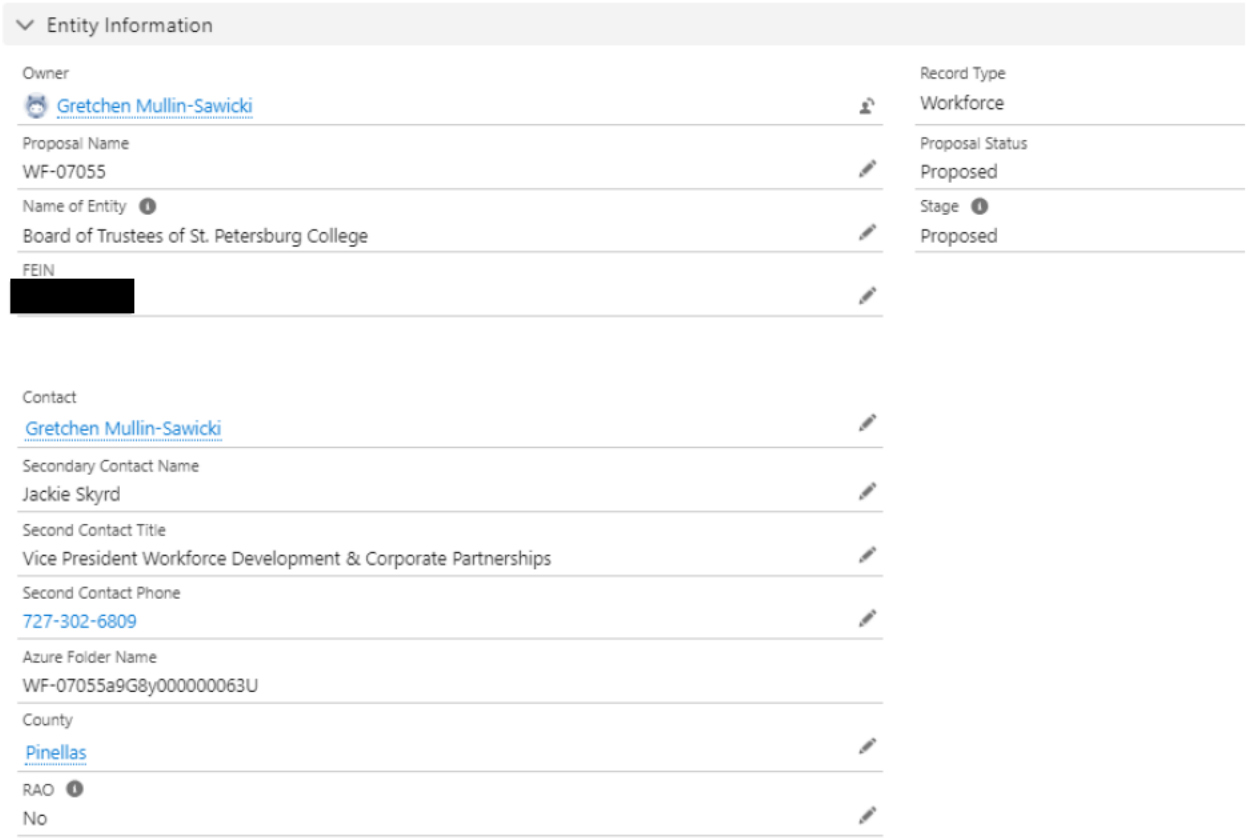


Program Requirements

Training Title and Description

Title: Semiconductor, Mechatronics, Automation and Robotics Training for Technicians (SMART Tech)

As a direct response to regional and state industry needs, St. Petersburg College (SPC) has developed its Semiconductor, Mechatronics, Automation and Robotics Training for Technicians (SMART Tech) initiative with an overall goal to build a robust talent pipeline with the high-tech skills necessary for today's Advanced Manufacturing workforce.

SPC's SMART Tech project will accomplish this by investing in the development of a high-tech Industry 4.0 Lab that provides hands-on, real-world experience to prepare students for today's Advanced Manufacturing and Semiconductor workforce. The project will also enhance and expand SPC's short-term technician training to include Industry 4.0 skills applicable across multiple employers and supporting Florida's growing semiconductor industry. An emphasis will be made to outreach to unemployed, underemployed and veterans to place them in high wage paying technicians jobs and apprenticeships, establishing a pipeline of technician talent for years to come.

Industry Need: Advanced manufacturing industries are increasingly relying on sophisticated processing chips, integrated circuits (ICs) and optoelectronic devices, for everything from smart phones and computers to electric vehicles. ICs, microcontrollers and optoelectronics are required across all advanced manufacturing sectors, from defense manufacturing to aerospace/aviation to construction, as well as sustainable and renewable energy production such as solar and electric vehicles. To keep pace with this growing demand, Pinellas County manufacturing companies are in desperate need of highly skilled technicians with specialized skills and knowledge in microelectronics, semiconductors and related applications.

As a major economic driver, supporting the talent pipeline of the advanced manufacturing industry is paramount, especially in the region's targeted industry clusters of aviation/aerospace/defense, microelectronics, and medical technologies. As shown in the attached manufacturing cluster map (see supplemental documentation), Pinellas County is a hub for global manufacturing leaders, including Jabil, Honeywell, Lockheed Martin, Plasma-Therm and Bigorre Aerospace. The county ranks second in the state for most manufacturing businesses (1,248) and third in the state for the most manufacturing employees (37,981) (Pinellas County Economic Development 2023, Florida Advanced Technological Education Center, 2023). The county also generates 1/5 of all state economic activity in medical device manufacturing (Tampa Bay Economic Development Council, 2019).

As reported by Pinellas County Economic Development and Forward Pinellas in its Target Employment & Industrial Land Study in 2022, job growth in certain sectors like semiconductor manufacturing and space vehicle manufacturing have experienced exponential growth, 386% and 1,047% respectively, without the pipeline in place to fill jobs. The attached 'Target Industry Job Growth Projections' highlights jobs and job projections for industry clusters targeted under the SMART Tech project. In addition, in 2021, amid the ongoing global chip shortage, semiconductor companies substantially ramped up production and innovation to address persistently high demand, leading to record chip sales. U.S. semiconductor companies accounted for sales totaling $258 billion, or 46% of the global market (Ravi, 2022). As the recipients of these chips manufactured by companies with plants elsewhere in the state and the country, DoD contractors like Honeywell, Raytheon, Jabil, and Lockheed Martin with two locations in Pinellas, are some of biggest companies that impacting the growth of manufacturing across Pinellas County. Meanwhile, Plasma-Therm, with its home base in Pinellas County, manufactures the equipment that produces semiconductor chips used by companies like Honeywell and Raytheon, for specialized military and space applications and for use in electric vehicles, optics, healthcare, advanced robotics, and 5G networks. Plasma-Therm is the only U.S. supplier of this equipment, and one of only three in the world. The company's more than 200 employees have manufactured and deployed more than 2,000 systems nationwide for customers that include the U.S. military, major commercial chip manufacturers, national labs, DoD contractors, and universities. They are looking to double their workforce in the next five years.

High demand occupations within this targeted industry sector include a varying set of job titles with cross-over skill sets across the advanced manufacturing industry and industry clusters, including titles such as diversified manufacturing technicians, mechatronics technicians, electrical technicians, electromechanical technicians, engineering technologists and technicians, semiconductor processing

technicians, machinists, solderers, industrial machinery mechanics, and quality assurance inspectors. With Florida's investment in the semiconductor industry, the semiconductor and electronic component manufacturing sector offers one of the highest job opportunities in engineering and technician roles.

SPC is the largest postsecondary education provider in Pinellas County, fueling the talent pipeline for the county and the Tampa Bay region. With more than 180 degree and certificate programs, including many high-demand, industry-recognized workforce certifications, the College's career-focused curriculum is created with input from industry experts to give students the skills they need to meet the needs of today's employers. Many global manufacturing leaders serve on SPC's Advisory Boards and look to SPC for training and employment needs, consistently hiring SPC graduates and upskilling current employees. For example, Plasma Therm is a global manufacturer of plasma etch, deposition and advanced packaging equipment for the specialty semiconductor and nanotechnology markets. A longtime partner and member of SPC's Engineering Technology Advisor Board, the company often hires locally, including SPC graduates, for technician positions such as Manufacturing Technicians, Supplier Quality Technicians and Production Quality Technicians, and relies on SPC to provide quality training.

Skills Gap: SPC has developed its SMART Tech project in direct response to employer feedback to address the regional and national urgency for producing a labor force with foundational skills in semiconductors, Industry 4.0 and related technologies, as well as specialized technical skills, such as in soldering and vacuum technologies. Termed Industry 4.0 or Smart Manufacturing, this advanced manufacturing environment demands a digitally competent workforce, integrating sophisticated technology underpinned by a curriculum rooted in practical applications combining a digital literacy with hardware, industrial software products and solutions, and in-depth exercises designed to educate learners. Within this cutting-edge work environment, workers are seamlessly connected and digitally empowered, collaborating with intelligent, integrated production systems comprised of smart, autonomous machines. The SMART Tech participants will be prepared with rich, stackable training to enhance productivity, problem solve through trouble shooting, and efficiently manage materials.

Building on SPC's successful mechatronics program developed under a previous Florida Job Growth grant, SPC has developed a long-term strategy for becoming a leader in advanced manufacturing training, to include the development of an Industry 4.0 Lab in the South St. Petersburg area known as Midtown. This strategy will directly impact the regional workforce and positively contribute to the critical semiconductor industry in the state and its economic impact in the nation.

Working directly with multiple industry leaders including Plasma Therm, TSE Industries, Honeywell and several others, as well Pinellas County Economic Development, SPC recently led a series of sector convenings to identify advanced manufacturing training needed across employers. In addition, SPC's Engineering Technology team has worked with the Florida Advanced Technological Education Center and educational partners to identify educational gaps in advanced manufacturing training, to include Industry 4.0 skills, an integration of IT skills with manufacturing technical expertise. Technicians of

today are expected to have knowledge in and work with a range of technologies that goes beyond traditional technician training, such as automation and robotics, Internet of Things, additive manufacturing, Augmented Reality and Machine Learning (AR/ML), multi-axis machining, and Generative Design.

Both nationally and regionally, Industry 4.0 has revolutionized Advanced Manufacturing. The significance of cultivating this new, highly skilled Industry 4.0 workforce through upskilling both entry-level and incumbent workers via college manufacturing training programs cannot be overstated. Forecasts project a staggering 2.1 million U.S. manufacturing jobs will go unfilled by 2030, posing a potential cost of $1 trillion in 2030 alone (NAM Newsroom, 2021). Compounding this need, in the Tampa Bay region, defense contractors represent $20B and 175,000 total jobs (Walsh, 2022), and nine of the top 10 U.S. defense contractors have a presence in Tampa Bay (Tampa Bay Economic Development Council, 2023). These companies require skilled technicians to produce products and services for our U.S. Homeland Security.

The region urgently requires a highly skilled Advanced Manufacturing workforce that blends foundational skills with a vital integration of IT and Manufacturing expertise, pivotal in propelling the sector beyond static competency into a dominant powerhouse of dynamic production (Metrology News, 2023). SPC's SMART Tech initiative answers the call to provide critical foundational technical skills along with Industry 4.0 skills and create a strong pipeline of skilled and certified, local technicians in the advanced manufacturing sector and related industries.

Community Need: SPC's SMART Tech project will also provide opportunities for economic mobility for the area's socially and economically disadvantaged individuals SPC's mission is to empower its students and community to achieve success and economic mobility through academic excellence and engagement. As a part of Florida's state college system and an open access community college, SPC serves a diverse population of more than 40,000 students annually in credit and non-credit programs. Most are non-traditional students, including low-income students, first in their family to attend college, minority students, returning veterans and working adults supporting families, all indicators recognized as potential barriers for postsecondary enrollment and completion. SMART Tech training will prepare students to meet regional, national and global industry demands, and, in turn, provide economic mobility for participants and their families, especially those in the south St. Petersburg area, which historically included higher rates of unemployment and underemployment.

At the same time, SMART Tech will be a training and job source to the more than 350,000 veterans residing in the Tampa Bay Metropolitan Statistical Area, 84,000 of whom live in Pinellas alone (U.S. Department of Veterans Affairs, 2020). When convening the industry partners to establish the technician training program, many voiced the priority given to veteran applicants for employment, as they often have the clearance credentials and backgrounds needed to work in the federal contractor space.

Program Design: The SMART Tech project will focus on four main goals: 1) Support the development of an Industry 4.0 Automation and Robotics Lab at SPC's Midtown campus to offer fundamental

hands-on training through space renovation and equipment purchases, 2) Enhance and expand short-term training options that address the skill gaps identified by business, 3) Outreach and enroll participants into targeted short-term training programs to support skills upgrade,, , and 4) Ensure job placement in high-wage jobs to strengthen the regional talent pipeline and economic mobility for participants.

1) Institute Industry 4.0 Lab
A major focus of the SMART Tech proposal is to support the development of a start-of-the-art Industry 4.0 Lab to strengthen the advanced manufacturing clusters targeted by Pinellas County Economic Development, regional economic and workforce organizations, and the state of Florida: Aviation/Aerospace/Defense; Medical Technologies; and Microelectronics. The nexus of industry, education, community and government, the Industry 4.0 Lab will be designed to address the training needs of the community for an in-demand industry that offers high-wage jobs. Not only will the Center address the digital literacy and technical training needed for today's manufacturing workforce, it will also bring this training to a community that lacks access to training education in Midtown St. Petersburg.

The proposed Center will be located In the former Midtown Community Center/Gymnasium, part of SPC's Midtown Campus in south St. Petersburg. This area is part of the South St. Petersburg Community Redevelopment Area (CRA), which was established by the City of St. Petersburg to promote reinvestment in housing and neighborhoods, commercial corridors, business development, and education and workforce development. The redevelopment of the Community Center/Gymnasium building, which was purchased by the College to preserve this important community resource, is an investment in this high needs community.

Plans for renovation are already underway, with a commitment from the College to begin rehabilitating the building's infrastructure, to include updating its HVAC and electrical systems and exterior envelope over the next three years. Florida Job Growth funding will support this endeavor by providing needed funding for the design and renovation of the interior space. The design will include critical architectural and engineering costs and renovation will include necessary changes and updates to the interior. The space offers a unique opportunity to accommodate large scale equipment in demand for industry, such as multi-axis milling machines, CNC machines and 3D printers. Other funding sources to support the renovation project includes $3.5 million from the State of Florida's Coronavirus State Fiscal Recovery Fund (SFRF), which has been committed to the project.

The Industry 4.0 Lab will be an innovative environment with hands-on engagement that provides students with in-depth learning and real-world experience. The Center will house an array of training programs under the advanced manufacturing umbrella, such as mechatronics/robotics, soldering, semiconductor fabrication, CNC machining, RF programming, vacuum systems, etc. The Center will emulate a true production operation combining the excitement of advanced technology with application-based curriculum, learning resources, credentials and expert instructor training to ensure success. Production-grade equipment in transformational technologies will be provided to take learning to the next level and create a digitally skilled worker pipeline. This integrated educational

experience will equip students to win in a high-tech future.

2) Develop Specialized Training Options for Upskilling
As part of the SMART Tech initiative, SPC will build on current efforts to enhance and expand short-term technician training. Specialized training options will provide participants with stackable credentials and concentrated skills in Advanced Manufacturing pathways, from advanced automation to robotics to semiconductors.

SPC's recent sector convenings identified common skills sets needed across a range of employers and occupations, including: basic foundation skills (AC/DC, measuring), soft skills (ability to work on a team, take direction), computer skills (install drivers, intermediate IT knowledge), soldering, digital robotics with programming and basic vacuum technology. As a result, SPC has developed a plan to both enhance existing courses and develop new courses needed to address skills gaps for both new and incumbent workers:

• Entry-level Technician Training: 2-week pre-start training program will provide foundational skills, assess participants' strengths and get students started on a laddered training pathway that best suits their talents and interests while driving the pipeline for talent to businesses. Wages for this role average $18-20 and typically provide valuable benefits.
• Skilled Technician Training: Building on these efforts to grow beyond the pipeline for entry-level technicians, the SMART Tech initiative will help enhance existing training in manufacturing pathways and develop new courses where needed for specialized Industry 4.0 skill development, such as for multi-axis machining, soldering, metal-forming, RF programming and vacuum systems and semiconductor fabrication. Micro-credential and credential options are driven by industry demand as voiced and documented through SPC's industry-led collaborative program design conversations. Wages for jobs requiring these skills range from $20-28/hour and also typically provide benefits.

Below are examples of the types of trainings and credentials that will be considered for delivery under SMART Tech, along with the types of equipment required and budgeted under the grant:

General Industry 4.0:
• NIMS Smart Standards
• SACA Industry 4.0 Standards
• Soldering (IPC & J Standard)

Specialization: Multi-Axis Machining (requiring multi-axis machine/s)
• NIMS Stackable Machining
• NIMS CAM
• Tooling U
• NOCTI

Specialization: Additive Manufacturing (requiring 3D printers and software)
• NIMS Additive Manufacturing (AM) Machine Operator & Designer

• NOCTI AM Essentials
• Tooling U AM Technician

Specialization: Automation & Robotics (requiring Industrial Robots)
• Fanuc/NOCTI Robotics
• Festo I4.0
• SACA Smart Automation

Specialization: Generative Design (requiring a computer lab and software)
• NIMS CAD/CA
• AutoDesk

Specialization: Artificial Intelligence/Machine Learning (requiring AR/VR equipment and technology and computer lab)
• AWS

These short-term workforce training options will provide foundational skills that may articulate towards new or existing certificates or an associate degree within SPC's Engineering Technology program. This progression provides a pathway to advanced level careers, helping participants earn high demand, high wage jobs in the engineering technology field while fulfilling industry needs. By developing short-term, upskilling training options and articulations for college degree credit, the SMART Tech project will help build opportunities for students to gain stackable credentials so they can seamlessly continue their education if they choose or go right into the workforce.

Florida Job Growth funds will include faculty deliverables and consulting fees to address curriculum needs over the three-year grant period, with courses being enhanced or developed in phases. Phase one will address immediate training options using portable equipment that can be implemented in existing spaces while the Industry 4.0 Lab is being designed and renovated, and Phase two will provide training options requiring larger, more stationary equipment that will be offered in the new Lab upon its completion. Funding will also support a Lab Tech Specialist to support the operation and maintenance of related equipment for new and enhanced programming, and an instructor with industry expertise to deliver hands-on training for targeted programs.

3) Outreach and enrollment
SPC's SMART Tech project will also include outreach and recruitment to enroll participants in the targeted short-term training options. Based on best practices and building on successful community partnerships, the project team will engage community partners to assist with grass roots marketing efforts through hosting information sessions, workshops, guest speakers and/or other outreach strategies. With a goal of enrolling a minimum of 275 participants in targeted training programs over the three-year grant period, the SMART Tech initiative will support participants through along their chosen manufacturing pathway by providing tuition scholarships for low-income participants. The project will leverage other funding sources where possible for scholarships, such as the Florida Department of Education's Open Door program, CareerSource, SPC Foundation scholarships and/or

other grants.

St. Petersburg College has documented experience creating strong community partnerships to outreach and enroll students into programs. One example is St. Pete Works. St. Pete Works is a program SPC operates for the City of St. Petersburg that serves as a model talent pipeline initiative for cities focused on using Community Redevelopment Area (CRA) funds for training and workforce development of socially economically disadvantaged individuals. St. Pete Works is a collaborative project of community-based organizations working together with employers and local agencies to provide quality services that support workforce opportunities for residents. The program prepares CRA residents for employment in emerging jobs through training, education, supportive services, job placement, and mentoring. The goal of this initiative is for CRA residents to acquire skills in targeted industries through short-term training programs that lead to gainful employment. In just over two years, SPC has served over 420 residents, placing nearly 350 of them in jobs. Unique aspects of the program include the City's ability to carve out training dollars from their CRA fund to budget $2M over three years for programming. The program also links organizations through sub-contracts including Gulf-Coast Jewish Family Services to provide case management services, Pinellas Ex-Offender Coalition to provide ex-offender support, and the Pinellas County Urban League for outreach support, while St. Petersburg College, Pinellas Technical College and others provide job training and placement.

This past May, the City of St. Petersburg was selected by the National League of Cities (NLC) to join the Good Jobs, Great Cities Learning Network, in big part due to the results of St. Pete Works. A partnership between NLC and the U.S. Department of Labor, programs from cities in the network spur innovative and scalable city-supported solutions that upskill and reskill workers into quality, high-demand jobs in infrastructure, clean energy, and advanced manufacturing jobs made possible by investments from the Bipartisan Infrastructure Law (BIL), the CHIPS and Science Act, and the Inflation Reduction Act (IRA). The Learning Network helps the 17 participating cities learn from one another and other national resource providers as we build a strong local ecosystem for workforce development. Just this past summer, the City of Clearwater approved moving forward with replicating the St. Pete Works model and other cities from the region are in the process of following suite, including the City of Tampa, City of Tarpon Springs, and City of Pinellas Park. If these come to fruition, SPC will be able to leverage the paid training resources provided by the cities through local funding, supporting program sustainability well into the future.

4) Ensure placement in high wage jobs
Because of the strong engagement and commitment of industry partners for this program, SPC anticipates an 80% job placement rate for completers and will work with those who may not be ready for placement to expand their skills through additional skills training where needed. Based on the sector convenings and industry feedback, some companies are interested in the Registered Apprenticeship model, where students are hired in at entry-level and upskilled based on the specialization needs of the particular employer. Others are interested in a similar model that is not as formal as a registered apprenticeship but is designed in a similar capacity. SPC's Apprenticeship team

will work with these companies to provide additional supports and leverage access to available funding for apprenticeships.

Not exclude unemployed or underemployed

Yes

Support Description

SPC'S SMART Tech project supports programs at state colleges by expanding availability and access to enhanced and stackable, short-term workforce training at the community college level, including enhanced training, recruitment and enrollment. Even more significant, the development of a high-tech Industry 4.0 Lab at SPC will place the College at the forefront of workforce education and support continued growth for the region and state's targeted industries, contributing to the state's goal of "making Florida the number one state in the nation for workforce education by 2030." (Florida Governor, 2022). In addition, by bringing this workforce Industry 4.0 Lab to South St. Petersburg, the project not only provides critical training to a community that has traditionally lacked access, but its location will also strengthen partnerships with key employers in the area, including U.S. defense contractors. Located near Pinellas Technical College – St. Petersburg, SMART Tech will extend training offerings that might not be available through the lab to ensure we're meeting all the skills needs of the employers and serving as a cross-referral partner.

The Industry 4.0 lab directly responds to industry needs and will further build on the College's partnerships with area businesses. Letters of commitment are available upon request from multiple employers, including: Plasma Therm, Jabil, Lockheed Martin, Honeywell Aerospace, Eclipse Energy Systems, Bigorre Aerospace Corporation, Engineered Fluids, Inc., Safety Biometrics, Seal Dynamics, Itellitech, Beckwith Electrical, Custom Manufacturing and Engineering, Kemco Systems, Monin, Performance Feeders, Inc., Sun Microstamping Technologies, Tampa Microwave, TSE Industries and more. These relationships increase the College's profile and links community college education with global industry leaders.

Economic Opportunity Description

Economic Opportunities: SPC's SMART Tech project will provide economic opportunities for the area's socially and economically disadvantaged individuals, uplifting one of the county's most at-risk communities. The most densely populated county in the state, Pinellas has more than 960,000 residents, 12.3% of whom live in poverty (U.S. Census, 2022). The county includes 16 federally-designated opportunity zones, or economically distressed areas (Pinellas County Economic Development, 2023), most of which are near or adjacent to SPC campuses, including seven in South St. Petersburg. Opened in 2015, SPC's Midtown campus serves the south St. Petersburg community where 42.5% of the population lives at or below 150% of the Federal Poverty Level (Policy Link, 2019). The campus location addresses chronic barriers to post-secondary education and workforce training, including lack of transportation and a shortage of higher education and training options in the area. The community that surrounds SPC's Downtown/Midtown Campus (DTMT) is unique with large, thriving Fortune 500 Companies, but also staggering rates of unemployment and underemployment. Responding to local industry needs, SPC's Midtown Campus offers access to higher education and workforce training in the center of the community as a means to help end generational poverty. Additionally, SMART Tech will support the employment and training needs of our local veterans. With more than 350,000 of them living in the region, we will have a strong pool from which to outreach and recruit candidates intererested in the field.

The overarching goal of the SMART Tech initiative is to increase the number of individuals pursuing a certificate or degree to meet the workforce needs of employers in the Tampa Bay region and beyond. The development of a high-tech workforce training center in the area will substantially increase the availability of short-term training that prepares students for current in-demand, high-wage jobs, fulfilling employers' needs while contributing to local economic mobility and stability. Manufacturing workers across the state earn an average of nearly $70K/year (Enterprise Florida), with average hourly wages of $21 to $29 per hour for targeted occupations in the county (23/23 RDOL). With programs ranging from as little as 8 to 16 weeks, students can quickly gain industry certifications that lead to high wage jobs with living wages and opportunities for advancement. These programs offer both academic and career pathways as many trainings articulate to degree programs including SPC's Engineering Technology Associate in Science degree. Many of these programs are already being offered at SPC's campuses, and plans are underway for new credit and non-credit courses and certificates to be developed over the next three years, including in semiconductor fabrication. The new training center will provide dedicated space to expand program offerings and purchase new equipment to offer hands-on experience in a real world environment.

Understanding that the needs of employers are immediate, targeted training will take place in existing spaces at SPC's Midtown Center, Tarpon, and Clearwater campuses while renovations are underway, spanning the entire County for service delivery.

Economic Impact: National employment growth for the manufacturing sector is expected to increase annually by 0.2% to 16.5 million workers, and the number of manufacturing establishments are projected to increase from 785,274 in 2022 to 853,535 in 2028. According to Florida's 2022 Target

Industries report, the state's manufacturing industry contributes approximately $64 million (5.2%) of the state's GDP, an increase of 9.5% since 2019 (Florida Target Industries, 2022).

With average wages of $24 per hour for entry level positions, the economic impact will be immense for individuals, particularly for those in low-income opportunity zones in the county. Those living at or below poverty level will be able to quickly gain skills that lead to living wage careers with significant growth potential. Participants will be able to continue their education if they choose along a clear progression, increasing their skills and industry certifications, and gaining higher wage potential, allowing them to advance in their careers, becoming managers or supervisors. With 2,870 annual openings for First-Line Supervisors of Production and Operating offering an average of $29.81/hour in the county, the growth potential for these positions is considerable.

With approximately 206 completers earning an average of $24/hour, or $49,920 per year, in the workforce, the potential economic impact is an estimated $10.2M annually going back into the community through cost of living, while contributing to the continued growth of the manufacturing industry and the state's overall GDP.

Outcome measures: The SMART Tech project will utilize a variety of quantitative and qualitative measures to monitor progress towards project goals and overall project success. Quantitative metrics used to measure success throughout the project period will include:
• number of participants enrolled in targeted training
• number of completers (participants who complete targeted courses/programs)
• number of participants in targeted training gaining industry certifications
• job placement and wages of completers (as shown through 6 month post survey)
• job advancement (employment advancements in role or wages by participants employed at program start)

Qualitative measures that will be tracked throughout the project period will include:
• Progress toward renovation of Midtown space and Industry 4.0 lab
• Short-term training developed
• Partnerships with community organization and effective outreach strategies
• Outcomes from annual industry and stakeholder convenings
• Participant feedback on training opportunities
• Participant outcomes and personal stories as a result of training

SPC's Grants Development and Grants Accounting teams support each grant's implementation to ensure both programmatic and fiscal compliance throughout the project period. The SMART Tech project staff, Grant Management Specialist and Grant Accountant team will meet regularly throughout the project period to monitor grant activities, purchases, tracking mechanisms and outcomes, assessing progress and making any necessary recommendations or adjustments. Coordinated efforts among project leadership, workforce program coordinators, grants and accounting staff promise exemplary management of grant resources and ensure progress towards project goals and deliverables and overall program success.

Transferable Skills Description

Working directly with multiple industry leaders including Plasma Therm, TSE Industries, Honeywell, Lockheed Martin and many others, in addition to Pinellas County Economic Development, SPC recently led a series of sector convenings to identify advanced manufacturing training needed by the industry, that would go cross any one employer. The group worked toward consensus development on the foundational skills they would require to hire a participant at minimum. It has been recognized by industry partners that the skill set of the technician also provide skills for individuals that are needed for jobs in construction, broadband cabling, electric vehicle, and other jobs related to electronics and skills tied to electrification. This includes the eminent demand for workers to support local infrastructure investments by the Florida Department of Transportation, as well as the 10,000 jobs needed to develop the new Tropicana Field site over the next 10 years.

FL Targeted Industries

Yes

FL Targeted Industries Description

SPC's proposal aligns with Florida's target industry of Manufacturing, and also intersects with all other Target Industries, including Life Sciences, Aviation & Aerospace, Defense & Homeland Security, Information Technology and Cleantech (Target Industries, 2022).

Support Public Program(s)

As an open-access community college, all certificate and degree programs at SPC are open to the public, with eligibility for certain programs determined by completion of prerequisite courses or equivalency of training in another state. SPC's SMART Tech project will focus on short-term training geared towards individuals seeking entry level positions to enter the workforce, and those seeking credentials to change careers or advance in their career.

Targeted outreach through community partners will help focus recruitment on those who are low-income, unemployed and/or underemployed, including a special emphasis on recruiting veterans who often have the clearance credentials required by defense contractors to hire. By offering multi-level options in a variety of fields, SPC provides students the flexibility to achieve their goals within their own self-paced timeframe, anywhere from a few weeks in an online environment to a two-year degree based in the classroom as they progress through their chosen pathways.

As the workforce board serving Pinellas County, CareerSource Pinellas will provides access to wrap around supports for WIOA eligible participants, such as transportation and childcare costs, as well as a referral partner for customers who may be interested in the program and businesses looking to hire students. They may do targeted job fairs for the industry sectors; facilitate group registration days, streamlining registration and ensuring seamless integration into the training. They also have staff dedicated to supporting veterans, who they can refer into SMART Tech training. Eligible participants receive up to $5,000 to cover the cost of their training with each CareerSource assessing

eligibility. Ineligible participants many receive funding support through other grant funding such as Open Door and the Speed Family Foundation non-degree workforce funding through the SPC Foundation.

Description of Criteria Match

As part of the Florida College System, SPC is responsive to the needs of both the public and private sectors in the state of Florida, and strives to align programs with industry-recognized certifications and credentials. The Florida Department of Education coordinates all industry certification alignment and provides oversight on federal or state regulatory agency, industry, proprietary, and third-party developed assessments leading to certification. SPC follows these regulatory guidelines to ensure that academic programs are responsive to employer needs and demand, resulting in students appropriately trained for high-wage, high-demand employment. Based on employer demand and advisory board feedback, SPC integrates industry-driven competencies into college curricula to ensure that students can obtain credentials valued by the labor market.

Programming developed under the SMART Tech initiative will be aligned with curriculum frameworks determined by the Florida Department of Education and supported by the Florida College System. These frameworks define the content to be learned, clear standards and benchmarks for achievement and assessments tied to those standards. Frameworks are assessed every three years to maintain compliance with industry standards and labor market needs. All programs of study within these frameworks must also include a pathway leading to a postsecondary credential (i.e. certificate, diploma, associate, or baccalaureate degree, industry certification, or licensure).

Demand Occupation Lists

Yes

Demand Occupation Lists Description

The project aligns with multiple occupations on the Regional and Statewide Occupation Lists, including Electrical and Electronic Engineering Technologists and Technicians, Machinists, Sheet Metal Workers, Solderers and Industrial Machinery Mechanics. In addition, the project responds to industry demand for additional occupations, including mechatronics technicians, electromechanical technicians, semiconductor processing technicians, and quality assurance inspectors.

Program Specifics

Existing Program Expansion

Yes

Existing Program Expansion Description

SPC's SMART Tech project will build on SPC's existing mechatronics program, which currently includes automation and robotics programming, and articulations towards a credit certificate. The SMART Tech project will expand program offerings through developing new curriculum, courses and articulations, and increasing hands-on, in person training through purchase of new equipment and creation of a state-of-the-art Industry 4.0 lab, expanding access to training opportunities to the Midtown St. Petersburg area.

Training Delivery Description

Existing courses are offered both online and/or in a hybrid model. Online courses can be completed from any location. New and enhanced programming may be offered in-person, online and/or in a hybrid model, with in-person classes and labs held at SPC's Clearwater campus, Tarpon campus and/or Downtown/Midtown campus locations in St. Petersburg.

Program sustainability description

The emphasis of the Florida Job Growth investment is for program start-up. The development and implementation of the Industry 4.0 lab and expansion of training options are expected to take time in the beginning to ramp-up, but will provide a steady flow of trained technicians needed by local companies well into the future.

A consultant will be brought in to provide industry expertise to assist in long-term planning for the development and sustainability of programming and the feasibility and design of a larger National Manufacturing Training Center to support talent pipeline development for the region. The College's long-term vision for the Industry 4.0 lab and ultimately a state-of-the-art Manufacturing Training Center is to be a leader in advanced manufacturing education. Aligned with the College's strategic plan to serve as a leader, convener, and catalyst for positive change in the community, the Industry 4.0 lab and Center will serve as a premier training site that consistently responds to industry demand and keeps pace with technological advances to ensure a well-trained workforce and sustain Florida's competitiveness in the global marketplace.

Length of Program

Targeted training will be offered in courses that can be completed in as little as 8 to 12 weeks, and some up to 16 weeks. Many courses are currently available online and can be completed at the participants' own pace and any time during the year. Short-term, accelerated training options.

Indicate the number of anticipated annual enrolled students in the proposed program.

275

Indicate the number of anticipated annual completers in the proposed program.

206

Certifications, degrees with CIP codes

Industry certifications are embedded in most short-term training courses. Targeted training for the SMART Tech project will include multiple certifications under CIP Code 150407, such as: PMMI Mechatronic Electricity 2, Programmable Logic Controllers and Fluid Power, as well as OSHA 10. Additional industry certifications that may be offered through new courses include: IPC-J-STD Soldered Electrical and Electronic Assemblies; NIMS Machining, Metal forming, Industrial Technology Maintenance, Dimensional Measurements, Additive Manufacturing, AWS, Industry 4.0 such as NIMS Smart Standards and/or SACA and, certifications in RF, Plasma and Vacuum Systems.

Program Begin Date

3/1/2024

Program End Date

2/28/2027

Program Budget

Local Match Amount
Yes

Requested Total
$6,411,000.00

Source - City / County
$0.00

Source – Private
$0.00

Source – Other
$3,500,000.00

Source - Other Details
State of Florida's Coronavirus State Fiscal Recovery Fund (SFRF)

Cost – Equipment
$2,000,679.00

Cost – Personnel
$219,535.00

Cost – Facilities
$6,855,000.00

Cost - Training Materials
$78,000.00

Cost – Tuition
$90,000.00

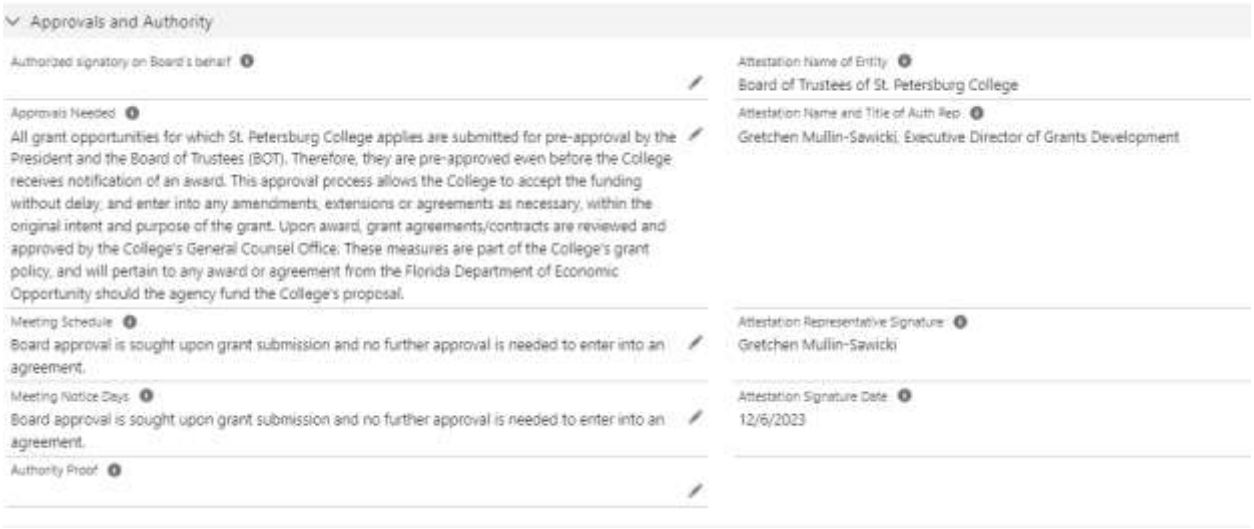
Cost – Other
$667,786.00

Cost - Other Details

Other costs include contract services, outreach, travel, printing, and indirect.

Cost – Total

$9,911,000



SPC St. Petersburg College

FLORIDA JOB GROWTH
BUDGET NARRATIVE

Personnel and Fringe: **$219,535**

Personnel: A position will be developed for a **Laboratory Technical Specialist** to support the maintenance and operations of lab technology and equipment for the Industry 4.0 lab. Providing time to ramp up project implementation and hire the position, the Lab Tech Specialist position is estimated at $65,000 per year in Years 2 and 3, with a 3% cost of living increase in Year 3.

Faculty deliverables for curriculum development and updates are estimated at $48.07/hr x 80 hours per year.

Fringe for both the Lab Specialist and Faculty deliverables have been calculated at 6.2% for Social Security, 1.45% for Medicare, 13.57% for Retirement, and 31.78% for healthcare and other benefits = 53%.

Equipment: **$2,000,679**

Equipment for advanced manufacturing technician training, such as Vertical Mills (totaling $285,000), multi-axis machines (totaling $464,995), Manual Lathes (totaling $45,000), Laser cutters (totaling$100,000), 3D printers and related components (totaling $527,000), and other equipment as determined by program needs. Estimating 50% of purchases in Year 1 and 50% of purchases in Year 2. All equipment purchases are estimated at $2,000,679.

Facilities: **$3,355,000**

An estimated $3,355,000 for the renovation of an approximately 15,000 sq ft space, to include the gym and flanking office/classroom, at SPC's Midtown Center. Costs include an estimated $1,500,000 for the renovation design (including architect and engineering fees), and $1,855,000 for facility renovations.

Tuition: **$90,000**

Scholarships for tuition and fees, including certification testing fees, for participants to support enrollment for low-income students in targeted training who may not qualify for other funding support, such as from CareerSource. Estimated at $2,000/student x 10 students in Year 1, 15 students in Year 2, and 20 students in Year 3, for a total of $90,000.

Training Materials: **$78,000**

Materials needed for targeted training such as digital optical probes, such as mill vises, speed handles and vise grip sets, spotting drills, air nozzles and hoses, estimated at $78,000.

Other: **$442,318**

Travel project staff to attend meetings and events, estimated at approximately $2,000.

Materials and supplies need Materials and supplies for outreach such as banners, tablecloths, etc., as well as for office supplies and other materials that may be needs for meetings, convenings, info sessions, workshops, etc., estimated at $3,318.

Outreach for recruitment and enrollment efforts, such as promoted posts on social media, radio, streaming, LinkedIn, etc., estimated at $10,000.

Printing for items needed for outreach events and workshops, such as flyers, posters and signs, estimated at $2,000.

Contract services for the following, estimated at $425,000:

- External subject matter expert to support long-term planning and sustainability of programming for a 45,000 sq ft National Manufacturing Workforce Training Center, estimated at $100,000;
- External subject Matter expert/s to develop curriculum for short term training programs in advanced manufacturing/Industry 4.0, estimated at $50,000;

- Instructor to deliver specialized training for Advanced Manufacturing courses/programming, estimated at $200,000.
- Contract services for various community organizations to provide outreach services to assist with recruitment for targeted bootcamps and training programs. Services may include workshops, seminars, information sessions and/or other grassroots distribution and dissemination of program information, and may vary in scope and delivery by each provider, estimated at $60,000.
- Annual convening of partners and stakeholders, facilitated by SPC's Collaborative Labs, estimated at $5,000/year x 3 years, for a total of $15,000.

Indirect: **$225,468**

Indirect and administrative costs associated with the grant, calculated at 33.41% of direct costs less equipment, facilities, tuition and contracts >$25k.

Total Florida Job Growth Request: **$6,411,000**

Other Funding Sources:

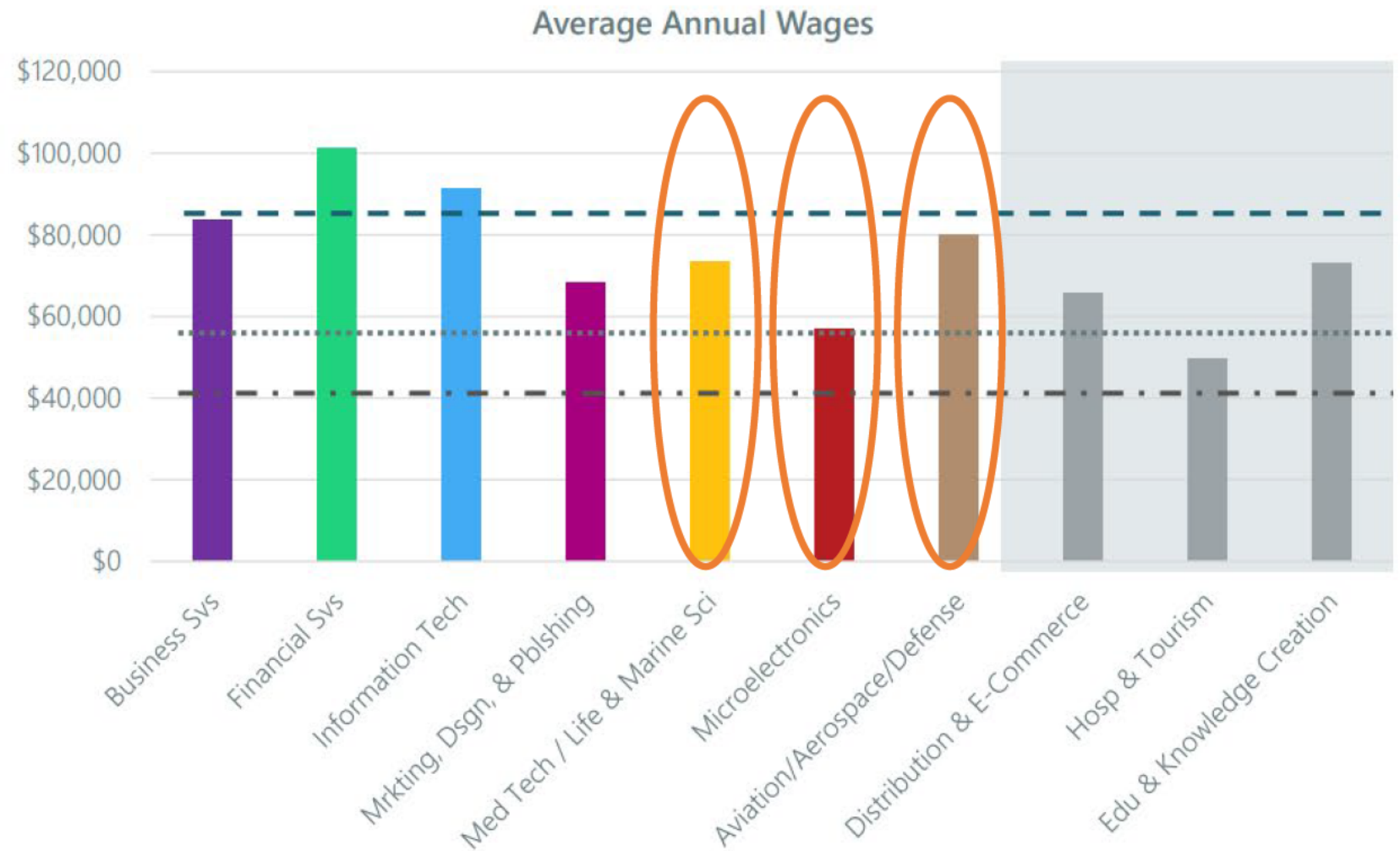
State of Florida's Coronavirus State Fiscal Recovery Fund (SFRF) $3,500,000

TOTAL PROJECT COSTS: **$9,911,000**

St. Petersburg College
SPC

SPC's SMART Tech initiative will support training in Pinellas County's Targeted Industry clusters.

Target Industries have higher average wages than other primary clusters in Pinellas County



$86,000
Target Industries Avg. Wages

$58,500
Other Primary Clusters Avg. Wages

$45,000
Living Wage [1]

- Target Industries have higher average wages and are key to growing the County's economy and quality of life
- Leads to disposable income to spend on supporting secondary industries like retail and hospitality

Medical Technologies / Life & Marine Sciences – *composed of manufacturing and research sectors*

5,815 2021 Jobs

$1.2B 2020 GRP

$73,503 2021 Avg. Wages

1.39 Location Quotient

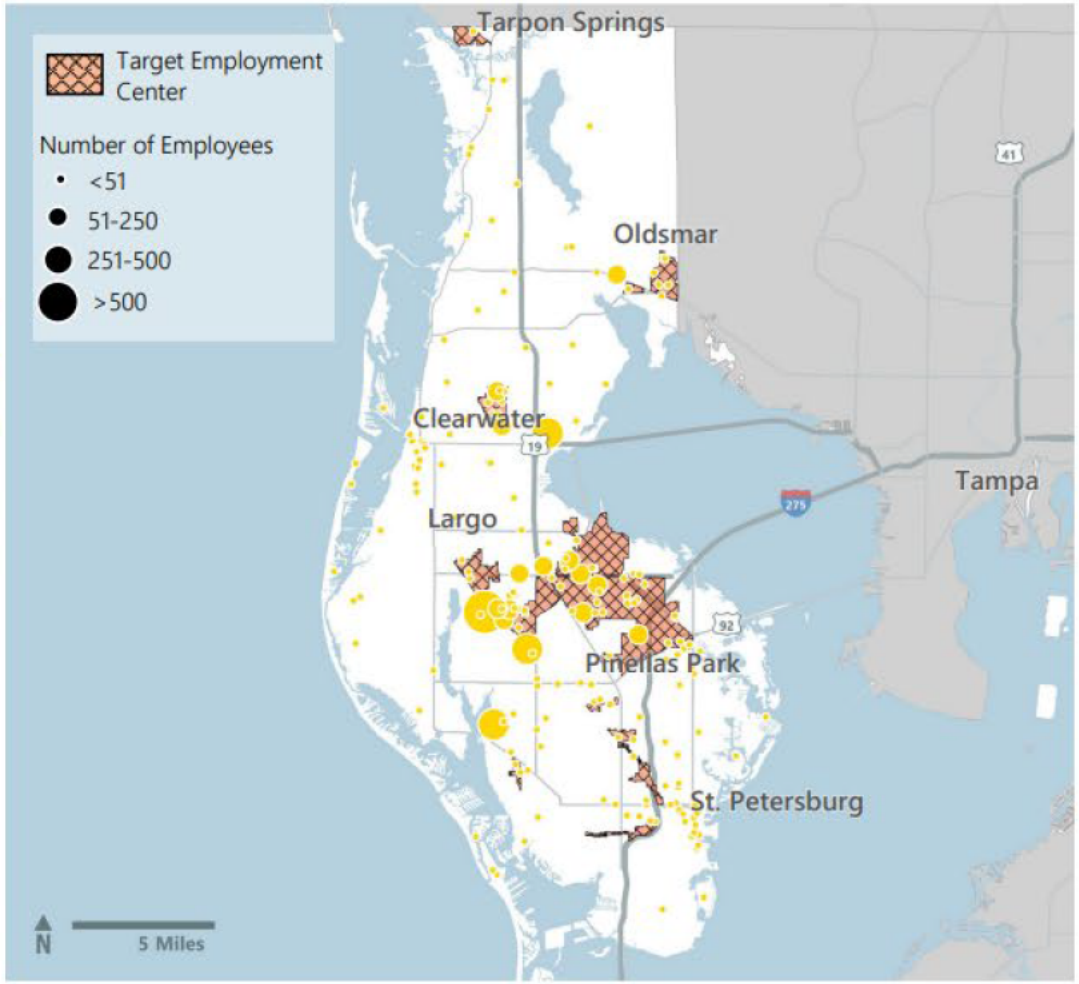
100-1,200 Square feet per employee

Sectors

Medical Technologies / Life & Marine Sciences					
NAICS	Name of Sector	2021 Jobs	2012-21 Job Growth	Avg Wages	PCED
325412	Pharmaceutical Preparation Manufacturing	1,496	168%	$74,412	X
339112	Surgical and Medical Instrument Manufacturing	1,377	-2%	$71,708	X
339115	Ophthalmic Goods Manufacturing	667	-23%	$67,236	X
326299	All Other Rubber Product Manufacturing	649	74%	NA	X
339113	Surgical Appliance and Supplies Manufacturing	353	5%	$53,716	X
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	338	-50%	$95,628	X
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	226	-31%	$91,000	X
541714	Research and Development in Biotechnology	225	427%	NA	X
333314	Optical Instrument and Lens Manufacturing	159	549%	NA	X
326291	Rubber Product Manufacturing for Mechanical Use	98	-35%	NA	X
325411	Medicinal and Botanical Manufacturing	58	-15%	NA	X
339114	Dental Equipment and Supplies Manufacturing	56	369%	$47,580	X
334519	Other Measuring and Controlling Device Manufacturing	32	-41%	$63,128	X
334517	Irradiation Apparatus Manufacturing	31	-16%	NA	X
541713	Research and Development in Nanotechnology	30	NA	NA	X
339991	Gasket, Packing, and Sealing Device Manufacturing	20	-37%	NA	X
325413	In-Vitro Diagnostic Substance Manufacturing	0	NA	NA	X
325414	Biological Product (except Diagnostic) Manufacturing	0	NA	NA	X
334514	Totalizing Fluid Meter and Counting Device Manufacturing	0	NA	NA	X
334516	Analytical Laboratory Instrument Manufacturing	0	NA	NA	X

Source: BLS, Emsi, Pinellas County, SB Friedman

Medical Technologies/Life & Marine Sciences Businesses



Source: Data Axle, Esri, Forward Pinellas, SB Friedman

Microelectronics – *composed primarily of sectors using manufacturing spaces*

4,782 2021 Jobs

$917M 2020 GRP

$56,977 2021 Avg. Wages

1. 81 Location Quotient

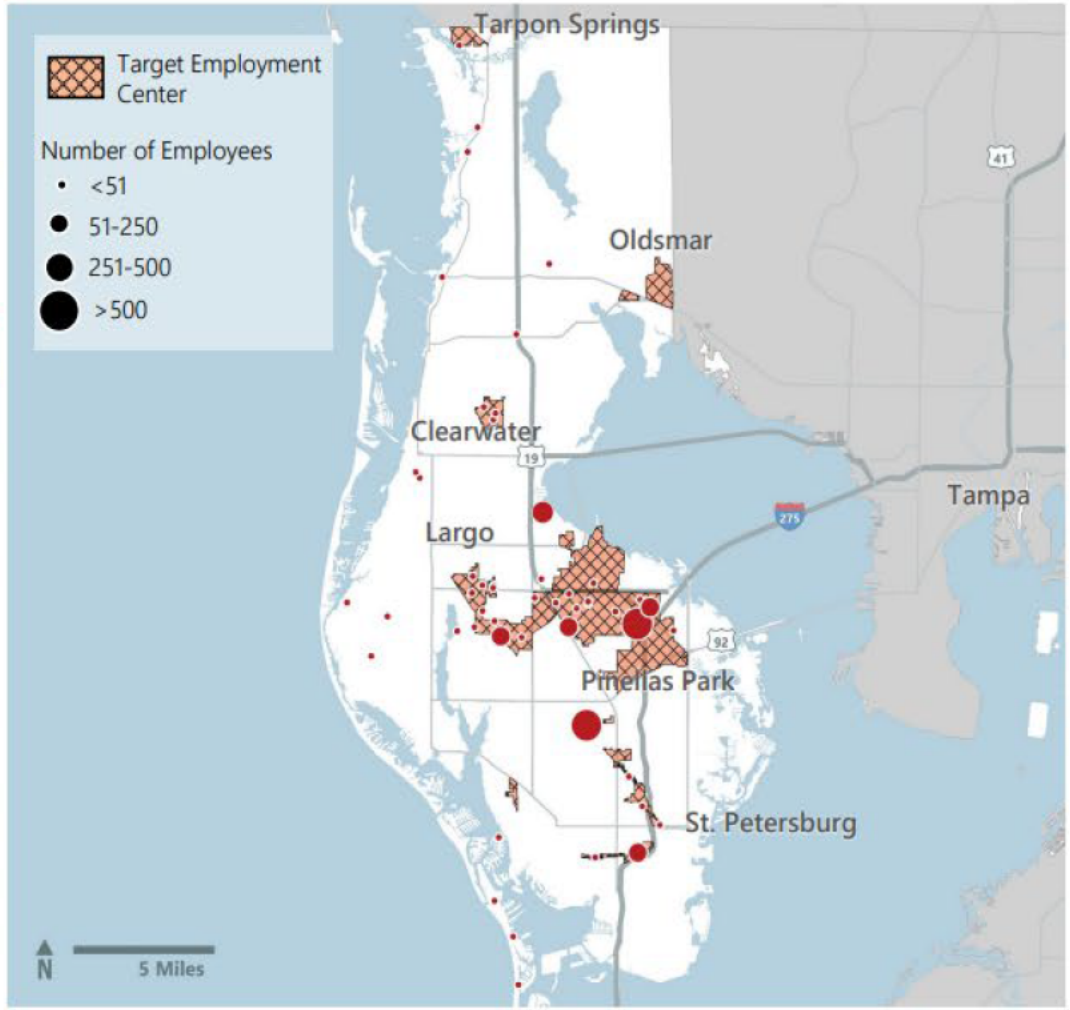
500-1,500 Square feet per employee

Sectors

Microelectronics					
NAICS	Name of Sector	2021 Jobs	2012-21 Job Growth	Avg Wages	PCED
334412	Bare Printed Circuit Board Manufacturing	1,752	16%	NA	X
334111	Electronic Computer Manufacturing	655	57%	NA	X
423690	Other Electronic Parts and Equipment Merchant Wholesalers	526	-37%	NA	X
334419	Other Electronic Component Manufacturing	404	-24%	$55,432	X
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	309	37%	$49,504	X
335314	Relay and Industrial Control Manufacturing	296	20%	$67,028	X
334413	Semiconductor and Related Device Manufacturing	215	386%	NA	X
334417	Electronic Connector Manufacturing	157	74%	NA	X
333242	Semiconductor Machinery Manufacturing	151	72%	NA	X
334416	Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing	104	-35%	NA	X
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing	81	-63%	NA	X
335921	Fiber Optic Cable Manufacturing	40	NA	NA	X
325211	Plastics Material and Resin Manufacturing	11	-69%	$60,892	X
334613	Blank Magnetic and Optical Recording Media Manufacturing	0	NA	NA	X
334112	Computer Storage Device Manufacturing	0	NA	NA	X
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	0	NA	NA	X
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing	0	NA	NA	X

Source: BLS, Emsi, Pinellas, County SB Friedman

Microelectronics Businesses



Source: Data Axle, Esri, Forward Pinellas, SB Friedman

Aviation/Aerospace/Defense – *composed of research and manufacturing sectors*

3,822
2021 Jobs

$866M
2020 GRP

$79,843
2021 Avg. Wages

1.64
Location Quotient

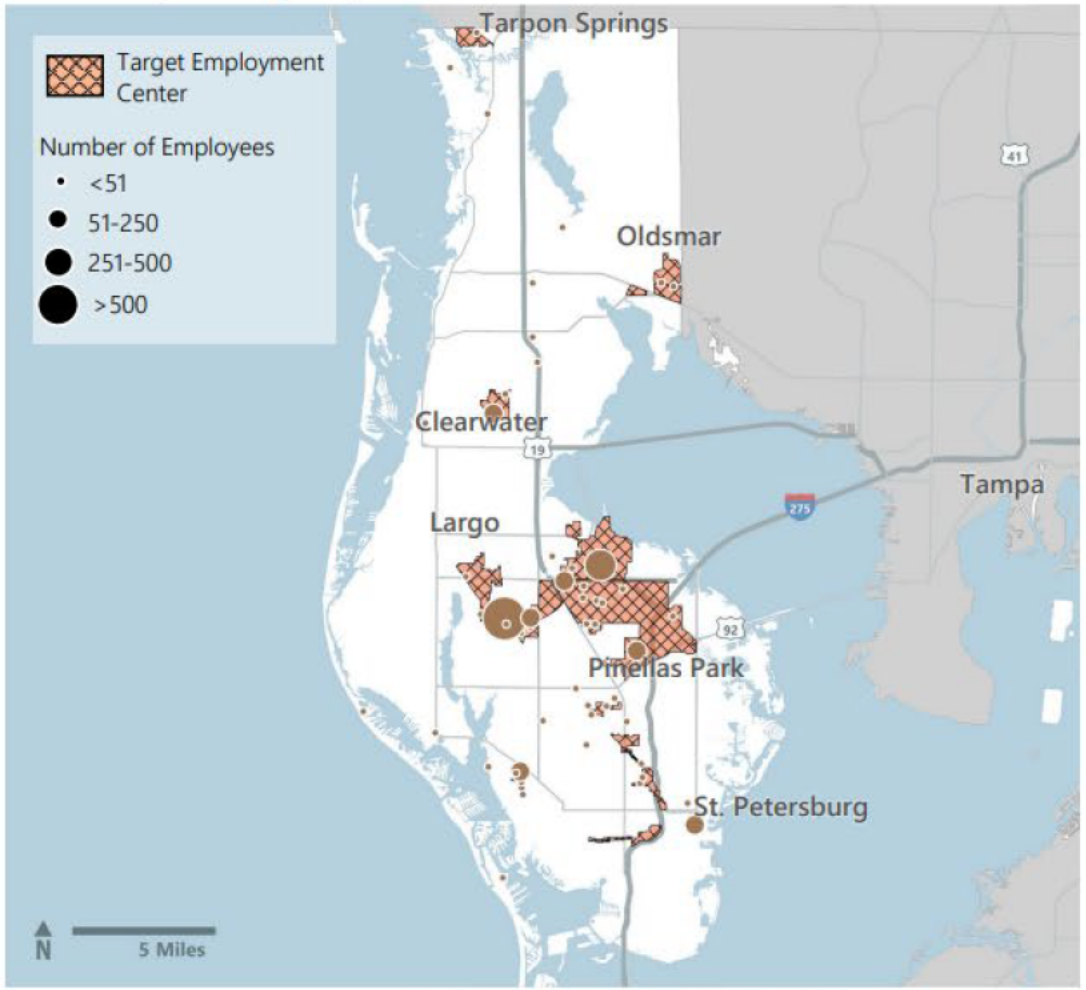
100-2,500
Square feet per employee

Sectors

Aviation/Aerospace/Defense					
NAICS	Name of Sector	2021 Jobs	2012-21 Job Growth	Avg Wages	PCED
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	2,446	-5%	$84,708	X
336414	Guided Missile and Space Vehicle Manufacturing	428	1,047%	NA	X
335931	Current-Carrying Wiring Device Manufacturing	328	9%	NA	X
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	238	79%	$50,960	X
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	168	-21%	$51,948	X
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing	107	-34%	NA	X
334290	Other Communications Equipment Manufacturing	61	-75%	NA	X
336412	Aircraft Engine and Engine Parts Manufacturing	47	-84%	NA	X
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	0	NA	NA	X
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	0	NA	NA	X
517410	Satellite Telecommunications	0	NA	NA	X
336411	Aircraft Manufacturing	0	NA	NA	X
332993	Ammunition (except Small Arms) Manufacturing	0	NA	NA	X
332994	Small Arms, Ordnance, and Ordnance Accessories Manufacturing	0	NA	$45,032	X
336992	Military Armored Vehicle, Tank, and Tank Component Manuf.	0	NA	NA	X

Source: BLS, Emsi, Pinellas, County SB Friedman

Aviation/Aerospace/Defense Businesses

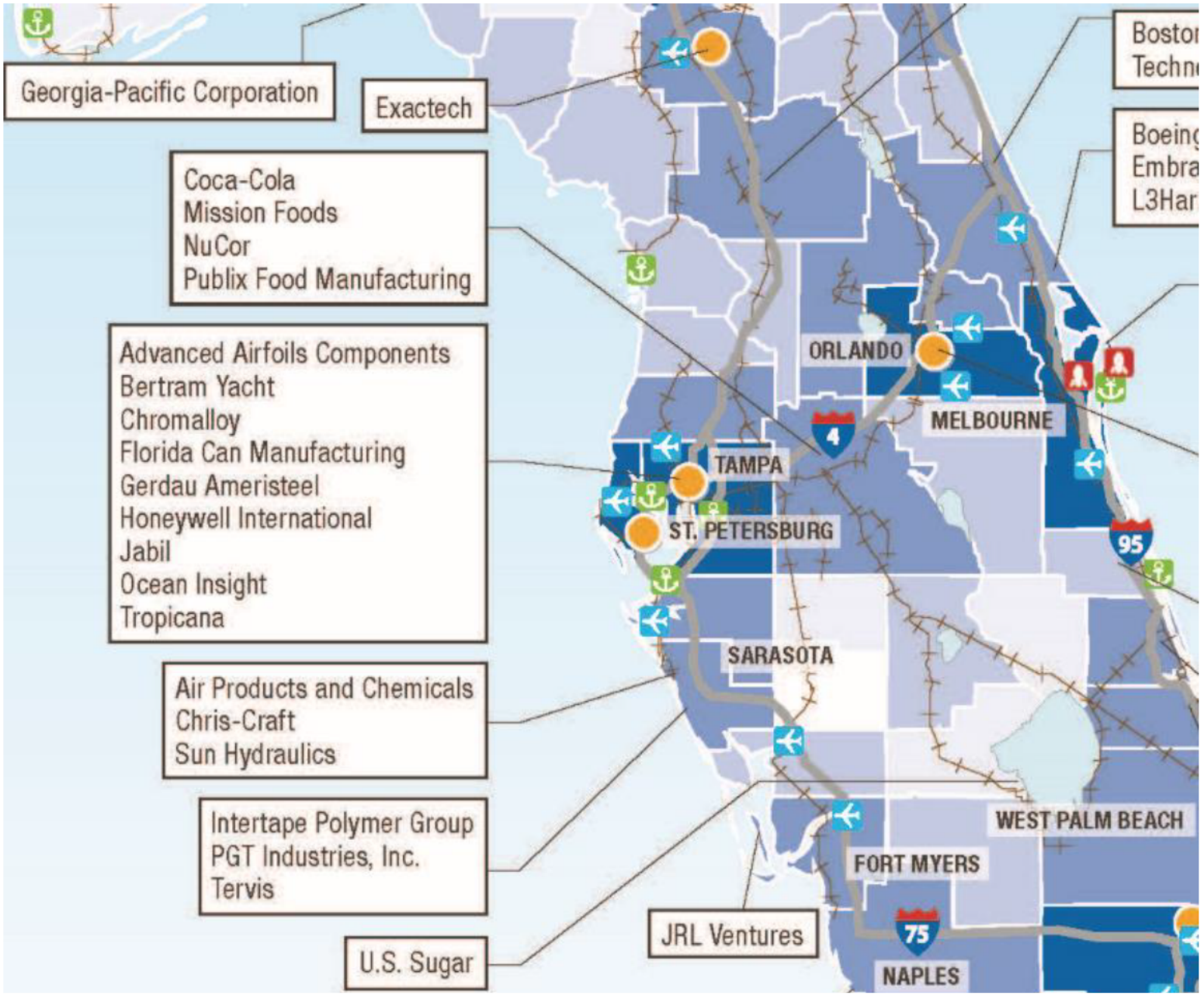


Source: Data Axle, Esri, Forward Pinellas, SB Friedman

SPC St. Petersburg College

FLORIDA'S MANUFACTURING CLUSTERS

As shown in the map below from Enterprise Florida, St. Petersburg College's service area (Pinellas County and the entire Tampa Bay region) has a high concentration of manufacturing companies, and represents a significant portion of the manufacturing industry's contribution to the state's GDP. Pinellas County county ranks **second in the state** for most manufacturing businesses (1,248) and **third in the state** for the most manufacturing employees (37,981) (Pinellas County Economic Development 2023, Florida Advanced Technological Education Center, 2023)

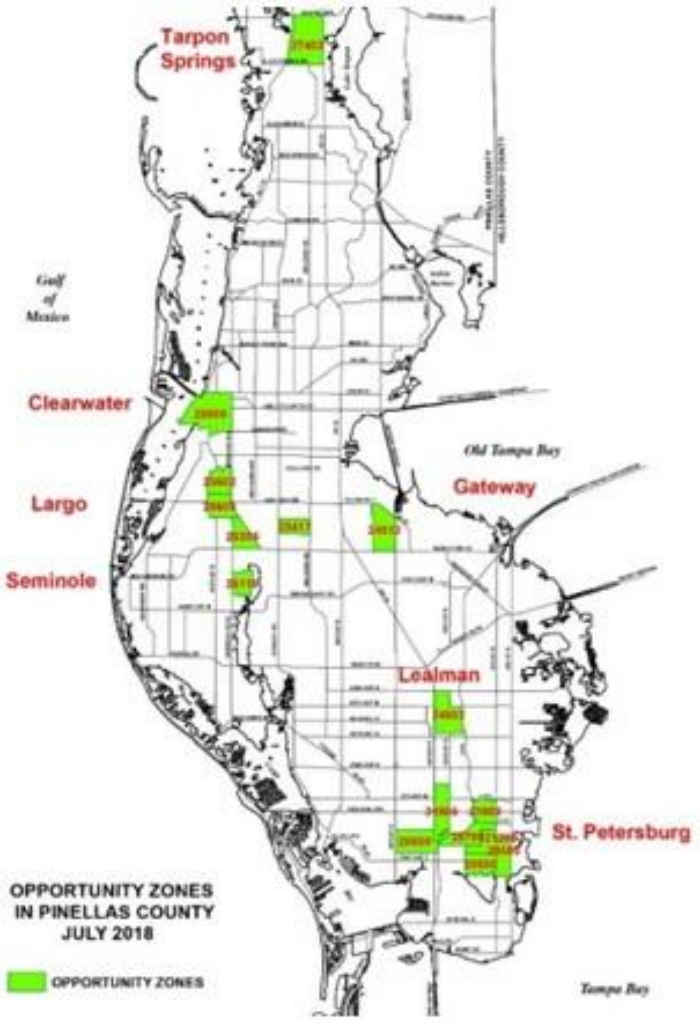


Dark blue areas show areas with more than 25,000 manufacturing employees.

SPC St. Petersburg College

PINELLAS COUNTY OPPORTUNITY ZONES

St. Petersburg College is the primary provider for postsecondary education in Pinellas County, FL, which includes 16 federal designated Opportunity Zones, shown and listed below. SPC's SMART Tech project will provide targeted outreach and recruitment in opportunity zones, with an emphasis on the south St. Petersburg area, to provide economic mobility for training participants.



State	County	Census Tract Number	Tract Type	ACS Data Source
Florida	Pinellas	12103020500	Low-Income Community	2011-2015
Florida	Pinellas	12103020600	Low-Income Community	2011-2015
Florida	Pinellas	12103020800	Low-Income Community	2011-2015
Florida	Pinellas	12103021200	Low-Income Community	2011-2015
Florida	Pinellas	12103021600	Low-Income Community	2011-2015

Florida	Pinellas	12103021900	Low-Income Community	2011-2015
Florida	Pinellas	12103024510	Low-Income Community	2011-2015
Florida	Pinellas	12103024602	Low-Income Community	2011-2015
Florida	Pinellas	12103025115	Low-Income Community	2011-2015
Florida	Pinellas	12103025305	Low-Income Community	2011-2015
Florida	Pinellas	12103025417	Low-Income Community	2011-2015
Florida	Pinellas	12103025602	Low-Income Community	2011-2015
Florida	Pinellas	12103025603	Low-Income Community	2011-2015
Florida	Pinellas	12103025900	Low-Income Community	2011-2015
Florida	Pinellas	12103027402	Low-Income Community	2011-2015
Florida	Pinellas	12103028700	Low-Income Community	2011-2015

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