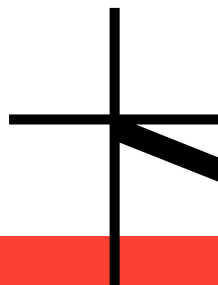




AIA
Florida

2019

STRATEGIC COUNCIL REPORT



AIA Florida Strategic Council

Table of Contents

Financial Economic	1
Staffing and Labor	6
Planning for the Future	9
Workforce/Labor	
State of the Construction Workforce	20
Jobs by Industry	30
Jobs by Occupation	31
Workforce Potential Supply Gap	34
Council Recommendations	46
2019 Strategic Council	48

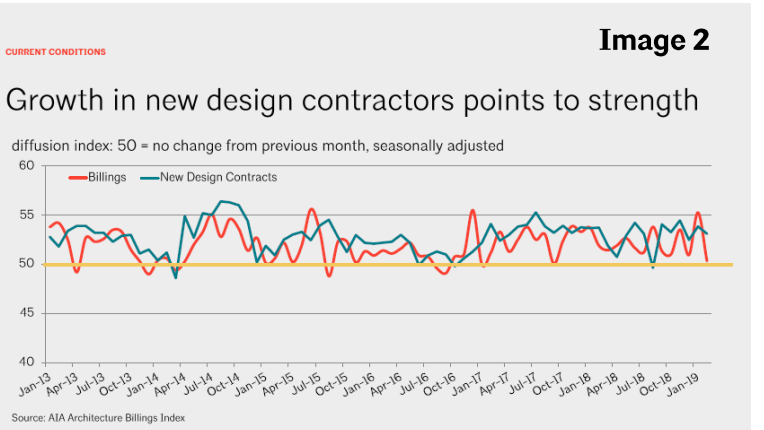
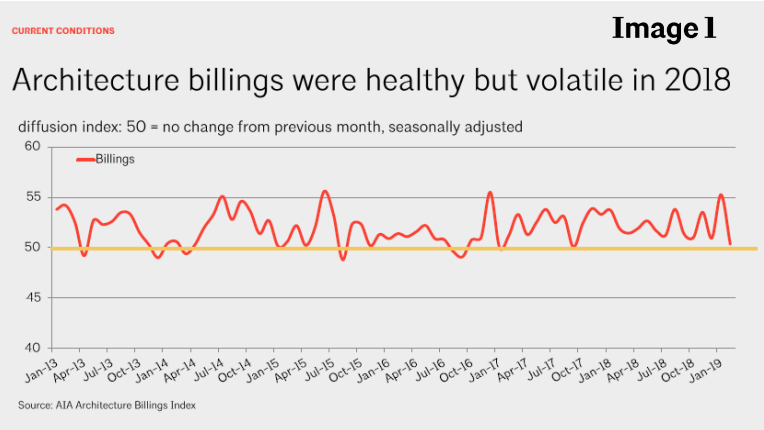


The Strategic Council has researched the immediate past financial environment and the economists near future prognostications and the economy’s impacts on the design and construction industry. In a recent report to the Council, Michele Russo, LEED AP, AIA Managing Director of Research and Practice pronounced the overall economic outlook over the next six to eight months as “pretty good.”

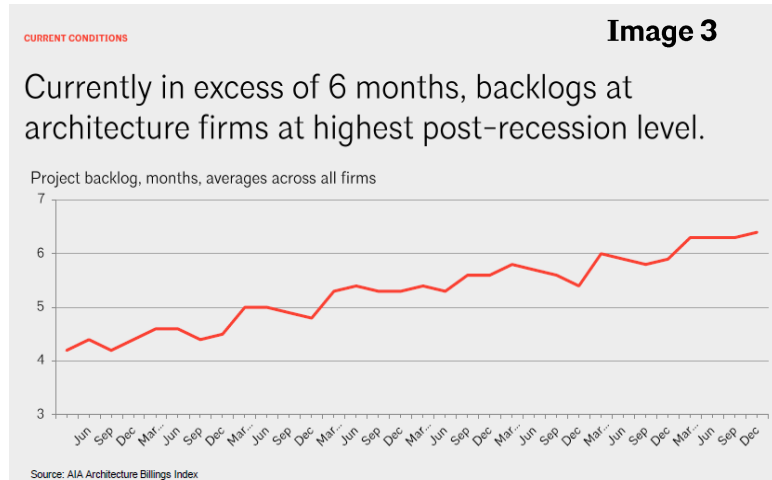
She pointed to stable job growth, wages, interest rates and lower oil prices that continue to buoy consumer and business confidence. Additionally, she noted, since 2018, while the economic picture has been healthy, it has been “volatile.” (See image 1)

According to the ABI which serves as a 9-12-month indicator of future performance, Russo noted growth in new design contractors continue to project strong positions. (See image 2)

And, while new work currently makes up most of architectural firm work, the stockpile of work on existing buildings has remained strong through the recovery with firms reporting a six-month backlog. That diversity of new construction and existing building work help to future-proof firms and may ensure firm health in an upcoming recession. (See image 3)

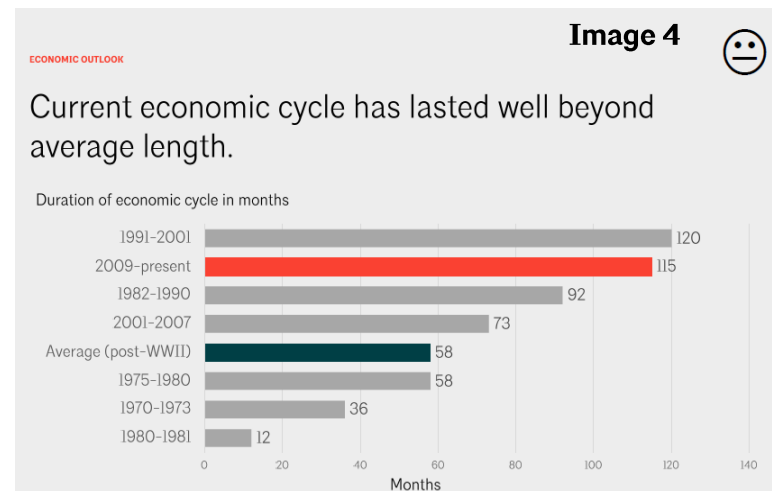


In her pre-session, Long Range Financial Outlook report to the Florida Legislature, Amy Baker, state economist with the Office of Economic and Demographic Research, reiterated the prevailing opinion that the immediate outlook is good but with some expected slowing of economic growth. This, she said, is largely due to national events including fading stimulus from federal tax cuts and spending increase, tariffs (and the threats thereof) and a more restrictive federal reserve policy.



According to both Baker and AIA analysts, the current economic expansion cycle will last beyond any previous recorded recoveries. Baker said, “We have watch metrics to see how close we are to a potential recession. The current expansion will be 10 years old in June. It will be the longest recovery/expansion in history and that tells us to start watching and planning.”

There appears to be little doubt that today’s economic expansion has reached its mature life cycle. In fact, she said, Moody’s Analytics puts the probability of a national recession within the next 12 months at a 20% to 40% range. (See image 4)



Future-Casting

Looking to the next 18 months, economists are reporting mixed messages.

According to a N.Y. Times survey at the Yale CEO Summit, nearly half of the survey respondents expect a recession to strike by the end of 2019. And, 82% of CFOs surveyed in the recent Duke CFO Global Business Outlook expect a

recession by end of 2020. Nearly half of the respondents saw it occurring by the end of 2019.

Statewide, Baker indicated that while construction is a large part of Florida's economy, it has been weak in historical terms. Sales tax collections, she reminded legislators, are Florida's largest economic driver and rely heavily on strong tourism growth. She noted, tourism related revenue losses pose the greatest potential risk to Florida's economic outlook and that tourism demand is sensitive to disease outbreaks and *natural disasters*. And, since Feb 2018 the broad dollar appreciated 11% making it challenging for foreign visitors. The strong dollar has a chilling effect on international travel and will impact tourism income.

While the next six months appear solid, the next 18 months are a mixed message and are trending, according to Russo, "not so hot." As mentioned, the current expansion has lasted well beyond the average life cycle. The group psyche seems to be one of uncertainty and nervousness.

Nationally, downside risks or potential indicators of a negative downturn include:

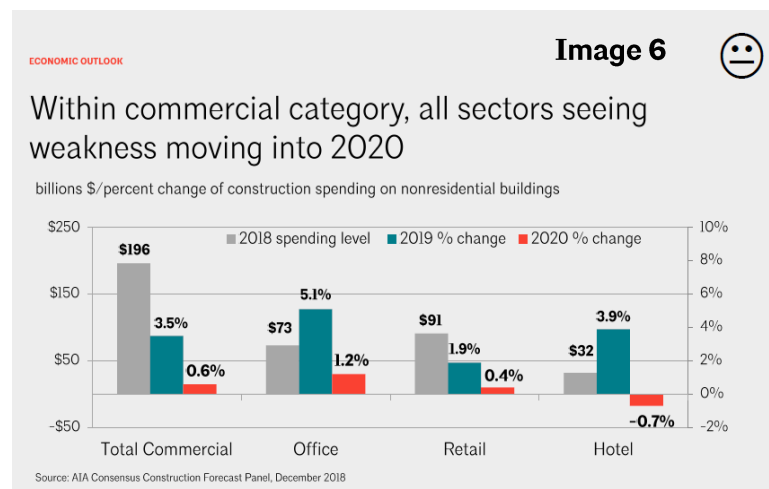
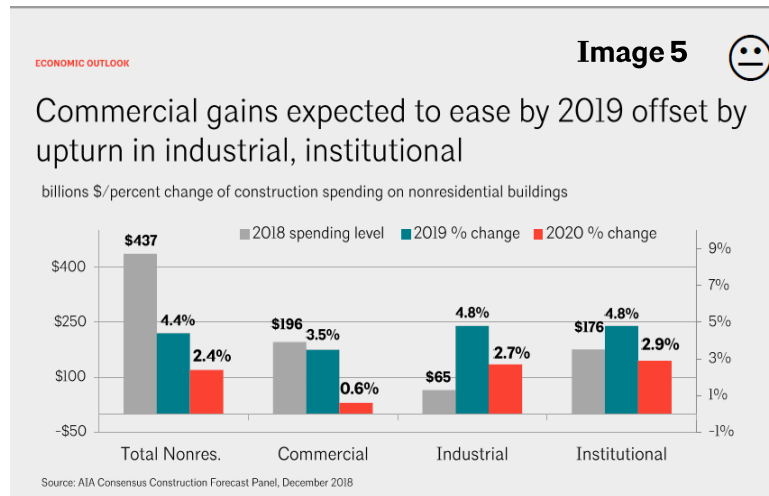
- Government shutdowns that slow growth. Recent studies show little impact to architectural firms, but shutdowns do affect overall economic growth. The use of shutdowns as a political tool create market uncertainty.
- Tariffs/retaliations are hurting the economy. Currently, the U.S. economy has been able to absorb tariff impacts, however S&P and Moodys are keeping a watchful eye on trade restrictions' overall impact on the economy.
- December stock market decline. While short lived, the result was felt in terms of slowing economic growth.
- Housing/auto sectors continue to slow. While still relatively low, interest rates are inching up. Housing foreshadows construction lag. In Florida key residential construction measures are not expected to surpass prior peaks until FY 2026-2027 a significant slowdown from 2018 forecasts.
- Tailwinds from corporate tax cuts quickly subsided. Most corporations bought back their own stocks rather than re-investing. Any boost to the economic stimulus was a blip.
- Business confidence levels have dropped.

Based on consensus: a modulated forecast with some economic increases expected-most which will be felt this year with a downturn next year and resultant 2020 recession mid-to late year. The good news, it is not expected to be as dramatic, in depth and breadth, as compared to the “Great Recession.”

Design and Construction

Architectural firms report expected growth throughout 2019 but at a lower rate. For example, in 2018 they projected 2019 revenue growth at less than 3% as compared to 2017 firm projections of revenue growth in 2018 of 7.3.

In construction, commercial gains enjoyed recently are expected to ease in 2019 offset by an upturn in the industrial and institutional sections. (See image 5) Within the commercial categories, all sectors are seeing weakness moving into 2020. Hotels are slowing – 0.7% change over 2019 figures. Retail at 0.4% as retail tries to figure out the “space” it will take in the future. Bricks and mortar? Virtual? Finally, office is showing an anemic 1.2% change in construction spending year over year. (See image 6)



The outlook for institutional construction is for moderate growth this year and slower growth next. In the health sector there is much uncertainty based on legislative impacts such as ACA. While construction is needed, uncertainty is preventing forward momentum. In education, construction was been “on hold”

and only that which couldn't be held off addressed until 2018. Now even that is slowing. The amusement and recreational sector saw big increases in 2018, single digit growth in 2019 and is expected to be flat to low in 2020. (See image 7)

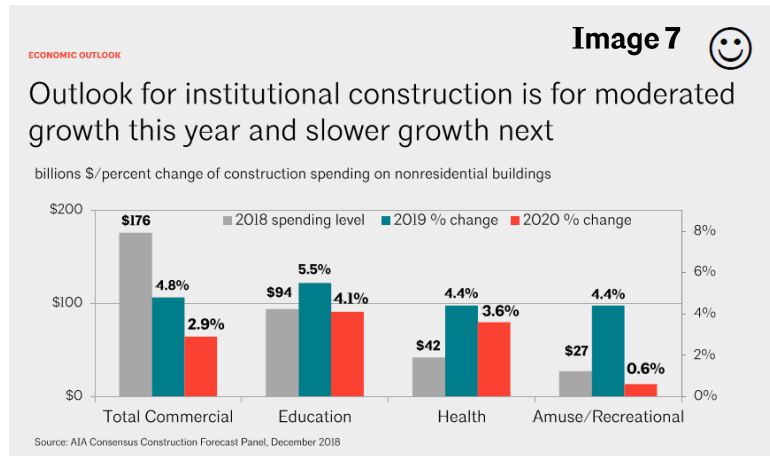
Of course, while there is always the threat of localized recessions, the primary drivers generally responsible for national recessions are:

- Too much consumer spending and credit
- Too much business spending and credit
- Government debt.

Expectations are that too much optimism and borrowing in the private sector will lead to the next recession. However, a

private sector-based recession would generally be expected to be less dramatic in depth and duration as compared to the last consumer spending/credit-based recession. Passing an infrastructure bill in Congress could push back a recession, but congressional discord makes that “no-brainer” legislation a risky bet to take.

Architects, Russo noted, have the ability to predict economic variations. Long considered the “canary in the coal mine”, so goes the profession, so goes the overall economy.





Labor, or shortages thereof, is a huge issue in construction. There are less people doing more work which has forced some efficiencies but clearly, the industry is setup for a disaster. The construction industry is actively working to address the shortages but finding it challenging as the career path is deemed unattractive to potential recruits.



According to an AGC survey, labor shortages are leading to higher bids, longer timelines for project completion and at a higher cost. These impacts are, of course, passed onto owners, passed on to clients and so on. And, consequently architects' work can't move forward

Construction has the second highest dependency on immigrant labor, just behind agriculture. With 27% of the workforce in construction made up of immigrant labor, of which over half are unauthorized, the current debate over immigration will undoubtedly spill over and impact the profession. There is a huge stockpile of work, projects aren't being completed. Architects are enjoying a steady spate of work and infrastructure spending is good but contractors are worried. They have begun targeting gaming and tech savvy populations while increasing their investments in technology and innovation to both increase productivity and make the construction industry more attractive to that demographic.



In firm surveys, staffing profitability and retaining staff are top of concern with larger firms expressing more concern about staffing as related to transition. Transition planning is problematic as skillsets aren't aligned. Firms seem to be rightsized with graduates coming into firms on track to licensure and in raw numbers, firms are staffed appropriately but they report downstream transition concerns. Firms are seeing problems in the distribution of skills and a lack of senior staff who would normally be in line to take over a firm. For example, as a survival strategy during the Great Recession, firms responded by laying off the higher wage earners who, in many cases, left the profession and didn't come back.

Net revenue per employee has increased only slightly as a measure of productivity. According to a survey data, the construction industry is one of the least productive.

Generation Z

The 10,000 baby boomers turning 65 each day and leaving the workforce are being offset by the impending influx of Generation Z, those born between 1995 and 2010. The oldest are about 22 and beginning to enter and disrupt the workspace shared with aging-out boomers and bring wildly different life experience and viewpoints. They promise to be much more disruptive than millennials.

More than ever, employers will face a new set of challenges as this group enters the workforce and brings a slew of attributes never dealt with before. For example, this sector has a 47% obesity rate. Their rate of depression is a three-fold increase over that of millennials. Technology is a thriving addiction (a recently listed and recognized addiction by the American Psychiatric Association) and concomitant sleep deprivation due to screen time are typical.

According to Public Relations Society of America, the Great Recession has taught Generation Z to be independent, and has led to an entrepreneurial desire, after seeing their parents and older siblings struggle in the workforce. Generation Z is generally more risk-averse in certain activities than earlier generations. In 2013, 66% of teenagers (older members of Generation Z) had tried alcohol, down from 82% in 1991. Also, in 2013, 8% of teenagers never or rarely wear a seat belt when riding in a car with someone else, as opposed to 26% in 1991.



Research from the Annie E. Casey Foundation conducted in 2016 found Generation Z youth had lower teen pregnancy rates, less substance abuse, and higher on-time high school graduation rates compared with Millennials. The researchers compared teens from 2008 and 2014 and found a 40% drop in teen pregnancy, a 38% drop in drug and alcohol abuse, and a 28% drop in the percentage of teens who did not graduate on time from high school.

The Economist has described Generation Z as a more educated, well-behaved, stressed and depressed generation in comparison to previous ones

The Z'ers are a mix of pragmatism and idealism. They use social activism to address gun violence and climate change but aren't willing to incur student debt to graduate college. A cross in feelings of entitlement yet knowledge that they will have to work to get through school.



They have been exposed to an unprecedented amount of technology since a young age, in constant contact. Sort of... They've been characterizes as having a 'digital bond to the Internet', and some argue that it may help youth to escape from emotional and mental struggles they face offline. According to U.S. consultants Sparks and Honey in 2014, 41% of Generation Z spend more than three hours per day using computers for purposes other than schoolwork, compared with 22% in 2004.

The use of social media has become integrated into the daily lives of most Gen Z'ers who have access to mobile technology. They use it daily to keep in contact with friends and family, particularly those who they see every day. As a result, the increased use of mobile technology has caused Gen Z'ers to spend more time on their smartphones, and social media and has

caused online relationship development to become a new generational norm as compared to one-on-one personal engagement.

As a result of this digital dependency, they need empathy training and mentoring on how to interact, a skill set never deemed necessary in a formal way to absorb and benefit from knowledge that comes from working with people (rather than e-researched). This tech savvy sect has a “take it and run with it” confidence and fast problem-solving ability as contrasted to the architectural industry with its dependency on relationships. How they learn the new interpersonal skills will be a new challenge for employers.

They do collective problem solving. What does ownership of design mean to them? All employers will be hit by this as this group is apt to share salaries and other typically confidential information-they don't value privacy. How will the new generation join or disrupt this traditionally erudite yet underpaid profession with their pragmatic yet entitled belief set?



June 3, 2019 2019 Strategic Council Leadership Summit, Planning for the Future

Speaker: Ignacio J. Reyes, AIA, NCARB, LEED AP

A June webinar for the Strategic Council focused on, “Planning for the Future” for architectural practices in a rapidly changing environment. Speaker, Ignacio Reyes, AIA did not purport to have all the solutions to the challenges in keeping up with technology, but rather, established a goal to “set the table” for a robust conversation. He based his commentary loosely on the Design Futures Council which has engaged with practitioners and others to bring new understanding of how architecture and engineering, in design terms, might look in the future as technological advances are changing the previously known world.

The BIG questions, according to Reyes, and top-level discussion points include:



Is the practice of architecture going to be obsolete or a necessary power in the future? Practices, he noted, have been built around the ability to delineate the built environment on paper and models, but what happens when technology changes those design delivery processes? Will the practice be a necessary process or made obsolete by technology? What happens when technology changes that world?

Secondly, he said, as design build is changing the practice, contractual models will struggle to keep up with the changes. The future is rapidly changing because of technology and the delivery process now

being employed but contracts aren't adept at predicting or reacting to change, greatly impacting this risk averse profession.



Legal Issues

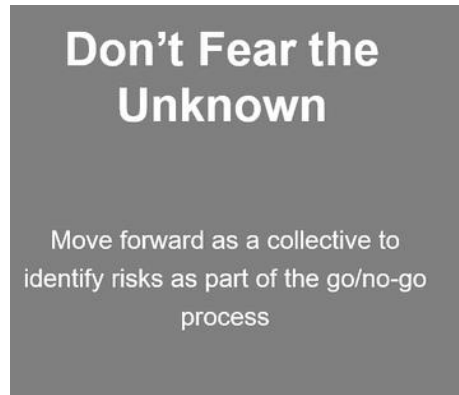
Alternative Delivery-Design Build/IPD



It is imperative for firms to proactively acknowledge, understand and embrace risk even while identifying how to get around that risk—they should make risk a word that is “OK to use.” Architects have notoriously walked away from risk and have often pushed or

allowed dominion over decisions to others in order to reassign risk—which has led to architects no longer having project control. Design build is a growing phenomenon in the public and private arenas. And, while it is viewed by some as a faster way of delivery; it seems to diminish the vision of quality of the product as the focus narrows to speed and cost with little room for good results and longevity.

There are definite problems with design build, and design professionals need to accept and mitigate those problems. To do so, savvy firms are attempting to define the unknown. They embrace the idea of creating design/build leadership teams that have open communications, share ideas in terms of the actual product, due process and mutual understanding that risk is involved on both sides that must be dealt with transparently and equitably.



Limitation of Risk

In the alternative delivery methodology, design/build is embedded in the process and as a byproduct, architects are accepting liability for things over which they have no control. The builder-client can alter or direct certain aspects of architects' design based on their role as “client.” As discussed at the Design Future's Council in New York, architects need to have certain protections in place. One example is limitations of liability negotiations. While still novel, an architect *can* limit his or her liability through negotiations, and the obvious reason to do so in this example is that the architect has lost direct control of the outcome.

Even in the architect's design process, builders and the design build participants in an integrated project delivery format tend to control far more than they should. In Reyes' firm, he says, “We are going to require certain things to happen to create a real partnership. If we are not going to be a 50/50 partnership with the builder or have contractual control, then there is going to be a limitation to our liability since, in effect, the client is in control of the outcome.” Negotiating risk has been done successfully in

his firm with construction companies around the country but is not something he sees happening in most other architectural firms. Consequently, he notes, architectural firms are taking on unnecessary risk while not in complete control of the project.

That's where the concept of a *Risk Register* comes into play. Identifying issues upfront, ferreting out possible negative impacts to a project, finding mitigation strategies while being careful of disclaimer of quantities and awareness of technologies that allow clients to interface with the design/project decisions and management. Architects must get smarter about that and make sure to develop a disclaimer in contractual language inside of a design build arena so that clients taking on the responsibility also take on the risk.

Reyes' firm, which does federal projects and design build, identifies what it considers to be risk events by virtue of both cause and effect; then it looks at strategies to work through them. "Risk is neither good nor bad. Risk is just risk," according to Reyes. Firms must decide their own risk tolerance.

Develop a Risk Register

Specifically for "Alternative Delivery" projects, a Risk Register developed by the design team during the pursuit, allows the studio to understand the measures of risk and make informed decisions

Risk Register Example

FL Jackson SC
 Repair/Renewal Floors - Ground, 6th, 11th, and 12th Bldg 4500
 This document contains sensitive. To properly view, go to Edit Workbook

Risk Management Branch Risk Register
 DB Task Order with GLEBANE Builders

Reyes

RISK EVENT	RISK IDENTIFICATION			INITIAL RISK RATING				Objective of the risk assessment			MITIGATIONS MANAGEMENT				
	RISK CAUSE	IMPACT/ CONSEQUENCE	EXISTING MITIGATIONS	L (1-5)	C (1-5)	SUM	RISK RATING	ADEQUACY OF EXISTING MITIGATIONS	ACTION	ADDITIONAL MITIGATIONS	DELIVERABLE	REQUIRED RESOURCES	TASK OWNER	DUE DATE	DEPENDENCIES/ INTER-RELATIONSHIPS
What is it that you are seeking to avoid or reduce the likelihood or impact of occurring? Risks are future events that could interfere with achievement of objectives.	What are the triggers, sources or circumstances that could set this Risk Event in motion or increase the likelihood of the Risk Event?	If this Risk Event did occur, how would it impact objectives? What are the longer-term or cumulative consequences?	What are you doing now to reduce the likelihood or impact of the event?	How likely?	How serious?			Non-existent, Inadequate, Adequate, Robust, Excessive	Will you treat, monitor, transfer or avoid the risk?	What else are you going to do to better manage the risk?	What form will this mitigation take - e.g. a project plan, a report, Treasury Board submission, other?	What is needed to develop and implement the mitigation?	Who will take the lead on this mitigation?	When is the deliverable to be ready?	Does the event or mitigation rely on another team or organization? Does it impact another group?

International Practice

There is a lot of excitement in Florida about international practice and a lot of work being done in the Caribbean, South America, Europe and Asia. Reyes shared things to look at before making the decision to partake in international practice. He explained the need to understand cashflow process, taxes, required retainers and limiting damages. He shares the 10 Commandments his firm applies to any international practice decision making.

International Practice

Political Factors and Passions are the conflict

Apply greater scrutiny to business issues and political stability

List of 10 Commandments

1. Proposal Fees/Contracts in US Dollars to avoid foreign currency where possible as it can get devalued, clients eliminate last payment, cost of the dollar
2. No non-US taxes
3. Retainer required
4. Retainer amount 20%
5. Retainer collected before starting
6. Retainer credited against final bill
7. Monthly progress billing
8. Reduce or remove tender/Bid bonds
9. Remove or shift liability for performance bonds
10. Remove or Cap Liquidated Damages-No more than 2% of total fee

Architects who work outside of Florida have been burned in the international arena when, for example, money gets de-valued or payments are transacted in different banks impacting the exchange. In some cultures, it is common practice for the clientele to simply eliminate the last payment; practices that are atypical and could be a nasty surprise to the uninitiated. International Practices, while very seductive, should only be entered after putting passion aside and looking at the reality of what the international contractual issues include.

Exploring Technology

Exploring Technology **Exponential Thinking**

Now – Challenge is **linear** thinking of tools and processes

- Everyone wants to be the next “Uber” but most aren’t really sure how...

Explore – **Creative Crossings** with Digital Practice Leadership

- New Urban context – repurposed space without vehicles
- Material evolution
- Blending of AEC roles

Exponential Thinking

Technology is happening at exponential rates. At every gathering of architects, conversation turns to digital practice and, this conversation needs to be advanced more rapidly and formally than is organically occurring. The hard part to overcome, according to Reyes, the thinking to date has been linear, which is traditional in

architectural practices; always questioning, what’s the next step, then the next. Architects and firms should be exploring different kinds of crossings with other people in the design realm in terms of digital practice leadership.

Rather than a micro approach to becoming the next “Uber” architects should fundamentally examine their role in creating the next real urban context for repurposed space. They should be leading the discussions about how architecture is going to move forward, in this environment, to reimagine a city without cars or a program that does not deal with vehicular issues. Architects should be ready to jump to the forefront of land planning and urban planning to take this on. “Do we have the tools and mindset to be a leader in that conversation or will we just watch the changes as they happen,” he wondered. Technology changes and advanced computing are setting the stage for a blending of roles of the traditional architect, land planner and engineer. “Technology will ‘decide’ things for us.”

What is the architect’s role in vision and policy for the future? Professional development can help provide architects with valuable digital skills such as mapping with Geographic Information Systems (GIS) – leveraging data to shape decision making and allowing architects to engage in local planning.

Exploring Modeling/Project Delivery

Delivery in architecture is critical. Firms are considering or have already begun hiring gamers and videographers for a different kind of design process. Today, firms report they are hiring graduates *who cannot draw*. Shocking perhaps, but a reality in a time in which people have grown up in the digital world and are graduating with a 3-dimensional mindset. Some large firms are now hiring more people that know gaming interfaces than architecture--a sure sign the profession is altering itself.

Exploring Technology Modeling / Project Delivery

Now – VR/AR - Model Based Understanding

- Use **gamer interface**
- Design engagement / checks
- Continue growth usage ideas

Future – Model Based Delivery

- Overcome regulatory / legal obstacles
- Heightened efficiencies with advancements in understanding raw material quantities

While most believe in a future with model-based activities, perhaps that future modeling will be in the form of holograms or other not yet conceived modalities in which clients can easily interact. The efficiencies that are coming are shocking. CDs might go away, and construction documentation is going to be altered dramatically. Many firms and architects receive the bulk of fees in the CD phase created by less expensive labor and higher profitability.

What happens when there is no

longer a CD phase? Firms should be considering how to replace that portion of the profit stream. There is still a design, the architect is still leading a concept visually, programming, creating artistry and setting the pace. With the press of a button, the

design might be implemented. That implementation process becomes a real key element in the future.

Engineering, codes and zoning may be automated based on location and latest codes and web-based data. Once integrated via technology, the practice shifts to a different mindset. One that includes a business mindset to take on the new world to not just survive but thrive.

Advanced Programming Interface.

Big data collection and programming is happening in firms to inform design on final outcomes. Generally, step one is information gathering from which to create an actual program. That step that is going to become more data-specific based on benchmarked information from the past, as well as informed data from the present. In the very near future, “wearables,” that clients put on will track their movements and transmit data from implanted sensors that will inform building programs. Programming processes will be altered by technology that is being employed, such as fit bits and phones, in the everyday world gathering billions of data points to be used in design process.

Exploring Technology Advanced Programming Interface

Now – multi-users – focused on the model experience, but **limits on sharing**

Exploring – the **data points of all aspects** of the built environment

- Material usage
- Wearables / human interfaces
- Management integration / component replacement
- Integrated evidence based design

Editors of the program

Exploring Technology Leading through Editing

Future – We will be **editors of the program** – assimilating data, setting the path and editing the outcomes

Exploring – What is the future of Construction Documents?

- How do we convey construction objectives?
- How do we provide artistic direction to the program?

In the future, architects may well become editors of a design generated by a program. The future of the business/practice will be based on the data points provided by technology. We will be able to generate algorithms to create hundreds of design solutions to problems. Architects will become the editor of those potential solutions. The architect’s vision will be the front end, assimilating the data, setting the path and editing the outcomes.

The hard part, Reyes contends, is that technology levels the playing fields so much, architects must maintain their strength and ability to keep their value and maintain their value proposition to the community of protecting the health, safety, welfare. The computer understands these things as well as building codes. Architects will edit that data to say “no” to simplified logical and efficient technologic design to maintain their value through human intervention that enriches the human experience.

Methodology

Construction Methods

We are seeing more and more 3D printing in actual construction. USC and UCLA are actively experimenting and pushing the envelope. There are all kind of things being explored. How do our construction documents change if the construction methodology changes? What if we are not

laying out block course work anymore? How do we alter how we design documentation if a 3D printer can do something dramatically different? If it is solid poured concrete, how is reinforcing accomplished? We must figure that out. Is it carbon reinforced? All this goes into play. We must jump forward and understand, to own it, so we can control it.

Exploring Technology Construction Methods

Now – High efficiency and high innovation with existing materials

Exploring – **Alternative use of materials** altering our thinking of “how”

- Integrated component **3D printing** for structures

Exploring Technology Construction Methods

Pre-Manufactured Assemblies

Expect complex component parts to be pre-assembled and brought to the field.

- Integrated IoT
- Laser scanning for connection points

The same is true with pre-manufactured assemblies. Pre-manufactured assemblies for buildings off site, reduce labor, reduce errors and make construction more efficient. According to a recent ULI recently stated the construction industry is the least efficient process as a business and has not evolved much since the 1920s. It is about to take a leap forward. If pre-manufactured

complete components, like a head wall in hospitals and even whole hospital suites can be brought as complete components to a field and build a building like Lego blocks, maintaining humidity issues, control of mold, other elemental problems, that is going to change the way architects design. Our documentation will be completely different.

Material Evolution

Material itself is evolving such as that created by Terraform One, a non-profit company in New York. It develops biologic materials with high yields and strength yields with renewability. They have even developed a cricket structure in where crickets are used to create proteins that help create their structures. Certain parts of their buildings are

edible. Farfetched and out there, but at the same time, these ideas become the new realities. Reyes related hearing about a material called graphene, an experimental material that when added to drywall could provide electrical charging capacity, possibly eliminating plugs in the future. These are the things people are tackling right now that could dramatically alter views on sustainability, renewable energy, even buildings themselves and create new freedoms for design processes. Material evolution and material process is just as dramatic as the technology of the practice.

Repurposing and Reimaging

Reimaging Uses Through Design

Develop Imaginative ways to breathe new life into existing urban buildings

Think Labs based on Sector Economics

Exploring Technology **Material Evolution**

Now – Biological materials with High Yields and high Renewability

Biophilic Material Development

- Cricket Proteins for Structure – Edible walls
- Terraform Design

Architects still have a purpose and the design field can still look at things in ways that are not normal.

Architects provide extraordinary value in re-purposing and reimagining existing buildings. Reyes believes there will be a continued and increasing trend in repurposing buildings versus building brand new inventory. Corporations going in and out of business and densification are opportunities to breathe new life into the urban core.

One such repurposed building Reyes shared was an old, abandoned outpatient VA clinic building. Though

the building was dilapidated, the design team performed an analysis of what *could* be done. With hand sketches the architects used their artistry to reimagine buildings in ways that a computer can't because a computer cannot "rethink" things that already exist. Architects created a therapy center for homeless veterans to reimagine their lives and provides temporary housing, detoxification, educational and vocational training. This is taking a structure that was abandoned and giving it purpose that wouldn't, on the face of it, be logical. That, Reyes maintains, is the difference between logic and artistry.

Reimagined Veterans Therapy

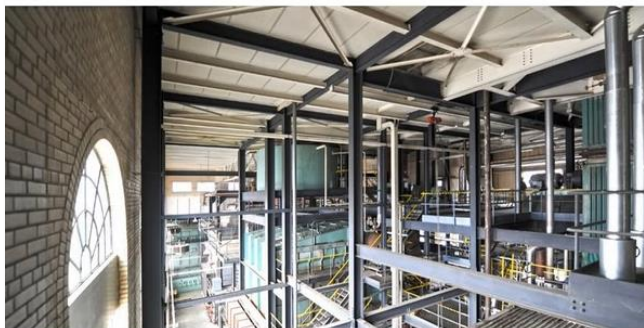
B209 West LA VA Campus
Therapeutic Housing
Los Angeles, California



Another example shared was of an abandoned power plant. A historic building sitting idle that was reimagined what as a new workplace for that electric company's headquarters. This is the value of architecture. Reimagining, revising space, the ability in artistry to transform a location.

Reimagined Power Plant

Reimagined a historic and decommissioned power plant into a vibrant new workplace for the Owatonna corporate headquarters



Owatonna Public Utilities
Corporate Headquarters
Owatonna, Minnesota

Lastly, he shared a project that was an abandoned mid-century train station which was recreated into a new television studio with community service engagement. There are ways the architect can have a powerful role in reimagining that technology can't.

Reimagined Train Station



Investing in Humanity

Building Leaders

Defining a leadership culture

Develop interdisciplinary leadership training programs

Technology can silence individuals. Leadership development programs and getting people together in training programs are necessary to create a firm culture for the future and a culture of teammates that can tackle the advances and detriment of technology.

Communication Skills

As technology jumps forward and becomes bigger, architects have to create new ways and know how to tell their stories. Technology gives efficiency gives cost effective simple layouts but artistry allows the architect to tell his story. Young architects and emerging professionals are displaying an inability to communicate and engage. Firms should invest heavily in communication skills, empathy training, personality type recognition and body language training because all the technology in the world won't compensate for the fact that human beings are still the decision makers.

At the end of the day, the question is, will the architect become obsolete or a necessity?

The graphic consists of three main elements. On the left, a grey rectangular box contains the text "Looking forward" in white. To the right of this box is a photograph of a long, straight asphalt road with a dashed white center line, stretching into the distance towards a range of blue mountains under a blue sky with scattered white clouds. To the right of the photograph is a white line-art icon of a signpost with two directional arrows. Below the signpost icon, the text "Obsolete or Necessary" is written in a bold, sans-serif font. A short red horizontal line is positioned below this text. At the bottom of the graphic, the question "How do we transition old practices and process for the new world of architecture?" is written in a smaller, regular font.

How do practices and processes transition from the old to the new world of architecture? Architects need to jump forward with ideas and think of how technology is going to advance and not destroy the cause.

Architects must realize their role is in the design world, how to work with design build, mitigate risk and control it, to avoid victimization in that world. As it grows leaps and bounds, architects must understand their value in repurposing and reimagining architecture via the power of artistry and how important that value is to the future.

State of the Construction Workforce – Florida, 2019

July 19, 2019

Table of Contents

- 2 | Welcome**
- 3 | Current Construction Workforce Statistics**
- 4 | 2018-2026 Occupational Forecast**
- 5 | Florida Job Growth by Number of Jobs**
- 6 | Florida Job Growth by Percent of Growth**
- 7 | Workforce Supply Gap**
- 8 | US Construction Employment Growth Over a 12 Month Period**
- 9 | Percent of Builders Reporting Labor Shortages**

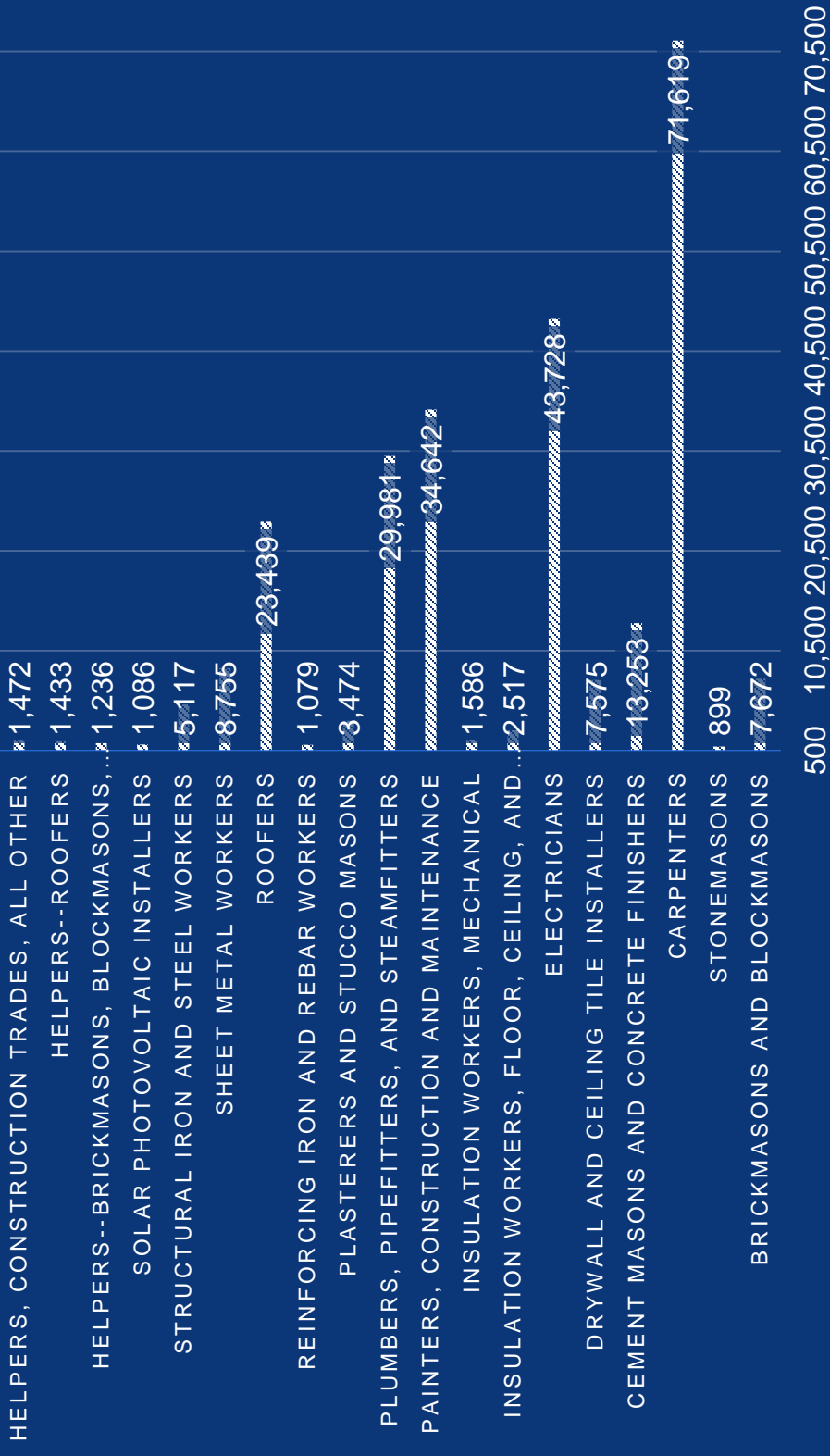
Page 21



Current Construction Workforce

- The graph to the right shows the current construction workforce in Florida in 2018

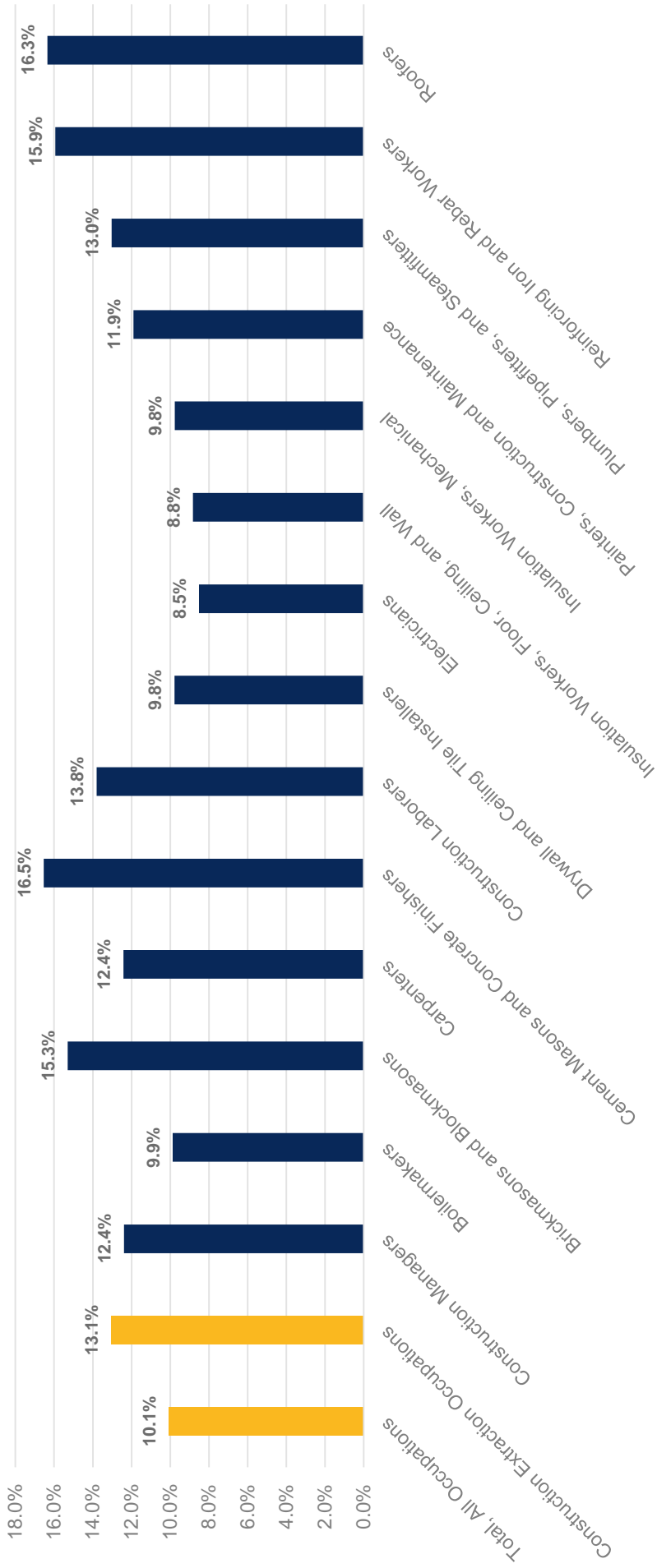
CURRENT FLORIDA EMPLOYMENT - CONSTRUCTION



Florida Department of Economic Opportunity, Bureau of Labor Statistics



Projected Increase in Construction Employment, by Occupation 2018-2026

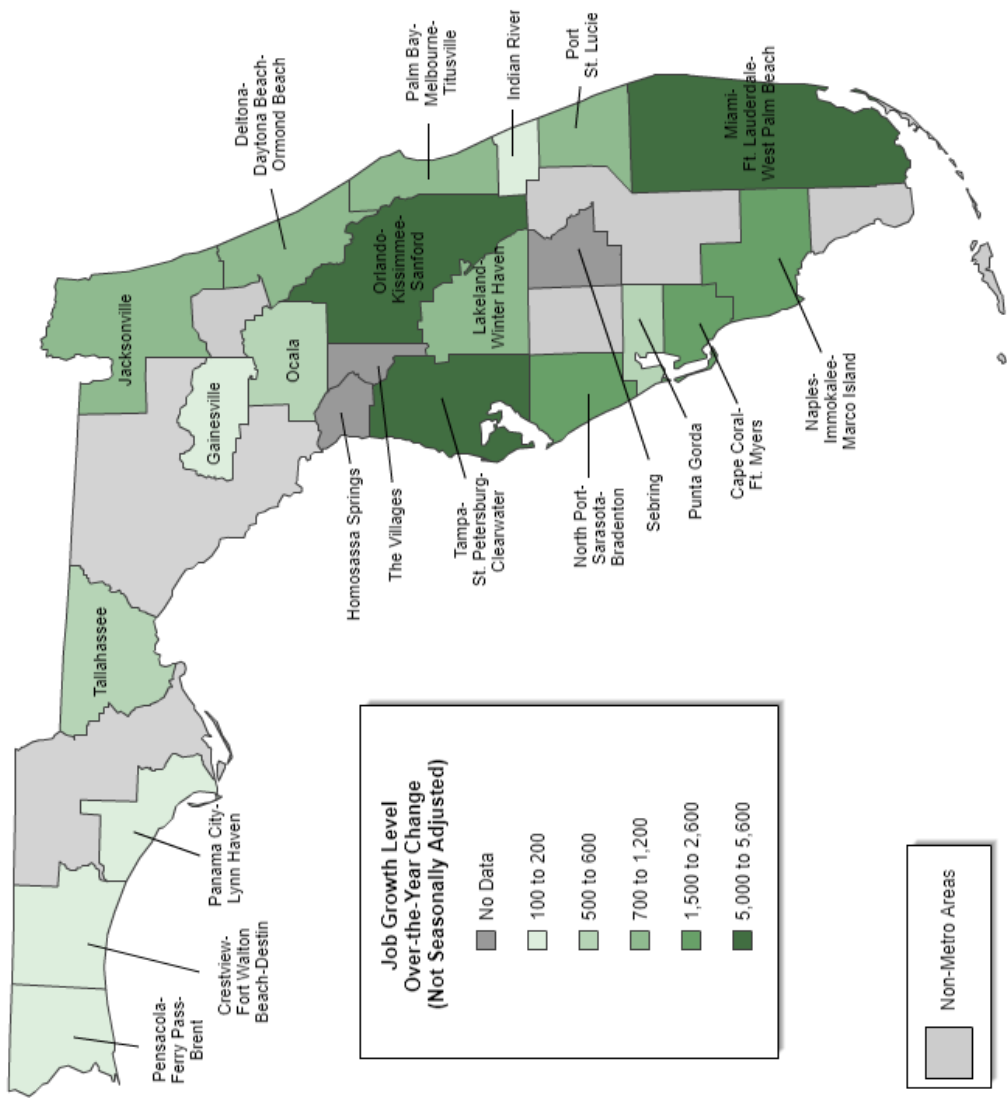


Source: Florida Department of Economic Opportunity and Bureau of Labor Statistics



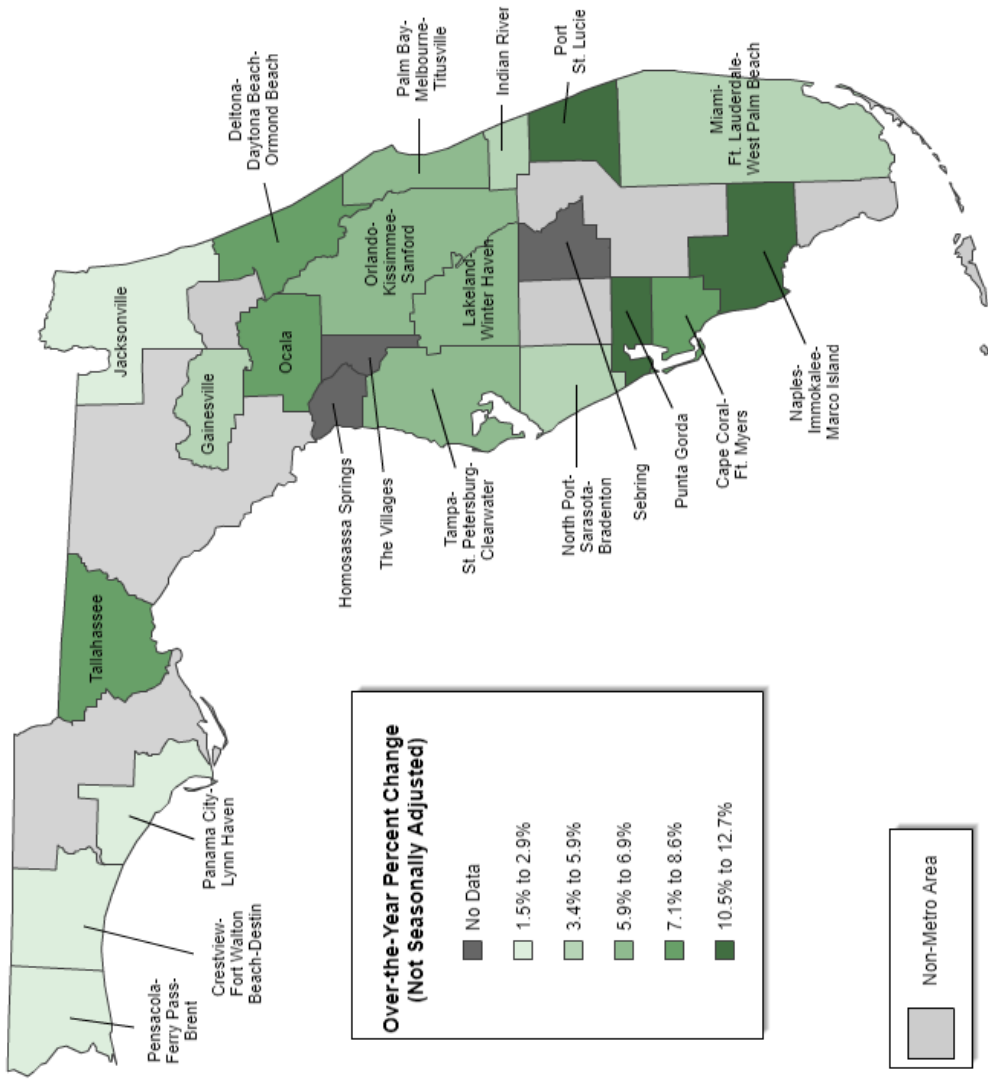
Florida Job Growth – Construction Trades – Number of Jobs

- The map to the right indicates the number of **new jobs** over-the-year in construction trades for metro areas in Florida for June 2019



Florida Job Growth – Construction Trades – Rate of Growth

- The map to the right shows the percentage of job change over-the-year in construction trades for metro areas in Florida for June 2019



Workforce Potential Supply Gap Florida Statewide – January 2019

Occupation Title	2018-2026 Total Openings	2018-2026 Average Annual Openings	Total Enrolled in Training	Total Supply
High Potential Supply Gaps				
Structural Iron and Steel Workers	5,493	687	97	0
Carpenters	63,636	7,955	430	67
First-Line Supervisors of Construction Trades and Extraction Workers	50,202	6,275	142	62
Plumbers, Pipefitters, and Steamfitters	30,261	3,783	2,291	101
Moderate Potential Supply Gaps				
Electricians	43,536	5,442	7,283	1,044
Solar Photovoltaic Installers	1,878	235	101	51

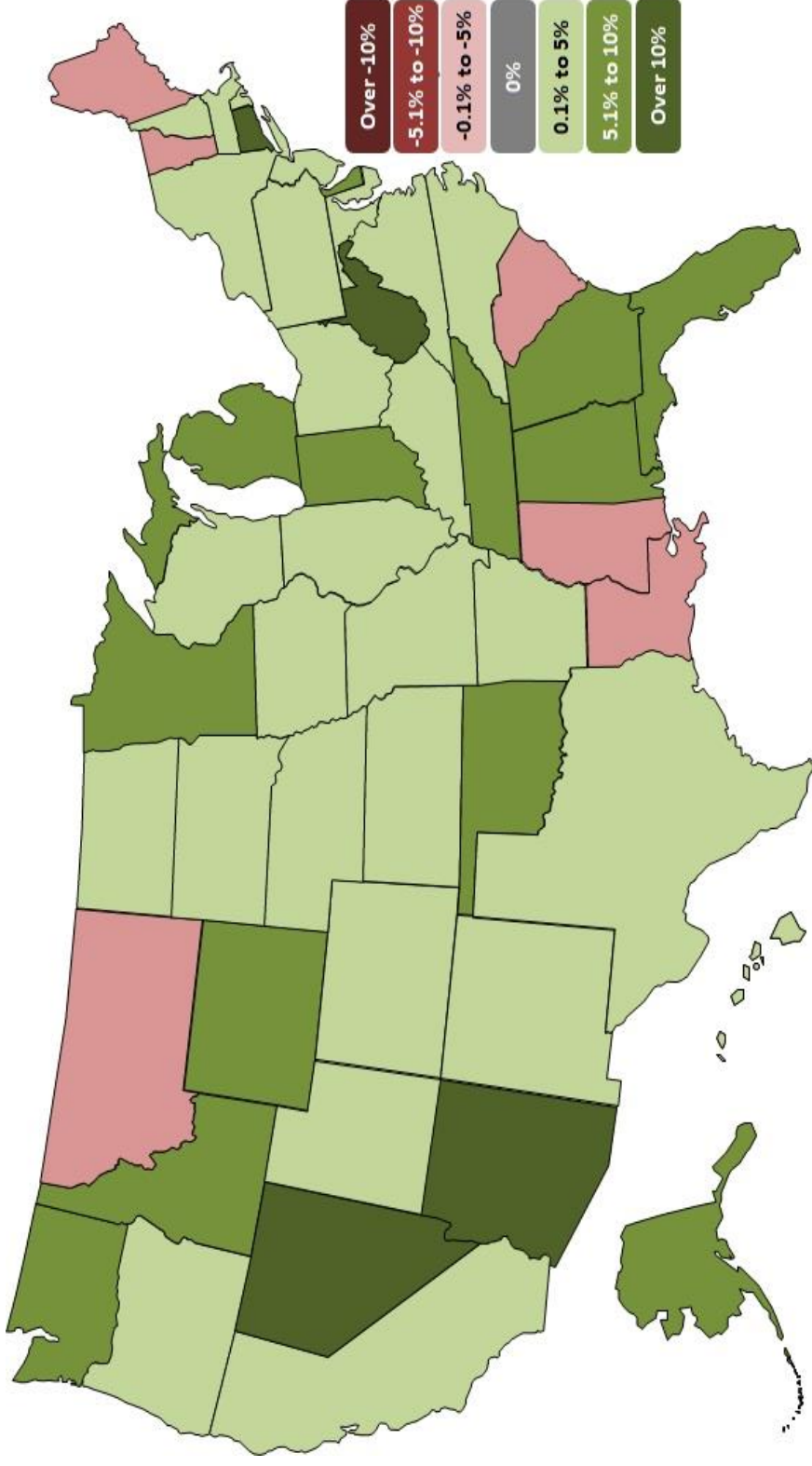
Enrollment and supply gap data are based on enrollment in workforce training enrollments and completion tabulations

Sources: FL Department of Economic Opportunity (DEO); Bureau of Workforce Statistics and Economic Research; FL Department of Education; FL State University System; FL Commission of Independent Education.



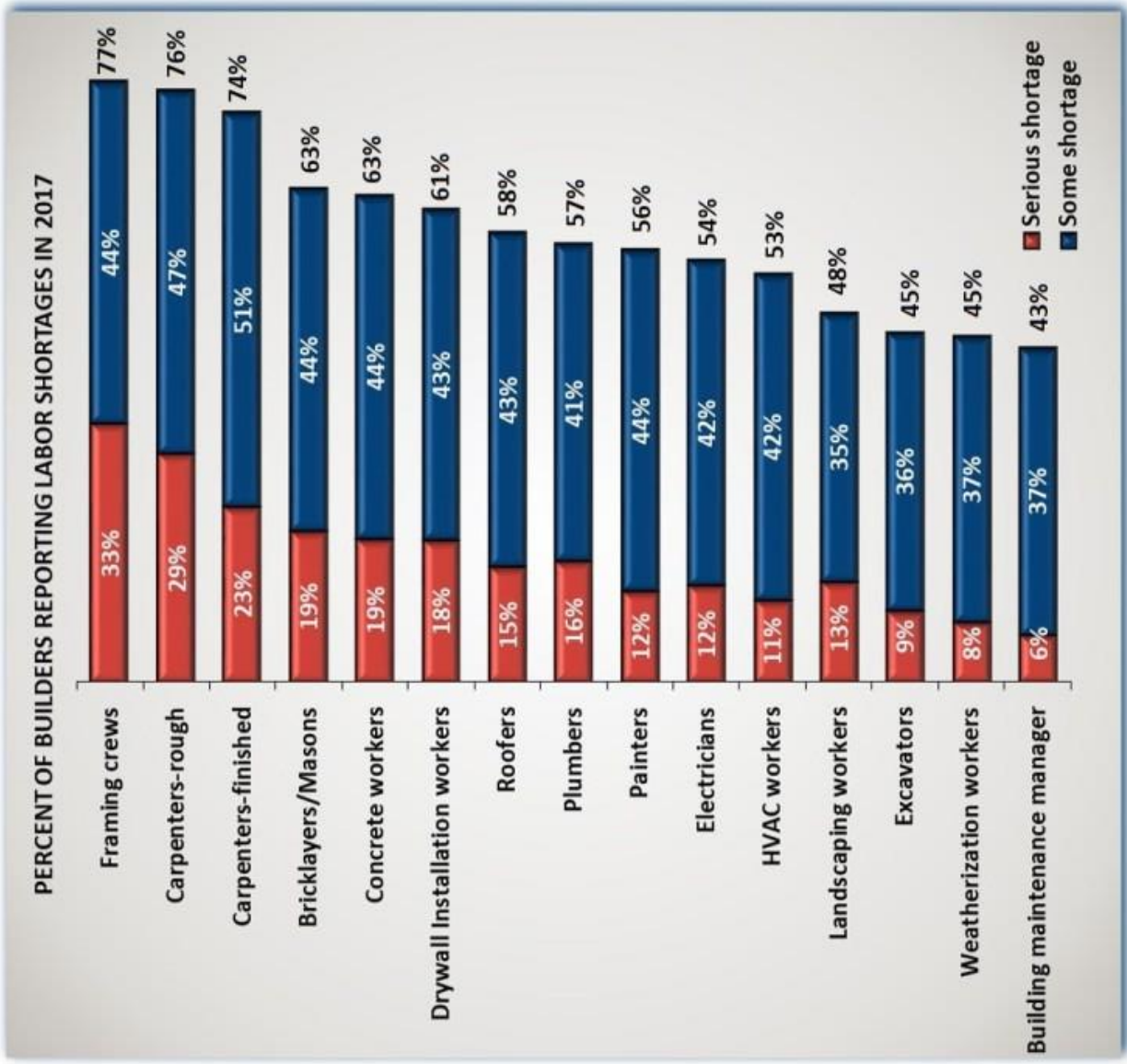
US Construction Employment – 12 Month Change (January 2019)

Florida's construction workforce has increased by 5.1 to 10 percent between January 2018 and January 2019



Percent of Builders Reporting Labor Shortages

- A 2017 survey by NAHB/Wells Fargo Housing Market Survey in 2017 showed labor shortages in construction occupations continues to increase nationwide.





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**JOBS BY INDUSTRY
FLORIDA
CONSTRUCTION**

NAICS Code	NAICS Title	Employment			Percent Growth
		2018	2026	Growth	
Total All Industries					
		9,523,195	10,482,418	959,223	10.1
Construction					
23	Construction of Buildings	540,209	609,239	69,030	12.8
236	Construction of Buildings	109,740	123,423	13,683	12.5
237	Heavy and Civil Engineering Construction	68,771	74,098	5,327	7.8
238	Specialty Trade Contractors	361,698	411,718	50,020	13.8

JOBS BY OCCUPATION FLORIDA CONSTRUCTION

SOC Code	SOC Title	Employment				Education			
		2018	2026	Growth	Percent Growth	Total Job Openings	2017 Median Hourly Wage (\$)*	FL†	BLS†
00-0000	Total, All Occupations	9,523,195	#####	959,223	10.1	9,859,319	16.07	-	-
47-0000	Construction and Extraction Occupations								
47-1000	Supervisors of Construction and Extraction Workers	501,695	567,149	65,454	13.1	492,120	17.47	-	-
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	53,021	60,170	7,149	13.5	50,202	-	-	-
47-2000	Construction Trades Workers	391,458	442,457	50,999	13.0	377,067	27.67	A	HS
47-2011	Boilermakers	821	902	81	9.9	746	30.49	PS	HS
47-2021	Brickmasons and Blockmasons	7,672	8,846	1,174	15.3	6,747	17.37	PS	HS
47-2022	Stonemasons	899	1,035	136	15.1	789	20.53	PS	HS
47-2031	Carpenters	71,619	8,893	8,893	12.4	63,636	18.15	PS	HS
47-2041	Carpet Installers	1,686	1,954	268	15.9	1,485	13.44	PS	NR
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	1,440	1,680	240	16.7	1,282	16.28	HS	NR
47-2044	Tile and Marble Setters	8,772	10,296	1,524	17.4	7,896	15.88	PS	NR
47-2051	Cement Masons and Concrete Finishers	13,253	15,444	2,191	16.5	14,347	17.10	PS	NR
47-2053	Terrazzo Workers and Finishers	388	465	77	19.9	439	20.17	PS	HS
47-2061	Construction Laborers	88,791	101,052	12,261	13.8	88,806	13.78	NR	NR
47-2071	Paving, Surfacing, and Tamping Equipment Operators	3,471	3,893	422	12.2	3,401	15.36	HS	HS
47-2072	Pile-Driver Operators	300	336	36	12.0	311	21.82	PS	HS
47-2073	Operating Engineers and Other Construction Equipment Operators	18,767	21,115	2,348	12.5	19,628	17.76	PS	HS
47-2081	Drywall and Ceiling Tile Installers	7,575	8,316	741	9.8	6,226	16.96	PS	NR
47-2111	Electricians	43,728	47,454	3,726	8.5	43,536	20.15	PS	HS
47-2121	Glaziers	4,659	5,391	732	15.7	5,261	17.41	PS	HS
47-2131	Insulation Workers, Floor, Ceiling, and Wall	2,517	2,739	222	8.8	2,399	16.36	PS	NR
47-2132	Insulation Workers, Mechanical	1,586	1,741	155	9.8	1,534	17.84	NR	HS
47-2141	Painters, Construction and Maintenance	34,642	38,766	4,124	11.9	28,786	15.80	PS	NR
47-2142	Paperhangers	337	371	34	10.1	272	17.36	NR	NR
47-2151	Pipelayers	5,432	6,031	599	11.0	5,329	17.38	PS	NR
47-2152	Plumbers, Pipefitters, and Steamfitters	29,981	33,887	3,906	13.0	30,261	20.13	PS	HS
47-2161	Plasterers and Stucco Masons	3,474	3,961	487	14.0	3,216	17.59	PS	NR
47-2171	Reinforcing Iron and Rebar Workers	1,079	1,251	172	15.9	1,119	17.78	PS	HS
47-2181	Roofers	23,439	27,268	3,829	16.3	23,404	16.07	PS	NR
47-2211	Sheet Metal Workers	8,755	9,797	1,042	11.9	8,695	18.32	PS	HS
47-2221	Structural Iron and Steel Workers	5,117	5,988	871	17.0	5,493	19.36	PS	HS
47-2231	Solar Photovoltaic Installers	1,086	1,774	688	63.4	1,878	15.22	HS	HS
47-3000	Helpers, Construction Trades	20,428	23,063	2,635	12.9	26,782	-	-	-
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	1,236	1,467	231	18.7	1,732	12.23	NR	NR
47-3012	Helpers--Carpenters	2,701	3,163	462	17.1	3,718	13.15	NR	NR
47-3013	Helpers--Electricians	7,869	8,541	672	8.5	9,783	13.99	NR	HS
47-3014	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	555	642	87	15.7	751	11.38	NR	NR
47-3015	Helpers--Pipefitters, Plumbers, Pipefitters, and Steamfitters	5,162	5,874	712	13.8	6,840	13.44	NR	HS
47-3016	Helpers--Roofers	1,433	1,694	261	18.2	1,997	13.52	NR	NR
47-3019	Helpers, Construction Trades, All Other	1,472	1,682	210	14.3	1,961	13.04	NR	NR
47-4000	Other Construction and Related Workers	33,901	38,291	4,390	13.0	35,180	-	-	-
47-4011	Construction and Building Inspectors	7,956	8,955	999	12.6	8,156	27.41	PS	HS
47-4021	Elevator Installers and Repairers	2,572	2,813	241	9.4	2,704	28.85	PS	HS

**JOBS BY OCCUPATION
FLORIDA
CONSTRUCTION**

SOC Code	SOC Title	Employment				Percent Growth	Total Job Openings	2017 Median Hourly Wage (\$)*	Education	
		2018	2026	Growth	FL†				BLS†	
47-4031	Fence Erectors	1,995	2,342	347	17.4	2,236	16.10	NR	NR	
47-4041	Hazardous Materials Removal Workers	1,508	1,681	173	11.5	1,681	16.62	A	HS	
47-4051	Highway Maintenance Workers	3,119	3,431	312	10.0	2,922	15.47	PS	HS	
47-4061	Rail-Track Laying and Maintenance Equipment Operators	293	369	76	25.9	328	18.83	HS	HS	
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	1,767	1,990	223	12.6	2,069	16.14	HS	HS	
47-4091	Segmental Pavers	867	1,018	151	17.4	935	-	HS	HS	
47-4099	Construction and Related Workers, All Other	13,824	15,692	1,868	13.5	14,149	-	NR	HS	
47-5000	Extraction Workers	2,887	3,168	281	9.7	2,889	-	-	-	
47-5011	Derrick Operators, Oil and Gas	5	5	0	0.0	5	-	-	NR	
47-5012	Rotary Drill Operators, Oil and Gas	122	135	13	10.7	133	20.37	NR	NR	
47-5013	Service Unit Operators, Oil, Gas, and Mining	47	50	3	6.4	49	14.53	PS	NR	
47-5021	Earth Drillers, Except Oil and Gas	2,187	2,398	211	9.7	2,119	17.79	PS	HS	
47-5031	Explosives Workers, Ordnance Handling Experts, and Blasters	66	78	12	18.2	80	25.48	HS	HS	
47-5041	Continuous Mining Machine Operators	94	97	3	3.2	91	21.10	HS	NR	
47-5042	Mine Cutting and Channeling Machine Operators	18	18	0	0.0	17	24.99	HS	HS	
47-5081	Helpers--Extraction Workers	134	145	11	8.2	147	14.17	NR	HS	

* Hourly wages for teaching occupations were calculated using a 40-hour work week for 9½ months per year.

† Education levels are abbreviated as follows.

Florida

A: associate degree

B: bachelor's degree

HS: high school diploma or GED

M+: master's, doctoral or professional degree

NR: no formal educational credential required

PS: postsecondary non-degree award

U.S. Department of Labor, Bureau of Labor Statistics

A: associate degree

B: bachelor's degree

D: doctoral or professional degree

HS: high school diploma or GED

M: master's degree

NR: no formal educational credential required

PS: postsecondary non-degree award

SC: some college, no degree

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026		Total Enrolled	Total Supply
	2018-2026 Total Openings	Average Annual Openings		
High Potential Supply Gaps				
Structural Iron and Steel Workers	5,493	687	97	0
Business Teachers, Postsecondary	3,664	458	6	0
Library Technicians	3,193	399	0	0
Ophthalmic Medical Technicians	3,115	389	2	0
Electronic Home Entertainment Equipment Installers	3,227	403	0	0
Area, Ethnic, and Cultural Studies Teachers, Postsecondary	260	33	0	0
Shipping, Receiving, and Traffic Clerks	29,503	3,688	139	12
Security Guards	104,312	13,039	407	55
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	22,058	2,757	58	13
Securities, Commodities, and Financial Services Sales Agents	23,595	2,949	5	20
Teacher Assistants	44,950	5,619	129	40
Medical Transcriptionists	6,396	800	28	6
Recreation Workers	35,592	4,449	332	35
Carpenters	63,636	7,955	430	67
Loan Interviewers and Clerks	16,487	2,061	1	19
Customer Service Representatives	287,498	35,937	1,330	332
First-Line Supervisors of Construction Trades and Extraction Workers	50,202	6,275	142	62
Cabinetmakers and Bench Carpenters	5,090	636	117	8
Psychiatric Technicians	7,882	985	18	13
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	98,538	12,317	601	165
Self-Enrichment Education Teachers	20,098	2,512	16	36
Operating Engineers and Other Construction Equipment Operators	19,628	2,454	150	36
Cargo and Freight Agents	5,416	677	126	12
Maintenance and Repair Workers, General	89,721	11,215	1,746	234
Mobile Heavy Equipment Mechanics, Except Engines	5,088	636	74	15
Plumbers, Pipefitters, and Steamfitters	30,261	3,783	2,291	101
Insurance Sales Agents	43,868	5,484	128	167
Outdoor Power Equipment and Other Small Engine Mechanics	3,065	383	55	12
Surveying and Mapping Technicians	5,864	733	1	23

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026			Total Supply
	2018-2026 Total Openings	Average Annual Openings	Total Enrolled	
Gaming Dealers	4,072	509	17	17
Magnetic Resonance Imaging Technologists	2,191	274	58	11
Directors, Religious Activities and Education	10,286	1,286	338	53
First-Line Supervisors of Retail Sales Workers	111,837	13,980	2,042	578
Embalmers	177	22	5	1
First-Line Supervisors of Production and Operating	22,283	2,785	218	126
Computer-Controlled Machine Tool Operators, Metal and Plastic	1,687	211	47	10
First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	11,136	1,392	920	67
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	16,127	2,016	716	120
Machinists	8,752	1,094	477	67
First-Line Supervisors of Mechanics, Installers, and Repairers	25,304	3,163	1,260	203
Surveyors	2,802	350	0	23
Credit Counselors	3,020	378	1	26
Police, Fire, and Ambulance Dispatchers	5,647	706	86	50
Childcare Workers	77,385	9,673	3,783	739
Real Estate Sales Agents	36,121	4,515	429	349
First-Line Supervisors of Housekeeping and Janitorial Workers	16,347	2,043	519	166
Avionics Technicians	1,701	213	415	18
Home Appliance Repairers	3,258	407	273	35
Medical Equipment Repairers	3,401	425	486	37
Power Plant Operators	1,280	160	37	16
Biochemists and Biophysicists	941	118	0	12
Electrical Power-Line Installers and Repairers	4,257	532	246	56
First-Line Supervisors of Office and Administrative Support Workers	91,496	11,437	8,063	1,226
Moderate Potential Supply Gaps				
Crane and Tower Operators	2,601	325	114	35
Construction and Building Inspectors	8,156	1,020	235	114
Occupational Health and Safety Specialists	1,337	167	7	19
Librarians	5,689	711	0	87

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026			Total Supply
	2018-2026 Total Openings	Average Annual Openings	Total Enrolled	
First-Line Supervisors of Food Preparation and Serving Workers	88,646	11,081	5,809	1,360
Ophthalmic Laboratory Technicians	3,420	428	60	54
Security and Fire Alarm Systems Installers	6,933	867	505	111
Tax Preparers	5,248	656	3	89
Communications Teachers, Postsecondary	1,118	140	0	19
Industrial Machinery Mechanics	10,997	1,375	2,764	192
Rehabilitation Counselors	3,262	408	0	58
Veterinary Assistants and Laboratory Animal Caretakers	8,562	1,070	705	154
Captains, Mates, and Pilots of Water Vessels	3,741	468	79	79
Dental Laboratory Technicians	3,346	418	242	71
Automotive Body and Related Repairers	9,737	1,217	1,179	208
Human Resources Specialists	33,533	4,192	927	763
Veterinary Technologists and Technicians	8,599	1,075	1,666	205
Electricians	43,536	5,442	7,283	1,044
English Language and Literature Teachers, Postsecondary	2,199	275	1	53
Bookkeeping, Accounting, and Auditing Clerks	103,306	12,913	9,376	2,722
Solar Photovoltaic Installers	1,878	235	101	51
Foreign Language and Literature Teachers, Postsecondary	572	72	0	16
Clergy	9,860	1,233	1,144	278
Paralegals and Legal Assistants	25,965	3,246	6,336	755
Opticians, Dispensing	4,117	515	726	121
Career/Technical Education Teachers, Secondary School	5,379	672	22	161
Claims Adjusters, Examiners, and Investigators	15,113	1,889	451	483
Occupational Health and Safety Technicians	365	46	66	12
Medical Secretaries	25,637	3,205	3,649	844
Automotive Service Technicians and Mechanics	47,081	5,885	9,296	1,558
Educational, Guidance, School, and Vocational Counselors	12,493	1,562	273	418
Medical and Clinical Laboratory Technologists	7,152	894	643	252
Medical Equipment Preparers	5,132	642	923	181

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026			Total Supply
	2018-2026 Total Openings	Average Annual Openings	Total Enrolled	
Real Estate Brokers	6,120	765	1	2,16
Vocational Education Teachers, Postsecondary	4,495	562	18	161
Environmental Engineering Technicians	672	84	0	25
Medical and Clinical Laboratory Technicians	5,250	656	2,837	200
Wholesale and Retail Buyers, Except Farm Products	4,502	563	622	177
Social Work Teachers, Postsecondary	326	41	0	13
Pharmacy Technicians	23,744	2,968	3,274	963
Meeting, Convention, and Event Planners	8,816	1,102	177	360
Commercial and Industrial Designers	915	114	124	39
Elementary School Teachers, Except Special Education	51,011	6,376	401	2,202
Mathematical Science Teachers, Postsecondary	1,903	238	2	86
Bailiffs	915	114	72	43
Broadcast Technicians	1,839	230	78	88
Dental Hygienists	8,005	1,001	2,088	384
Accountants and Auditors	76,810	9,601	1,089	3,746
Nuclear Medicine Technologists	1,043	130	209	51
Veterinarians	2,392	299	0	117
Landscape Architects	1,398	175	0	69
Economics Teachers, Postsecondary	282	35	0	14
Bus and Truck Mechanics and Diesel Engine Specialists	10,788	1,349	2,229	544
Low Potential Supply Gaps				
Medical Scientists, Except Epidemiologists	1,946	243	13	100
Environmental Science and Protection Technicians, Including Health	1,673	209	1,322	86
Training and Development Specialists	15,073	1,884	722	784
Physical Therapists	8,614	1,077	27	450
Respiratory Therapists	5,872	734	1,707	321
Airline Pilots, Copilots, and Flight Engineers	4,460	558	1,052	252
Kindergarten Teachers, Except Special Education	10,622	1,328	708	610
Nursing Assistants	106,980	13,373	18,206	6,326

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026		2018-2026		Total Supply
	Total Openings	Average Annual Openings	Total Enrolled	Total Supply	
Technical Writers	2,422	303	14	145	
Commercial Pilots	4,475	559	1,162	274	
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	34,247	4,281	7,990	2,143	
Appraisers and Assessors of Real Estate	3,933	492	34	249	
History Teachers, Postsecondary	403	50	1	26	
Aircraft Mechanics and Service Technicians	10,353	1,294	5,542	671	
Heavy and Tractor-Trailer Truck Drivers	89,204	11,151	7,051	5,795	
Air Traffic Controllers	1,559	195	817	102	
Industrial Engineers	7,124	891	0	472	
Civil Engineers	14,345	1,793	31	992	
Occupational Therapy Assistants	3,066	383	731	213	
Physical Therapist Aides	3,476	435	947	246	
Interior Designers	5,370	671	2,154	383	
Recreational Vehicle Service Technicians	1,075	134	78	78	
Medical Assistants	68,385	8,548	19,215	4,969	
Umpires, Referees, and Other Sports Officials	953	119	73	73	
Physical Therapist Assistants	7,512	939	2,582	584	
Substance Abuse and Behavioral Disorder Counselors	5,665	708	3	442	
Market Research Analysts and Marketing Specialists	33,365	4,171	318	2,607	
Licensed Practical and Licensed Vocational Nurses	35,907	4,488	12,663	2,824	
Urban and Regional Planners	1,741	218	0	140	
Middle School Teachers, Except Special and Career/Technical Education	22,204	2,776	102	1,791	
Architectural and Civil Drafters	5,874	734	3,156	479	
Lawyers	27,129	3,391	1,425	2,283	
Curators	435	54	0	37	
Software Developers, Applications	31,228	3,904	1,174	2,661	
Occupational Therapists	4,462	558	494	382	
Preschool Teachers, Except Special Education	21,314	2,664	8,512	1,883	
Light Truck or Delivery Services Drivers	58,416	7,302	5,635	5,295	

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026			Total Enrolled	Total Supply
	Total Openings	Average Annual Openings	Total Enrolled		
Sociology Teachers, Postsecondary	327	41	0	30	30
Dental Assistants	21,297	2,662	4,655	2,016	2,016
Diagnostic Medical Sonographers	3,987	498	1,660	382	382
Surgical Technologists	6,118	765	2,333	595	595
Social and Human Service Assistants	13,864	1,733	5,285	1,349	1,349
Dentists, General	3,125	391	405	308	308
Physician Assistants	4,979	622	88	494	494
Radiologic Technologists	8,133	1,017	3,175	811	811
Instructional Coordinators	9,416	1,177	244	955	955
Pharmacists	10,213	1,277	622	1,045	1,045
Philosophy and Religion Teachers, Postsecondary	539	67	105	56	56
Architects, Except Landscape and Naval	4,572	572	0	491	491
Civil Engineering Technicians	2,733	342	464	295	295
Operations Research Analysts	5,081	635	1,588	549	549
Hairdressers, Hairstylists, and Cosmetologists	49,942	6,243	16,122	5,405	5,405
Graphic Designers	14,161	1,770	5,799	1,551	1,551
No Potential Supply Gaps					
Music Directors and Composers	4,825	603	202	553	553
Biological Science Teachers, Postsecondary	1,843	230	8	213	213
Speech-Language Pathologists	4,751	594	53	556	556
Police and Sheriff's Patrol Officers	26,197	3,275	7,778	3,083	3,083
Travel Guides	127	16	32	15	15
Zoologists and Wildlife Biologists	1,449	181	1	173	173
Motorboat Mechanics and Service Technicians	3,492	437	1,716	417	417
Firefighters	16,798	2,100	4,312	2,018	2,018
Welders, Cutters, Solderers, and Brazers	14,493	1,812	6,651	1,750	1,750
Radiation Therapists	812	102	320	99	99
Cartographers and Photogrammetrists	474	59	0	59	59
Insurance Appraisers, Auto Damage	1,066	133	0	133	133

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026			Total Supply
	2018-2026 Total Openings	Average Annual Openings	Total Enrolled	
Environmental Scientists and Specialists, Including Health	4,968	621	13	632
Cardiovascular Technologists and Technicians	2,605	326	972	333
Fabric and Apparel Patternmakers	101	13	88	13
Mental Health Counselors	5,171	646	306	669
Private Detectives and Investigators	4,730	591	776	613
Healthcare Social Workers	7,678	960	0	1,012
Fashion Designers	505	63	339	67
Political Science Teachers, Postsecondary	271	34	0	36
Environmental Engineers	1,716	215	1	230
Electrical and Electronics Repairers, Commercial and Industrial Equipment	3,699	462	3,902	499
Child, Family, and School Social Workers	11,258	1,407	146	1,544
Fire Inspectors and Investigators	813	102	1,083	112
Clinical, Counseling, and School Psychologists	2,586	323	462	358
Physicists	490	61	0	68
Chefs and Head Cooks	10,663	1,333	6,780	1,540
Aerospace Engineering and Operations Technicians	634	79	202	92
Electrical and Electronics Engineering Technicians	4,438	555	4,936	667
Physics Teachers, Postsecondary	479	60	0	73
Massage Therapists	16,045	2,006	5,281	2,454
Registered Nurses	113,991	14,249	48,891	17,996
Nurse Practitioners	7,562	945	1,105	1,204
Nurse Anesthetists	1,405	176	212	224
Audiologists	476	60	0	78
Aircraft Cargo Handling Supervisors	413	52	897	68
Title Examiners, Abstractors, and Searchers	3,653	457	5,792	626
Marriage and Family Therapists	4,109	514	104	711
Architecture Teachers, Postsecondary	127	16	0	22
Compensation, Benefits, and Job Analysis Specialists	3,376	422	698	590
Geography Teachers, Postsecondary	80	10	0	14

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026			Total Supply
	2018-2026 Total Openings	Average Annual Openings	Total Enrolled	
Electrical and Electronics Installers and Repairer	628	79	504	111
Atmospheric and Space Scientists	352	44	0	64
Home Health Aides	39,947	4,993	10,195	7,557
Loan Officers	18,118	2,265	433	3,481
Computer User Support Specialists	28,392	3,549	21,055	5,486
Airfield Operations Specialists	539	67	920	106
Chemistry Teachers, Postsecondary	737	92	1	146
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	1,045	131	2,902	215
Anthropology and Archeology Teachers, Postsecondary	145	18	0	30
Detectives and Criminal Investigators	3,742	468	775	783
Interpreters and Translators	3,129	391	562	659
Agricultural Engineers	108	14	0	23
Biological Technicians	2,089	261	4,579	459
Mechanical Drafters	2,305	288	4,631	510
Public Relations Specialists	12,343	1,543	74	2,746
Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	319	40	0	71
Health Specialties Teachers, Postsecondary	10,527	1,316	2,094	2,384
Athletic Trainers	886	111	8	203
Chiropractors	1,111	139	911	256
Education Teachers, Postsecondary	2,045	256	133	475
Forensic Science Technicians	1,823	228	2,236	431
Electrical and Electronics Drafters	793	99	2,671	190
Medical Appliance Technicians	968	121	3,174	233
Industrial Engineering Technicians	1,681	210	2,864	405
Dietitians and Nutritionists	2,087	261	63	504
Archivists	178	22	0	43
Chemical Technicians	1,969	246	3,682	483
Software Developers, Systems Software	11,531	1,441	850	2,909
Producers and Directors	6,685	836	1,537	1,714

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026			Total Enrolled	Total Supply
	2018-2026 Total Openings	Average Annual Openings	2018-2026 Average Annual Supply		
Compliance Officers	13,261	1,658	208	3,401	
Microbiologists	234	29	1	61	
Special Education Teachers, Kindergarten and Elementary School	3,118	390	80	821	
Health Educators	4,158	520	508	1,095	
Art, Drama, and Music Teachers, Postsecondary	2,982	373	270	793	
Art Directors	2,135	267	603	568	
Audio and Video Equipment Technicians	5,106	638	7,584	1,363	
Personal Financial Advisors	12,641	1,580	120	3,469	
Nuclear Engineers	96	12	0	28	
Electrical Engineers	4,502	563	29	1,339	
Engineering Teachers, Postsecondary	1,464	183	0	441	
Psychology Teachers, Postsecondary	1,373	172	535	417	
Motorcycle Mechanics	1,472	184	1,296	457	
Management Analysts	50,267	6,283	7,719	15,853	
Food Scientists and Technologists	283	35	0	91	
Medical Records and Health Information Technicians	7,499	937	13,952	2,454	
Network and Computer Systems Administrators	11,451	1,431	9,473	3,850	
Computer and Information Research Scientists	346	43	2	120	
Chemists	2,191	274	2	761	
Health and Safety Engineers, Except Mining Safety	647	81	1	230	
Financial Analysts	9,876	1,235	239	3,549	
Museum Technicians and Conservators	306	38	0	110	
Mechanical Engineers	5,116	640	31	1,917	
Web Developers	7,598	950	1,612	2,872	
Special Education Teachers, Preschool	2,149	269	81	816	
Family and General Practitioners	4,501	563	2,567	1,748	
Secondary School Teachers, Except Special and Career/Technical Education	29,999	3,750	274	12,132	
Soil and Plant Scientists	421	53	0	171	
Materials Engineers	405	51	0	169	

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026			Total Enrolled	Total Supply
	2018-2026 Total Openings	Average Annual Openings	2018-2026 Average Annual Supply		
Electronics Engineers, Except Computer	3,180	398	27	1,348	1,348
Computer Systems Analysts	12,586	1,573	8,065	5,375	5,375
Bus Drivers, Transit and Intercity	12,186	1,523	5,527	5,231	5,231
Computer Network Architects	11,477	1,435	1,131	4,941	4,941
Mechanical Engineering Technicians	698	87	2,909	304	304
Information Security Analysts	4,423	553	1,125	1,997	1,997
Actors	1,076	135	56	487	487
Geoscientists, Except Hydrologists and Geographers	579	72	0	269	269
Nursing Instructors and Teachers, Postsecondary	2,686	336	1,724	1,266	1,266
Computer Hardware Engineers	1,377	172	56	652	652
First Line Supervisors of Fire Fighting and Prevention Workers	2,044	256	2,368	995	995
Farm and Home Management Advisors	656	82	0	330	330
Probation Officers and Correctional Treatment Specialists	3,229	404	387	1,631	1,631
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	478	60	2,836	242	242
Database Administrators	5,273	659	1,873	2,733	2,733
Special Education Teachers, Secondary School	1,552	194	78	821	821
Mental Health and Substance Abuse Social Workers	3,709	464	141	1,986	1,986
Logisticians	6,193	774	181	3,423	3,423
Anthropologists and Archeologists	167	21	0	96	96
Dietetic Technicians	913	114	275	539	539
Special Education Teachers, Middle School	1,383	173	78	821	821
Multimedia Artists and Animators	2,633	329	3,905	1,567	1,567
Computer Network Support Specialists	7,917	990	15,511	4,749	4,749
Career/Technical Education Teachers, Middle School	265	33	18	161	161
Phlebotomists	9,224	1,153	16,639	5,960	5,960
Camera Operators, Television, Video, and Motion Picture	881	110	716	597	597
Film and Video Editors	1,602	200	3,097	1,148	1,148
Writers and Authors	5,088	636	619	3,817	3,817
Biomedical Engineers	453	57	1	400	400

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026			Total Enrolled	Total Supply
	Total Openings	Average Annual Openings	Total Enrolled		
Watch Repairers	65	8	93	59	
Fine Artists, Including Painters, Sculptors, and Illustrators	1,163	145	225	1,069	
Emergency Medical Technicians and Paramedics	7,425	928	16,800	6,830	
Foresters	206	26	0	191	
Hydrologists	237	30	0	232	
Statisticians	983	123	0	968	
Cost Estimators	14,672	1,834	8,321	14,808	
Actuaries	390	49	0	421	
Skincare Specialists	4,472	559	8,004	4,839	
Community Health Workers	3,113	389	2,766	4,201	
Exercise Physiologists	728	91	0	1,110	
Financial Examiners	2,408	301	939	3,674	
Chemical Engineers	312	39	1	478	
Animal Scientists	130	16	0	205	
Conservation Scientists	222	28	0	359	
Sales Engineers	1,980	248	55	3,274	
Manicurists and Pedicurists	4,749	594	17,297	8,919	
Mathematicians	106	13	0	203	
Computer Science Teachers, Postsecondary	1,708	214	498	3,310	
Agricultural Sciences Teachers, Postsecondary	378	47	18	751	
Historians	55	7	0	114	
Electro-Mechanical Technicians	171	21	3,340	362	
First-Line Supervisors of Police and Detectives	2,405	301	11,920	5,816	
Aerospace Engineers	1,529	191	56	3,815	
Commercial Divers	471	59	1,564	1,330	
Epidemiologists	34	4	0	102	
Credit Analysts	2,225	278	1,456	7,093	
Budget Analysts	2,190	274	1,112	7,103	
Law Teachers, Postsecondary	665	83	1,425	2,281	

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026			Total Supply
	2018-2026 Total Openings	Average Annual Openings	Total Enrolled	
Home Economics Teachers, Postsecondary	66	8	0	256
Survey Researchers	414	52	8	1,666
Criminal Justice and Law Enforcement Teachers, Postsecondary	857	107	2,450	4,599
Geographers	22	3	0	129
Forestry and Conservation Science Teachers, Postsecondary	77	10	0	483
Recreation and Fitness Studies Teachers, Postsecondary	324	41	201	2,144
Environmental Science Teachers, Postsecondary	87	11	12	723
Economists	150	19	8	1,362
Audio-Visual and Multimedia Collections Specialist	17	2	90	168
Administrative Law Judges, Adjudicators, and Hearing Officers	214	27	1,425	2,281
Arbitrators, Mediators, and Conciliators	210	26	1,425	2,281
Sociologists	84	11	25	1,947

Sources: FL Department of Economic Opportunity (DEO), Bureau of Workforce Statistics and Economic Research; FL Department of Education; FL State University System; FL Commission of Independent Education.

NOTES:

Enrollment and Supply data are based on enrollment and completion tabulations from programs within the following institutions:

- Workforce Innovation and Opportunity Act
- District Postsecondary
- Florida College System
- Commission for Independent Education
- Independent Colleges & Universities of Florida
- State University System
- WIOA
- DPSEC
- FCS
- CIE
- ICUF
- SUS

Data included in this report were updated in December 2018 and represent the most current available. Not all data represent the same academic calendar year.

**Workforce Potential Supply Gap Report
Florida Statewide - January 2019**

Occupation Title	2018-2026		Total Enrolled	Total Supply
	Total Openings	Average Annual Openings		

Supply counts do not represent the total availability of labor for a given occupation. Other sources of labor supply may include individuals currently employed in similar occupations, migration, military separations or others currently outside the labor force.



Technology and Labor

Recommendations: The Strategic Council recommends that AIA Florida advocate for increased labor education and the skill-set development required to build tomorrow (trades and technology). This includes supporting the advocacy efforts related to the promotion of construction trades in coordination with our allied organizations and professions.

Ideas discussed include:

Advocacy efforts that support the effective use of the Sadowski Act and the related funds available to positively impact the labor pool.

Advocacy efforts that support the funding of training/apprenticeship programming through DoE and/or other state mechanisms.

Research feasibility of collaborative event showcasing building technology, architecture and engineering to both educate and promote vocational opportunities going forward. “Making Construction Cool Again”

Advocate for prison reform and vocational training within the prison system with the understanding that this not only has a long-term positive impact on the labor market but also has the potential to create lasting and significant social reform.

Resiliency

Recommendations: The Strategic Council recommends that AIA Florida evaluate current legislative policy/principles and consider placing an emphasis on strengthening the current building code language and resiliency efforts state-wide.

Ideas discussed include:

Advocacy efforts in support of the implementation of the highest quality building codes for our state, addressing the recent history of multiple, billion-dollar disasters affecting the state’s economic viability and the health, safety and welfare of inhabitants.

Recommendation for AIA Florida to evaluate the creation of a task force to evaluate existing local land use codes, resiliency and flooding-related guidelines and generate model code language.

Recommendation for AIA Florida to begin a dialogue with the State’s new Office of Resilience and Coastal Protection.

Recommendation for AIA Florida Board to review and reference [of Blue Ribbon Report on Codes and Standards](#) (Summer, 2019).



Economic Forecasting

Recommendation: The Strategic Council recommends that AIA Florida develop a clear strategy and approach for professional development in a shifting business and economic landscape, educating members, and creating stronger alliances with Florida Schools of Architecture.

Recommend that AIA Florida evaluate advocacy and professional development opportunities to educate members about liabilities and risk associated with decreased control and current practice model trends.

Recommend that that AIA Florida explore opportunities to educate members on practice model trends, future business models, and scalable approaches to new business practices.

Recommend that AIA Florida evaluate professional development opportunities to better position architects as thought-leaders regarding the built environment in the shifting political landscape. This may include certificate programs and leadership development.

Recommendation for a summit with universities/educators, practitioners, AIA and allied organizations, and emerging professionals at the table to discuss business-readiness of graduates and curriculum trends going forward.

Recommend AIA Florida evaluate opportunities to serve as a resource for those teaching Professional Practice at local Universities, providing relevant case studies and speakers. This may include collaboration with AIAS.

Recommend that AIA Florida Board review national data and Florida economic trends to evaluate methods to better prepare members for market variations. This may include additional research on Florida / industry-specific trends.



Kim Headland, AIA



Kim Headland is a licensed architect with more than 16 years of experience in the architecture industry. Kim is a proud graduate of Rensselaer Polytechnic Institute School of Architecture with a Bachelor of Architecture and a Bachelor of Science: Building Sciences. Kim is a Principal and Vice President of the firm responsible for business development. She has been a member of the WILDER ARCHITECTURE Team since 2006 and has an expertise in health care projects and the Florida Building Code and has a passion for detail.

Kim is a registered architect in Florida and a member of the American Institute of Architects. She has served the American Institute of Architects in national, state and local components recently as President of the Tampa Bay Component and currently as President of AIA Florida in 2018.

Kim is actively involved in community affairs in East Tampa, where she lives with her husband Richard, also an architect, and their small menagerie – a dog, a cat, two boys, and a little girl.

Jason Adams, Assoc. AIA



Jason Adams is Principal and Partner for the design firm of [STRANG] Design. He oversees the firm's client and business development. Adams joined the firm in 2003 and has been a major force in its ongoing growth and success. The firm now operates three offices within the state of Florida and employs a robust staff of architects, landscape architects and designers and critical support staff under Adams's leadership. During Adams' tenure, the firm has successfully engaged over 200 projects with a combined construction value of more than \$350M. Adams is a graduate of the University of Colorado at Boulder and had also worked under the tutelage of William Pierce Architects in Vail, Colorado, prior to moving to Miami.

In 2019, Jason has been appointed as the Vice President of Jessica Bedoya Adams, P.A. representing one of the top 10 producing Realtors in Miami, Florida. His role is to expand Jessica's business and mission as one of the most sought after private residential agents for Florida and the Caribbean.

Jason currently serves on the following American Institute of Architect's organizations: AIA Fort Lauderdale Board of Directors, AIA Florida/Caribbean Board of Directors as Regional Associate Director, AIA Florida's Foundation for Architecture and Strategic Council and the AIA National Associates Committee.



Kris Stenger, AIA



Kristopher is the Assistant Director of Building Permitting and Sustainability for the [City of Winter Park](#), where he helps to direct the adoption of the City of Winter Park Sustainability Action Plan, as well as the selection of the City of Winter Park as a finalist in the Georgetown Energy Prize.

Before employment with Winter Park Kris served as the Architect for the Orange County Department of Building Safety where he aided the Central Florida Energy Efficiency Alliance (CFEEA) in training college students who have served as Energy Specialist interns on how to utilize the Energy Star Portfolio Manager to benchmark building energy usage. His efforts for CFEEA helped earn the Metro Plan Orlando Clean Air Award. Kris also played an instrumental role in performing the registered architect verifications for the Energy Star labels for 12 different Orange County Public Schools.

In 2012 he was honored as the US Green Building Council Central Florida Chapter Community LEEDer of the Year.

Kris currently serves on the American Institute of Architects Codes and Standards Committee, ICC Sustainability, Energy and High-Performance Code Action Committee, and is currently the Secretary of the Central Florida Chapter of the Building Officials Association of Florida and is as an adjunct faculty member for Valencia College and the University of Central Florida.

Kristopher was raised in Central Illinois and graduated from the University of Illinois in 1999. After receiving his Master of Architecture from Arizona State University in 2001, he and his wife Holly Stenger, AIA, moved to Orlando, where they designed and constructed their residence. The net-zero Energy Star home earned LEED Gold status, a Society of Registered Architects Bronze Medal, and is part of the first OUC Community Solar Farm. Kris and Holly have two children, Karmann and Maxwell.



Taryn Sabia, Assoc. AIA



Taryn Sabia's twelve-year career in urban and community design is anchored by a passion to involve citizens in actively shaping the built environment. Her diverse background in architecture, urban design, education, and community engagement has provided her with a deep understanding of the importance of context-based design, mobility, and culture of place, and how these elements inform an urban framework.

Professor Sabia is a co-founder of the Tampa based non-profit, urban design collaborative, Urban Charrette, Inc. The organization is dedicated to educating community leaders and young professionals about sustainable urban design and empowering citizens to make their neighborhoods and cities better places to live. Professor Sabia is Director of the

Florida Center for Community Design and Research at the University of South Florida's School of Architecture & Community Design. As a Research Associate Professor, she teaches graduate courses on the city, urban design policy, sustainability, urban form, urban transportation systems, and citizen involvement in urbanism. Her research is committed to the merging of design and civics, particularly related to transit modes and public space. Her community interests focus on engaging citizens in participatory design experiences through tactile urbanism. She has extensive experience building partnerships between community members, organizations, and government leaders.

Professor Sabia earned a Master of Urban and Community Design from the University of South Florida and a Master of Architecture from Rhode Island School of Design, where she was a Graduate Fellow for City-State: RISD's Urban Design Lab and served as a Senate Fellow to the Senior Policy Advisor for the Rhode Island Senate. She holds a Master of Education from the Harvard Graduate School of Education and a bachelor's degree in Visual Art from Eckerd College.



Beth Lewis, AIA



Elizabeth Lewis, AIA, LEED AP, Associate Professor at Florida A&M University School of Architecture, USA, has over twenty-five years of design teaching experience with a research focus on high-performing and net-zero buildings. A graduate of Washington University in St. Louis, she is active in the profession and AIA leadership, a founder of the USGBC Florida Capital Region Chapter, and a contributor to *Decoding Theoryspeak*.

Jim Painter



Jim is the Executive Director of the Florida Concrete Masonry Education Council, a non-profit operating as a direct-support organization of the Department of Economic Opportunity with the purpose of bringing together masonry manufacturers and contractors in an effort to plan and conduct training programs, improve access to masonry education, develop outreach programs to ensure diversity, inform the public about the sustainability and economic benefits of concrete masonry products. Jim is also the co-owner of Painter Masonry, which has been in business for over 40 years. He has served as Gainesville City Commissioner and as Mayor.



Leslie Chapman Henderson



Leslie Chapman-Henderson is the president and chief executive officer of the nonprofit Federal Alliance for Safe Homes (FLASH), the country's leading consumer advocate for strengthening homes and safeguarding families from natural and humanmade disasters. FLASH was founded in 1998 and brings together more than 100 diverse partners that share a vision of making America a more disaster-resilient nation.

Leslie's experience and expertise span creative, technical, and public policy initiatives from delivery of the award-winning, 4-D "edu-tainment" experience, [*StormStruck: A Tale of Two Homes*](#)[®] at Epcot[®] at the Walt Disney World[®] Resort to the development of Blueprint for Safety[®], a landmark education program. One of her recent projects includes the creation of the award-winning [National Hurricane Resilience Initiative - #HurricaneStrong](#), presented by FEMA, FLASH, NOAA, and *The Weather Channel*.

Her public service includes co-chair of the legislatively-created My Safe Florida Home Advisory Council; board trustee for Florida International University – International Hurricane Research Center; advisory council member for the Florida State University Catastrophic Storm Risk Management Center; chair and consumer representative for the Florida Hurricane Catastrophe Fund Advisory Council; guest lecturer at Florida State University and the University of Florida – School of Construction; and as the Florida gubernatorial appointee to the FCC *Warning, Alert and Response* (WARN) Committee.

Senator Jose Javier Rodriguez



Senator Rodriguez represents Florida's 37th district in the State Senate covering portions of Miami-Dade County. He previously served in the Florida House of Representatives. Rodriguez grew up in Miami. After receiving his degree from Brown University, he joined the US Peace Corps. Upon his return to the U.S., he completed Harvard Law School. He has consistently sponsored bills required studies of the impacts of sea-level rise before public construction projects. Senator Rodriguez can often be seen wearing his rain boots on the Senate floor during session, encouraging his colleagues to make addressing climate change a priority.



Nati Soto, FAIA



Nati is the 2019 AIA Florida President. She joined her firm, Ferguson Glasgow Schuster Soto, in 1979 and has been president for over 16 years. She is a graduate of the University of Miami and has over 30 years of experience specializing in commercial, corporate and municipal design. Nati has also chaired the Miami Center for Architecture and Design Board and served on the Coral Gables Green Task Force.

