CDL drivers
- Electrician
- CNC Machinists
- CNC Programmers
- Sheet Metal Fabricators

Question: Are there any credentials in your industry that are not on the list above that you believe should be considered for inclusion based on their alignment to in-demand, high-wage occupations?

- Cdl crane operators
- Facility Maintenance Technicians
- Refurbishment Technicians
- NICET I
- BASA/FASA
- CMMC qualifications
- AS9100 Auditor
- IPC Certification

Marketing, Sales, & Service

Question: The following occupations within the Marketing, Sales & Service industry have been identified as priority occupations based on demand, skill requirements, and median wage. Are there any occupations on this list that, in your view, are likely to decrease in importance in your industry over the next five years?

	Decreasing in importance		Unsure		Not decreasing in importance	
First-Line Supervisors of Non-Retail Sales Workers	13.33%	4	40.00%	12	46.67%	14
Securities, Commodities, and Financial Services Sales Agents	10.71%	3	60.71%	17	28.57%	8

Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	0.00%	0	30.00%	9	70.00%	21
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Question: Are there any occupations within your industry that are not listed above that you believe should be included as a priority within local workforce development and training because they are high demand occupations that typically pay living wages, i.e. at least \$25.26 per hour?

- Sales and fields reps (n=2)
- Social media / online marketing sales professionals
- Real Estate sales and leasing
- Digital design
- Restaurant Management
- Chefs
- Hotel Management
- Bio Medical Tech
- Apprentice and Journeyman Electric Line Workers
- Virtual Customer Service Agents
- Retail
- Graphic artists and
- Vending machine service

Question: Are there any credentials in your industry that are not on the list above that you believe should be considered for inclusion based on their alignment to in-demand, high-wage occupations?

- Registered Investment Advisor
- Health Insurance Sales License
- CCIM- Certified Commercial Investment Member

Transportation and Production

Question: The following occupations within the Transportation & Production industry have been identified as priority occupations based on demand, skill requirements, and median wage. Are there any occupations on this list that, in your view, are likely to decrease in

importance in your industry over the next five years?

	Decreasing in importance		Unsure		Not decreasing in importance	
Captains, Mates, and Pilots of Water Vessels	17.65%	3	70.59%	12	11.76%	2
Crane and Tower Operators	5.56%	1	61.11%	11	33.33%	6
First-Line Supervisors of Production and Operating Workers	4.55%	1	27.27%	6	68.18%	15
Plant and System Operators, All Other	5.26%	1	31.58%	6	63.16%	12
Ship Engineers	17.65%	3	70.59%	12	11.76%	2
Transportation Inspectors	10.53%	2	52.63%	10	36.84%	7

Question: Are there any occupations within your industry that are not listed above that you believe should be included as a priority within local workforce development and training because they are high demand occupations that typically pay living wages, i.e. at least \$25.26 per hour?

- Welders and Fabricators (n=3)
- CDL A drivers (n=2)
- Maintenance techs
- Interpretation and translation
- Painters
- Manufacturing Engineers
- Skilled trades people
- Anything with composites or boats, welders, draftsmen
- Aerospace, government
- Aviation Technicians
- Industrial Mechanics
- Inspectors

Question: Are there any occupations in your industry that are particularly difficult to fill because prospective employees lack the credentials that you prioritize or require for hiring?

- Welders (n=2)
- CDLA
- Machinists
- Aircraft structures
- Aircraft electrical
- Aircraft systems
- Aviation mechanics
- Composites
- Mechanical Machine Operators
- Inputting and reading PLC's of automated manufacturing plants.