FMI

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2019 FMI Overview

Featuring FMI's latest forecast, the 2019 U.S. and Canada Construction Outlooks

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Keep Calm, Stay Focused and Get Ahead of the Next Downturn

2018 marked another strong and dynamic year for the North American built environment, with total U.S. engineering and construction (E&C) spending growth expected to finish at 5%, the same as in the previous year.

By Chris Daum, CEO, FMI

Through 2019, FMI expects E&C spending to continue to grow at an anticipated 3% annual rate, with mostly positive, albeit moderately decelerating, growth rates across the residential, nonresidential buildings and non-residential structures market sectors.

The Architecture Billings Index—which typically leads relevant construction activity by nine to 12 months—paints a similarly upbeat picture. According to latest readings, contractors will continue to have robust backlogs during the coming months.

Mergers and acquisitions (M&A) will likely remain strong this year as well, following an active year in 2018 across the North American built environment, which was shaped by over 400 closed or announced transactions, a 33% increase from the number of deals closed or announced in 2017. Deal flow in 2018 was primarily defined by midsized or smaller strategic deals, as opposed to larger $1 billion deals we have seen in recent years, and was spread across all subsectors of the broader built environment.

Several factors contributed to this active market, including activity from private equity firms (both as buyers and sellers), public companies looking for growth (including newly public companies), and significant interest in specific sectors like building and energy services. It should be noted, however, that a major driver of M&A activity in the industry also related (and still does) to the demographic need for owner succession due to retiring baby boomers.

In 2019 and beyond, we expect to see buyers be more cautious with their acquisition activity. Not that the activity will cease, but firms will probably be more selective about where they place their bets given where we are in the current economic cycle, and because many buyers are still integrating the companies they acquired during the past few years.

Along with traditional mergers and acquisitions, we're also seeing increased interest in employee stock ownership plans (ESOPs) as an alternative exit strategy to selling an E&C business. This change in sentiment tells us that, as more owners evaluate their options, the tax-advantaged value creation afforded by the ESOP can be a great choice for many E&C companies grappling with ownership transitions.

And then there's all the buzz around construction tech startups that are set to transform the E&C space. Over the last decade, more than $10 billion has been allocated to funding construction technology. Most of that money came through early-stage venture capital deals. Brick & Mortar Ventures, for example, was among the first venture investors focused exclusively on early stage A/E/C technology firms and has made over 22 investments to date.

As construction technology companies mature, larger acquirers are stepping in and making full (or at least majority) acquisitions. These acquisitions are being driven by both strategic and financial (e.g., private equity) acquirers. For example, strategic acquirers are making significant construction tech investments for various key reasons, including talent acquisition. Leveraging acquisitions to acquire and build talent can be a very efficient alternative to internal hiring and development practices. Trimble's $1.2 billion acquisition of Viewpoint, for instance, gave the former a leading construction management solution and a team of over 700 experienced individuals capable of driving future business growth.

While many of today's construction tech startups may be in growth mode right now, E&C is an unpredictable sector. So, where venture capital firms may be involved with it during the "boom" times, the real test comes when E&C startups must ***maintain growth*** during a downturn. That's where the rubber meets the road, and it's a scenario we could all be experiencing sometime in the next 12 to 24 months.

> *How have you managed your downturns in the past? What did they look like? What choices did you make? What did you get right? What did you get wrong? Or what actions did you fail to take soon enough? These are the types of questions that leaders should be asking themselves today.*
>
> **Chris Daum, CEO**
> **FMI Corporation**

Preparing for the Next Downturn: Lessons Learned From the Great Recession

The E&C industry has endured seismic shifts during the past decade and is still going strong in 2019.

Rumblings about a recession on the horizon are starting to make company leaders a bit nervous, but many are just too busy keeping up with current work to start thinking about contingency planning. In fact, the constrained labor situation, coupled with material increases, compressed project schedules and ongoing margin compression, are all creating more risk for E&C firms today—and right when we find ourselves at the top of the market. As we like to say, "Contractors don't starve to death; they die from gluttony. They get too much work, too fast, with inadequate resources, and then they get into financial trouble and run out of cash."

Now is the time to get proactive with conversations and planning around lessons learned from the last downturn and "recession-proof" your company. While the last recession was historic in scale and duration, the next downturn will likely look very different. Still, through good preparation, companies can take the lessons they (or their predecessors) learned from the last recession and use them to avoid repeating any costly mistakes. Following are seven key lessons from FMI's senior consultants and directors that all E&C firms can learn from:

1. **Don't wait too long to make any hard decisions you have been deferring.** This might be a marginal performer you've been keeping, an underperforming office or division that has been limping along, or anything else you've been unwilling to pull the trigger on. During the last recession, these types of issues plagued E&C companies for far too long. Leadership that is slow to react and respond can make or break a company.

2. **Find your own sweet spot and don't just follow the herd.** Be picky and don't chase every project or every owner. Know what your core competencies are and with whom you like to work. Also, don't just be a market follower, especially if you are trailing behind others in markets where your company has little or no expertise. If you're following the crowd, you're going to be a year behind the latest movements.

3. **Work on the new, envisioned future and set the strategy for post-recession success.** Be clear on organizational purpose and values during this exercise; they will be tested. Many of today's leaders are in constant firefighting mode and not focusing on the big picture. Living in a reactive mode and not being proactive and taking charge of shaping your own destiny and future can become your biggest detriments.

4. **Get a grasp on "incremental economics" like revenue, margin and overhead.** A good business doesn't turn on its head in a bad market. A competitive landscape has transformed standard estimating procedures into a game of marksmanship. Understanding the total costs for each project and how these costs break down is the first step in knowing where and how you can improve profit margins. Too many E&C firms lack true knowledge of what it costs them to both do and pursue work. In a recession, the ability to produce as inexpensively as possible is the key differentiator. If you know your costs for any specific scope of work (i.e., historical costs), you can proactively reduce or raise your prices according to market conditions.

5. **Maintain a healthy balance sheet (i.e., cash and working capital) in the context of growth plans.** Conduct a risk analysis on all existing projects slated to complete more than six months out. Identify high-risk projects and how each will be staffed to take to project completion. Leverage and utilize a multiskilled workforce: In-house, self-perform capabilities can mean a difference on margins, time and manpower, while all-around adaptability can make a firm indispensable to satisfied clients.

6. **Get positioned in your market (and in the heads of your clients)—early.** The game of selling work and interacting with clients has changed quite a bit for many E&C companies. These days, early plans allow for the most flexibility. Look particularly close at segments that are likely to do well in a recession. Are you winning the size and type of work that will allow you to quickly expand in the event of a market change? Do you truly understand your clients' mindsets? Do you get their way of thinking and what's important to them? While client relationships won't guarantee you work, they do still matter and are critical when the market slows down.

7. **Get more feet on the street.** It's time to give sellers/doers the skills they need to be confident calling on customers. Have them build a list of contacts that they want to keep in touch with. Then, create a training program to educate your people on "how to behave in a recession"—estimators with project selection, field managers with scope management, PMs with cash management, etc. Client interaction across all company levels will increase your presence with clients, give you an inside track and improve collaboration among future leaders.

Back in the Great Recession, contractors had large backlogs in the fall of 2008, and many thought they would weather the storm. In reality, almost all that backlog disappeared relatively quickly. First, it was deferred, then it was postponed, and then poof—it was gone. It may not happen that way next time, but history could repeat itself. Much work today is being delayed, with schedules constantly being slowed—perhaps this is a precursor to the next slowdown. This is a red flag to keep a close eye on as we move further into 2019.

Back to the Basics

Instead of grasping for straws once the downturn hits, FMI tells companies to go back to the basics and focus on building the best organization possible now. Make sure you have:

- Great disciplines around communication, feedback and planning.
- Great people who can embrace the organization, negotiate well and understand what the owners want.
- The right support structures and systems.
- The right financial mechanisms in place.
- The right technology to support your company's vision and strategies.

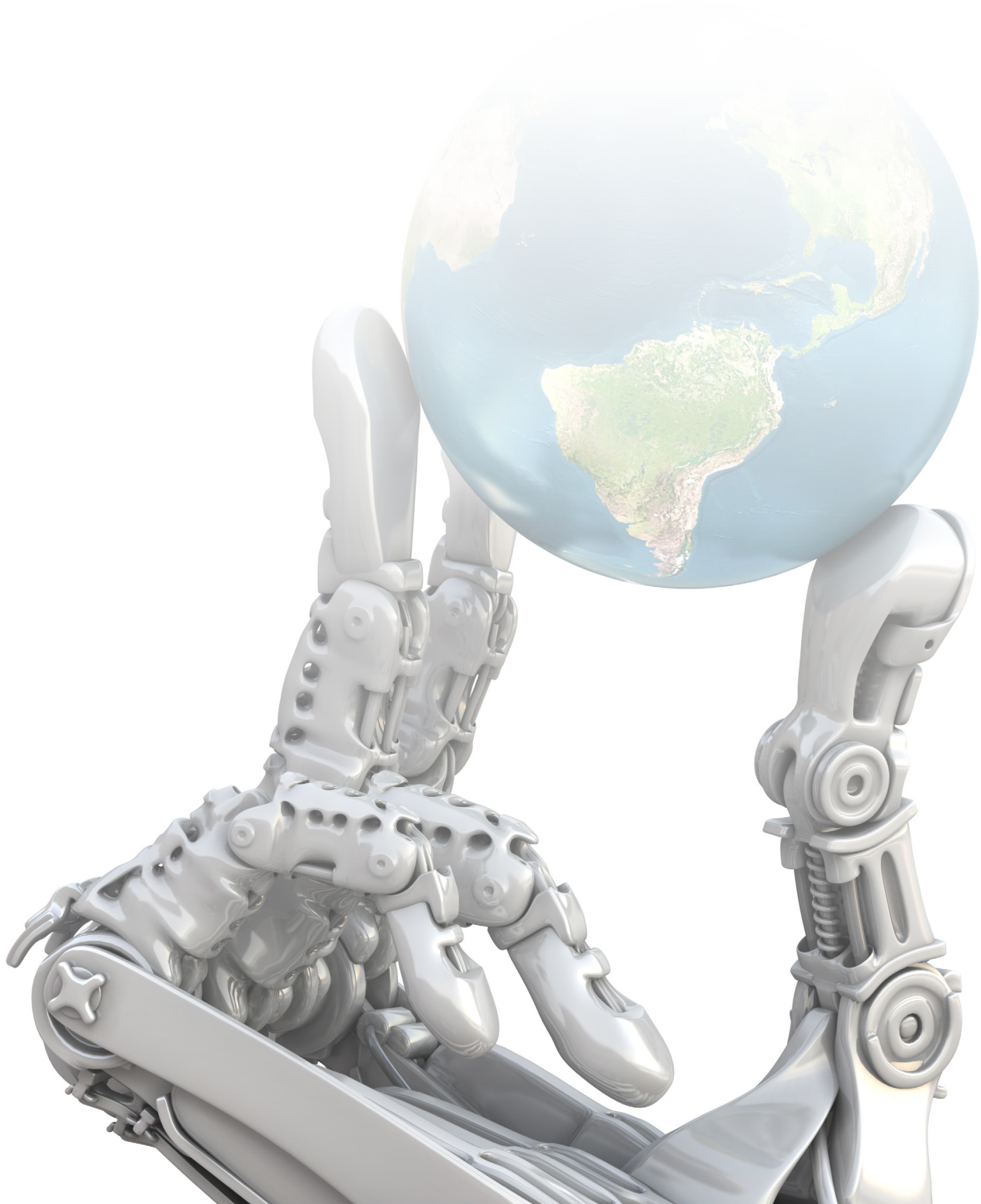
As the industry continues to climb toward the market peak, this is also the time to unabashedly build out your equity base. That way, when you transition into the next downturn, you'll have the cash resources to do whatever it takes to survive (even if that's "no work" because the money's not there). Skip this step and you'll wind up overextended going into the slowdown; that's where companies historically run into trouble.

Here are six more "back to the basics" strategies that E&C companies can use to offset the negative impacts of the next recession:

1. Extrapolate clarity of purpose in your values and the goals/milestones that are in front of you.
2. Use data analysis to evaluate these goals against the current context of what's going on in your business.
3. Be an agile and flexible leader.
4. Explore the market itself, your peers and other benchmark industries and business builders that you feel that you can learn from.
5. Be intellectually curious and use your mental flexibility and intuition to come up with new, creative business ideas.
6. Have a plan in place for your key talent. What people do you need to have on your team 10 years from now in order to sustain the business for the next 30 years?

Right now, the market is still relatively good; you still have options. All E&C firms should be picking opportunities that allow them to succeed, or to at least know that they have a trail of work in place as they head for the next downturn. The market leaders will be the ones who really understand the markets and who know where construction is headed, while the chase group that doesn't understand and/or care may get crushed.

> *Despite challenges associated with managing and implementing big data processes, companies that don't embrace the new norm of data-driven operations could lose traction in the market and become obsolete in the near future.*
>
> **Jay Snyder, Technology Practice Leader**
> **FMI Consulting**



Evolving Your Business in a Digital World

We're producing more data than ever—roughly 2.5 quintillion bytes of data every day.

With so much data being created and the use of data analytics starting to gain traction in the E&C industry, understanding what big data is and how your organization can leverage it to improve business processes is becoming an increasingly critical aspect of doing business—and a key differentiator.

However, using big data effectively requires the right talent, tools and processes, and presents unique challenges for E&C companies. In fact, many of today's organizations are either unprepared for or overwhelmed by the magnitude of information. Understanding which data can be useful and how it translates into business intelligence, for example, requires strategic planning and a clear understanding of your organization's overall goals and vision.

This is no easy task and takes time, money and focus. For some E&C firms, current organizational processes simply can't accommodate advancements in data analytics. In an industry that is known for being behind the technology adaptation curve, some firms struggle with frontline managers and field staff who often don't understand how to implement analytical procedures. This can often make it difficult to get companywide participation in new data-driven processes, effectively slowing down the benefits of analytical tools within an organization.

Like it or not, however, all of today's E&C companies are in the data business and need to adapt to the fast-changing business environment. Particularly in light of a slowing economy further down the road, companies must have a deep understanding of their businesses and operations. Without these insights, E&C firms can't uncover underlying challenges and/or situations that can impact overall performance. Using data analytics, companies can turn that tide, monitor different key performance indicators (KPIs) and make good forward-looking decisions in real time.

Businesses that fail to identify and fix potential issues will be at a disadvantage in a down cycle. By deploying emerging technologies and implementing and learning about advanced tools and resources, E&C companies can gain real advantage, enhance performance and stay ahead of the curve.

Controlling Your Own Destiny in Murky Times

Dynamic and inherently risky businesses, E&C firms succeed and fail for various reasons.

Over the years, FMI has found that company failures can often be traced back to several different risk factors. While many E&C firms that go out of business point to external factors as the primary culprits for those failures, we see many examples of companies that succeeded despite the same difficult external forces being present while others failed.

In one of our flagship research studies, "Why Contractors Fail," for example, many seasoned industry executives emphatically rejected the notion that luck or other extraneous forces were responsible for their companies' decline. With signs pointing to a possible economic slowdown in the not-too-distant future, it's a good time to revisit the five root causes of contractor failure—all of which can be mitigated and controlled:

1. **Poor strategic leadership.** Strong leadership can serve as a cornerstone for success in even the most difficult market conditions. For example, many companies experience financial difficulty when ownership changes hands from one generation to the next (a process that is taking place across many of today's E&C firms). To ensure successful ownership transfer and management succession, owners need to prove that the company can grow and succeed without them.

   The only way to do this is by having successors who are capable and willing to lead. At that point, the question becomes, can the next generation carry the business forward. Firms get into trouble here, regardless of whether they are family-owned or not. Companies that lack a clear vision, purpose and a fact-based strategy often find themselves with no set direction. Under poor strategic leadership, people begin making bad decisions (i.e., selecting the wrong projects, hiring the wrong employees, putting the wrong systems in place and so forth), and before the company's leadership knows it's happening, the firm can find itself on the path to failure.

2. **Excessive ego.** Extremely confident and often unwilling to listen to the opinions and suggestions of others, the leader with an excessive ego can literally take down the entire company. To be a successful contractor, you must have self-confidence and a high tolerance for risk. Contractors also must possess a high degree of optimism, but avoid carrying that optimism and risk tolerance to the extreme—a scenario that can lead to bad business decisions and ultimately company failure. There are many examples of construction firms that have run into financial problems due to the leader's hubris and perception of being invincible. Sometimes this is referred to as "driving the business off a cliff at 100 mph"—self-destruction at its worst.

3. **Too much change.** When too many things happen too quickly, it's easy to get overwhelmed and thrown off course. Any company can absorb some level of change, but there's a limit to what most organizations can handle at any given time. To avoid driving too much change in the organization and managing risk more effectively, companies should make a list of everything that's new, including customers, projects, geographical targets, superintendents, project managers, systems, etc.—to fully understand the speed of change the organization is experiencing. The more changes on the list, the higher the risk of failure. Therefore, it is critical to manage the rate of change on an ongoing basis, particularly in anticipation of a market slowdown.

4. **Loss of discipline.** Successful E&C firms tend to be extremely well-disciplined in all areas of their businesses. Most companies that experienced failure grew from small, regional operations into national powerhouses (e.g., J.A. Jones, Guy F. Atkinson, etc.). Along the way, these firms almost universally lost their internal business discipline, became overall bureaucratic and moved outside of their core competencies. On the other hand, there are a few world-class E&C firms that operate with an incredible amount of discipline. They do the same thing the same way, every day and everywhere that they operate. This discipline is baked into the company's culture, permeates the organization and endures for generations.

5. **Inadequate capitalization.** Construction projects have upside limits on the level of profit that you can earn, but the amount of money you can lose is unlimited. The difference between a good year and a great year or a bad year and a catastrophic year can be boiled down to just one or two jobs. Sometimes people will ask us, "How much money should I keep in my construction company?" And we always answer this question by asking, "How much money can you lose on a single construction job?" And when you think about this, the answer is, "All you've got." Overcoming this failure factor requires an adequate capital base that allows you to withstand inevitable problems and live to fight another day. Building a robust equity base will also help you weather a downturn more easily.

Looking ahead and given all the indicators in today's global economic environment, E&C firms should be cautious and remain vigilant with respect to cash flow management, balance sheet health, operational discipline, rate of change and people. At this point, no one knows when the next recession will hit, but one thing is clear: It will arrive at some point. And when it does, you want to be ready and in control of your own destiny, not the victim of fate.

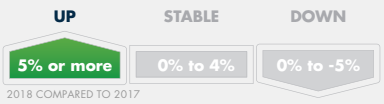
> *"The risk in remaining solely focused on the short term is that the industry will likely look and operate very differently in 10 years than it does today, and firms may find themselves on the outside looking in if they fail to study external trends and adapt their business models and approaches."*
>
> **Scott Winstead, President**
> **FMI Consulting**

The 2019 U.S. Construction Outlook

Key Takeaways

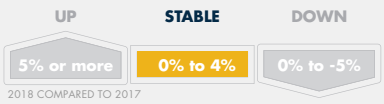
- Total engineering and construction spending for the U.S. is forecast to end up 5 percent higher in 2018 compared to 2017.

2018 Construction Segment Performance



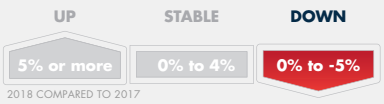
Up

- Improvements
- Lodging
- Office
- Educational
- Public Safety
- Amusement and Recreation
- Transportation
- Highway and Street
- Sewage and Waste Disposal
- Water Supply
- Conservation and Development



Stable

- Single-family
- Multifamily
- Commercial
- Health Care
- Communication
- Manufacturing
- Power



Down

- Religious

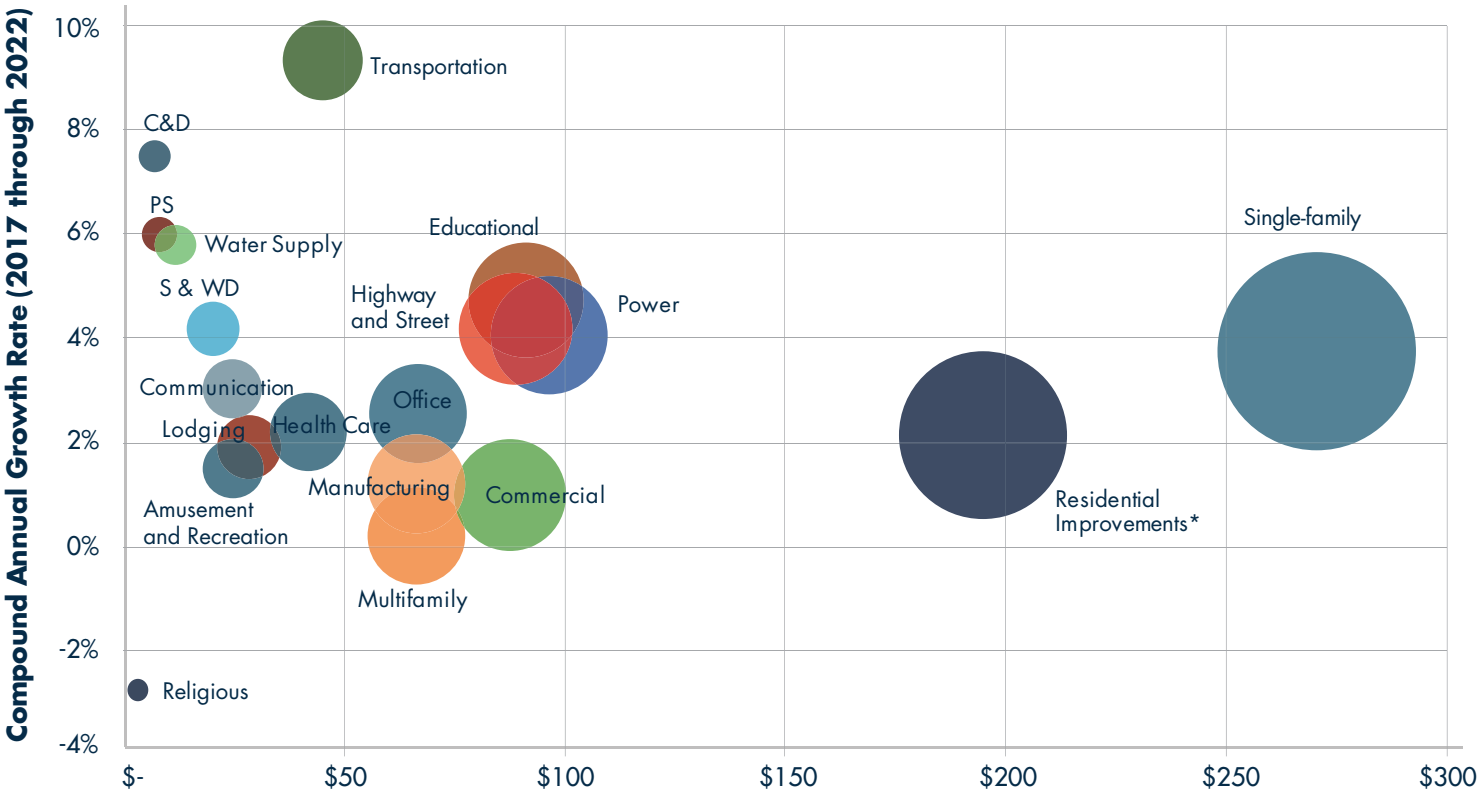
- Spending growth in 2018 has been predominantly led by transportation and select private nonresidential segments. The top-three-performing segments in 2018 include nonresidential transportation (+16 percent), lodging (+14 percent) and office (+11 percent). The bottom-three-performing segments include religious (-2 percent), multifamily residential (+1 percent) and health care (+1 percent).

- Looking ahead to 2019, FMI forecasts a 3 percent increase in spending levels over 2018.

- Primary growth segments in 2019 are expected to include office, educational, public safety, transportation, conservation and development, and manufacturing – all with forecast growth rates of 5 percent or more. Most other segments will likely grow by roughly the rate of inflation and therefore be considered stable. Multifamily, lodging and religious are three segments expected to experience decline through 2019.

- East and West Coast markets are expected to outperform other regions across the country. Through 2019, FMI forecasts the top-three-performing Census divisions will include the Middle Atlantic (+5 percent), Pacific (+5 percent) and the South Atlantic (+4 percent).

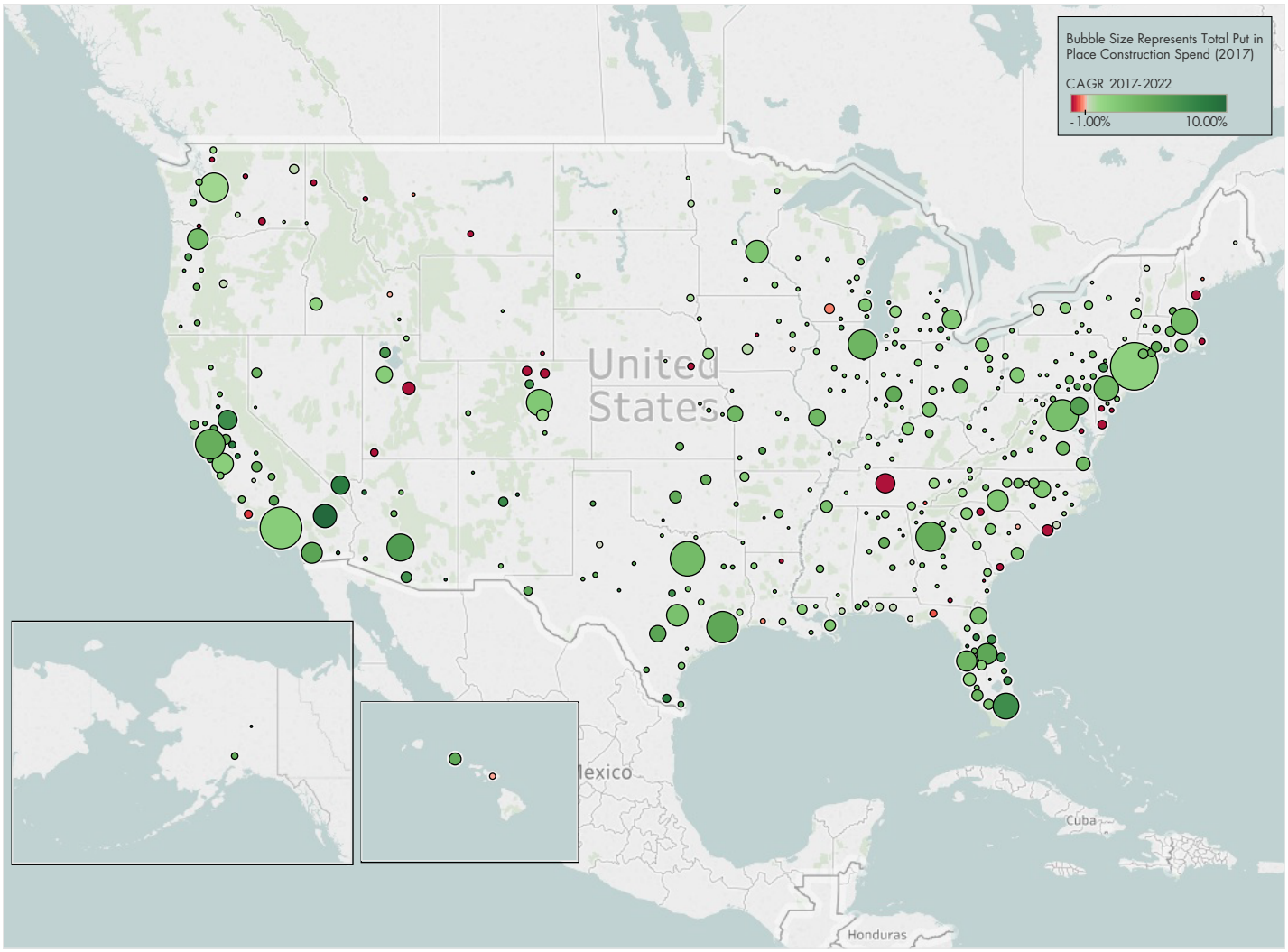
Total Construction Spending Put in Place 2017 and Forecast Growth (2017-2022 CAGR) by Construction Segment



* Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

Source: U.S. Census and FMI Forecast

Total Construction Spending Put in Place 2017 and Forecast Growth (2017-2022 CAGR) by Metropolitan Statistical Area



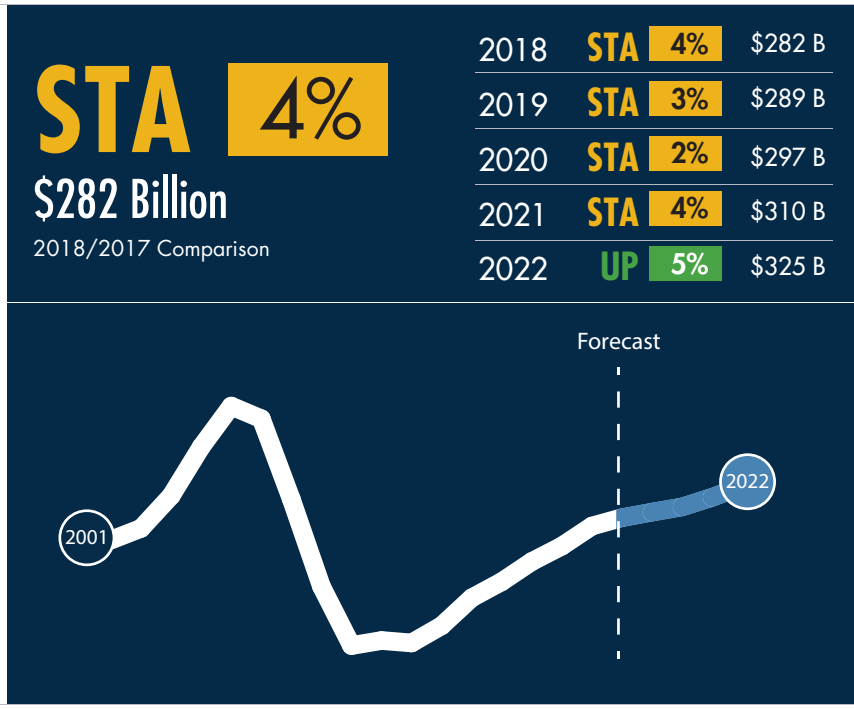
Source: FMI Forecast

Residential Construction Put in Place

Single-Family

- While 2018 has been a boon to single-family housing, particularly aided by the rise in employment and the modest rise in average income, 2019 will likely see this trend slow as increases in prices as well as mortgage rates are keeping a growing number of buyers from committing to new purchases.
- Millennials, the youngest buyer group, generally have been postponing large economic decisions until later in life. Also, among millennials, first-time buyers strongly prefer suburban living.

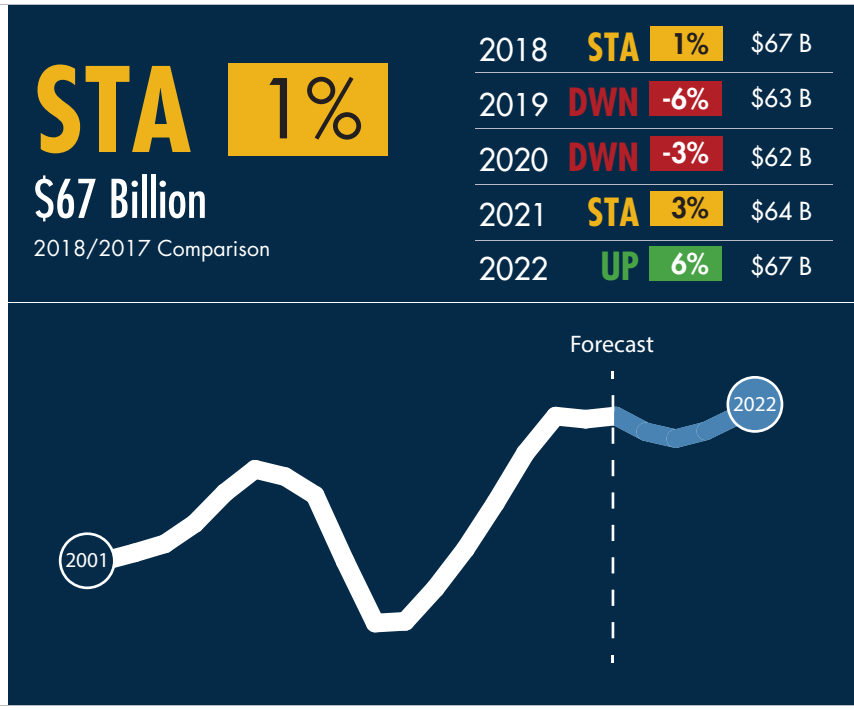
Drivers: unemployment rate, core CPI, income, mortgage rate, home prices, housing starts, housing permits



Multifamily

- U.S. multifamily construction has plateaued toward the end of 2018, with declining investment expected through 2019 and 2020. Though somewhat tied to expected diminishing economic growth, this trend will vary regionally. Going into 2019, as an increasing number of markets recognize oversupply, rents are expected to decline and starts will taper.
- Recent tax legislation disincentivizing homeownership, rising mortgage rates, millennial buying preferences and practices, and a growing need for affordable housing will continue to uphold multifamily demand long-term. Additionally, on a regional basis, large campus projects planned by Amazon, Microsoft, Apple, Google and other large organizations will continue to stimulate spending.

Drivers: unemployment rate, core CPI, income, mortgage rate, home prices, housing starts, housing permits

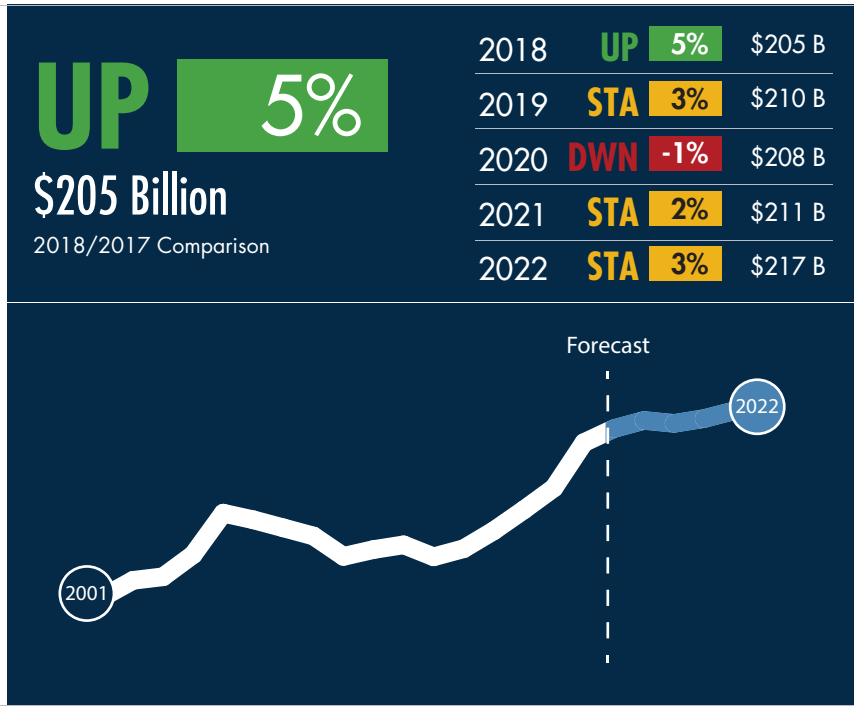


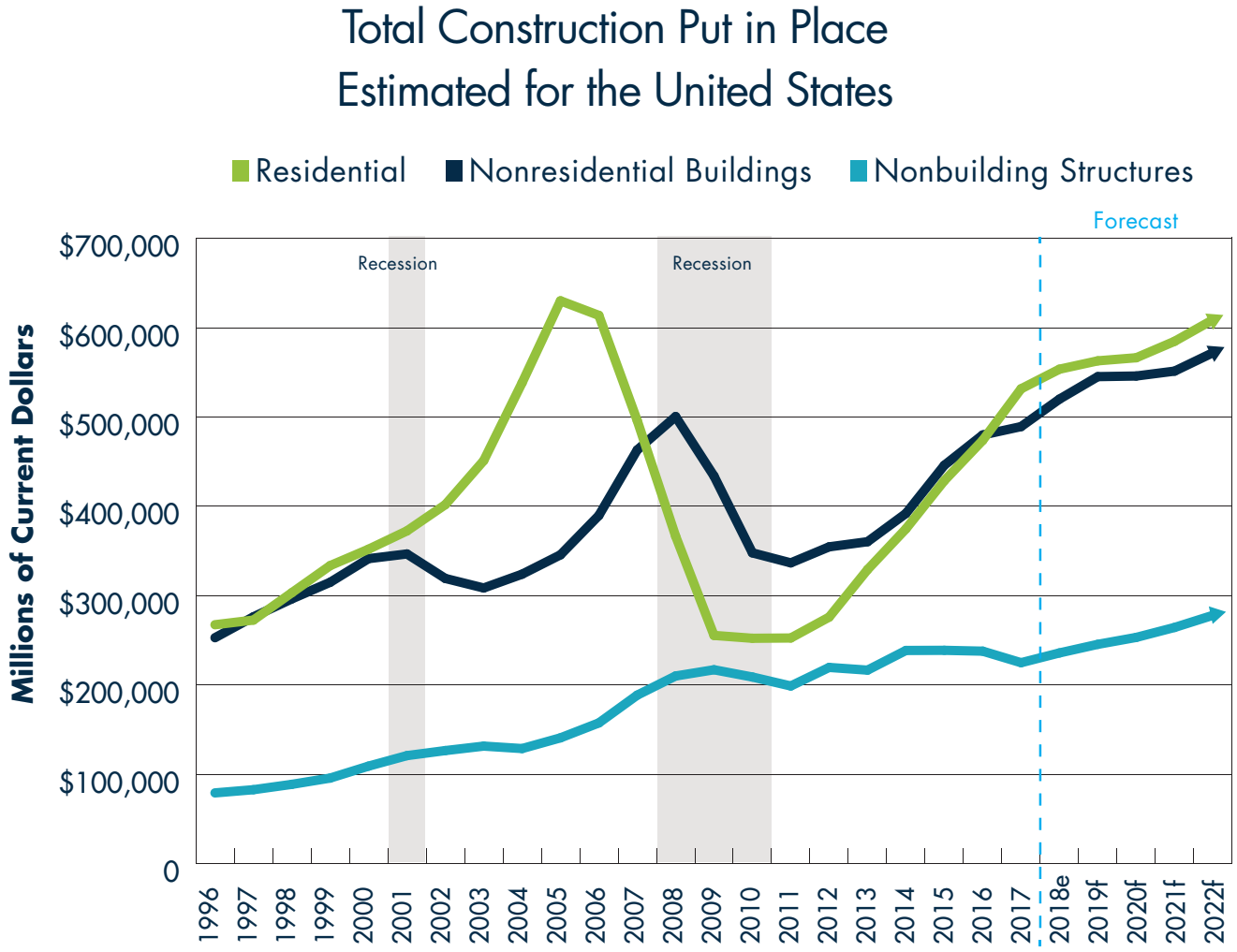
Improvements

- Moving activity is expected to decline in 2019 from 2018. Additionally, home values are expected to plateau within the next 18-24 months, suggesting improvements may experience decline in the years following.

- Tight labor, rising project costs and expected dampened economic growth will encourage many homeowners to postpone nonessential improvements. However, concurrently, the relative age and value of the home carries opposing influence in many of those same spending decisions.

Drivers: unemployment rate, core CPI, income, mortgage rate, home prices, housing starts, housing permits





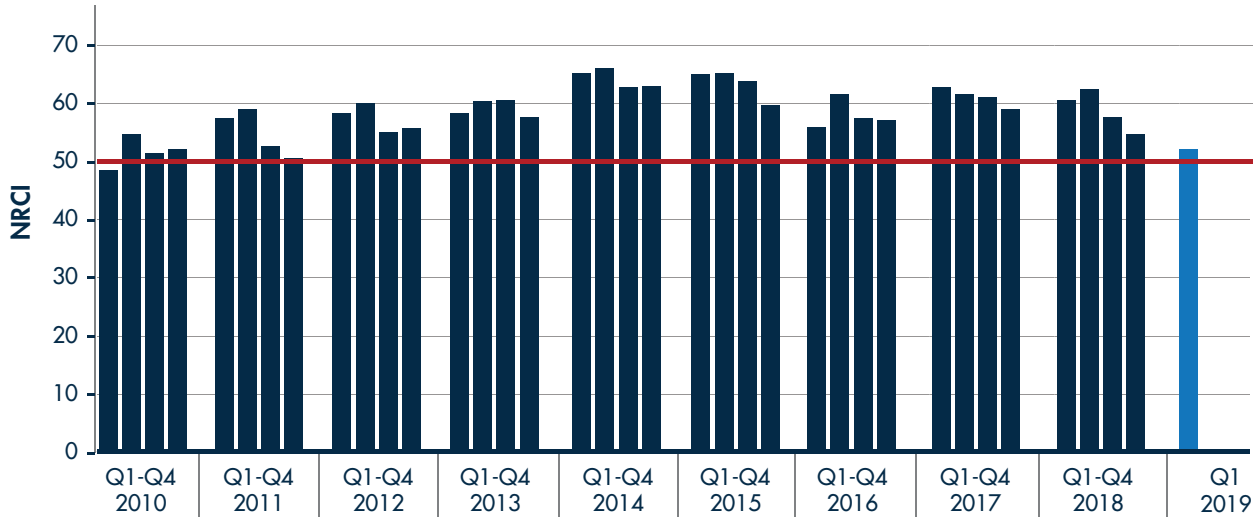
Source: U.S. Census and FMI Forecast

Nonresidential Buildings Construction Put in Place

Nonresidential Construction Index (NRCI)

NRCI scores are based on a diffusion index where scores above 50 represent improving or expanding industry conditions, a score of 50 represents conditions remaining the same, and a score below 50 represents worse conditions than last quarter (or contraction).

Current NRCI Reading for **Q1 2019**	52.1
Previous Reading	54.6



The data in the NRCI is presented as a sampling of construction industry executives voluntarily serving as panelists for this FMI survey. Responses are based on their experience and opinions, and the analysis is based on FMI's interpretation of the aggregated results.

Lodging

- Lodging construction has had strong momentum in 2018, owing to a persistent economic expansion period which has boosted corporate earnings, both business and leisure travel, alongside investments in amusement and convention center spending.
- Occupancy rates are near the strongest point within the past decade.
- Though occupancy rates and revenue per available room (RevPAR) have steadily improved during the past few years, rising construction costs and large projects coming online will have an adverse impact on owners' continued willingness to expand in 2019. Additionally, legislative efforts that have recently spurred casino spending nationwide will generate fewer project opportunities.

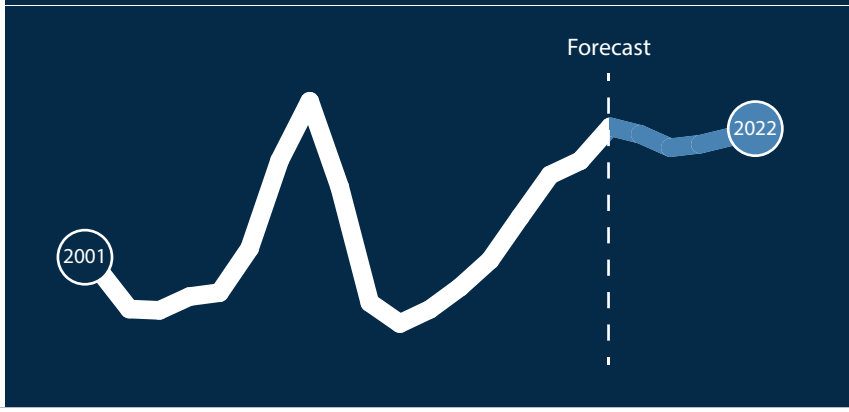
Drivers: occupancy rate, RevPAR, average daily rate, room starts

UP 14%

$33 Billion

2018/2017 Comparison

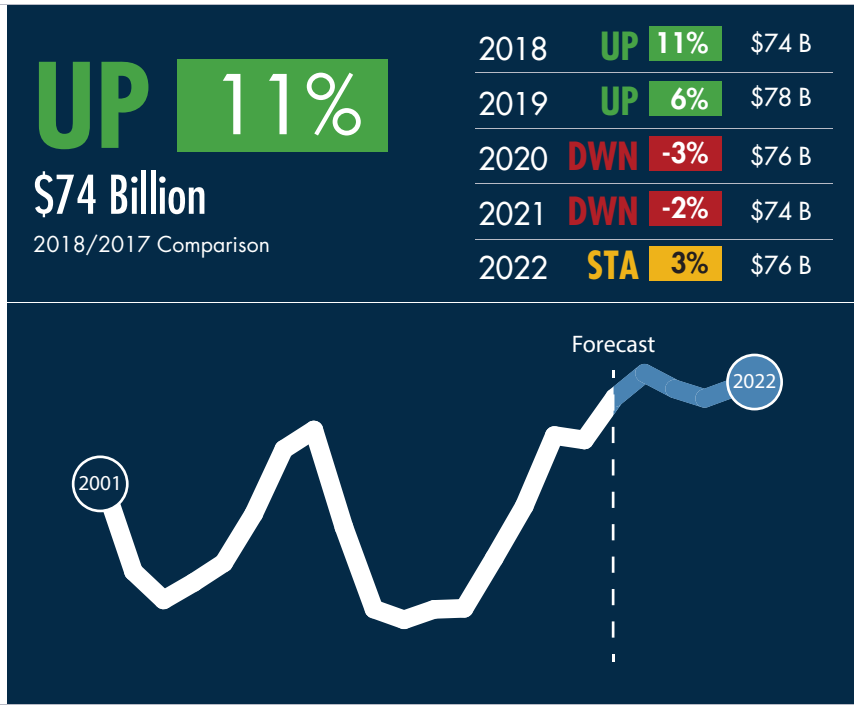
2018	UP	14%	$33 B
2019	DWN	-3%	$32 B
2020	DWN	-5%	$30 B
2021	STA	1%	$30 B
2022	STA	3%	$32 B



Office

- Moving into 2019, demand for office space continues to outpace current supply in select markets. However, notwithstanding large projects planned by Amazon, Apple, Google and other corporate giants, FMI anticipates some contraction beginning in 2020.
- Office vacancy rates have made modest declines each quarter since the end of 2017, with the highest concentration of construction activity located in larger urban metro areas. While urban office construction activity has been stable through the end of 2018, suburban and rural area project activity has progressively slowed.
- While data center investment growth continues strong, increasing lease costs, particularly in downtown metro areas, and the growing trend of hoteling and remote work flexibility are contributing to slowing traditional office investment.

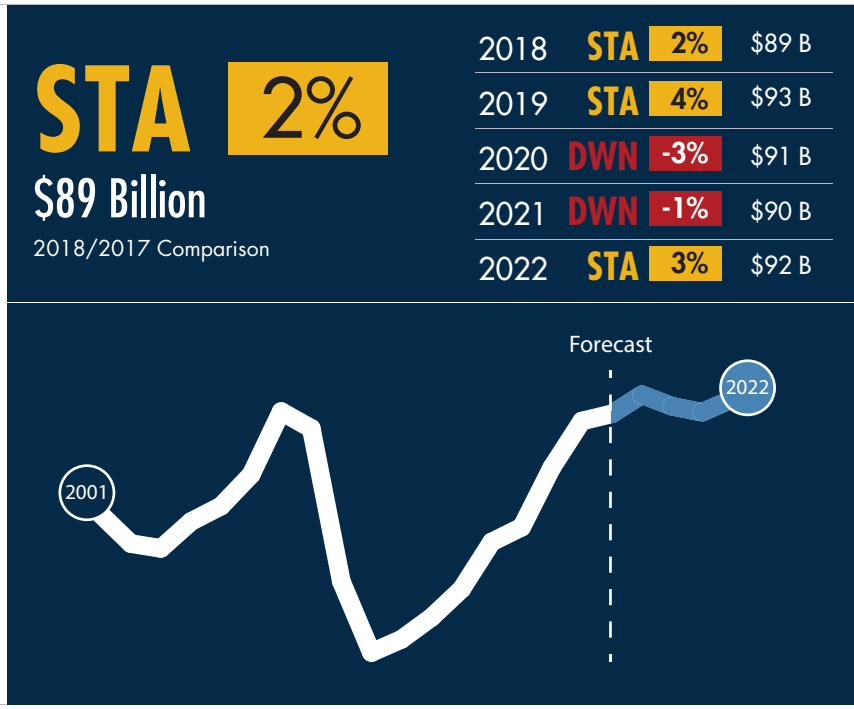
Drivers: office vacancy rate, unemployment rate



Commercial

- Storefront infrastructure, including shopping centers and malls, will continue to moderate through 2019, while investment in warehouse and distribution logistics centers will continue to expand.
- The shift from brick-and-mortar space to e-commerce has significantly augmented the capital investment focus of large retailers. One example, Walmart, the nation's largest retailer, has recently announced late 2018 slowing expenditures on new store locations and redirecting resources toward alterations of established space and its warehousing and distribution channels.

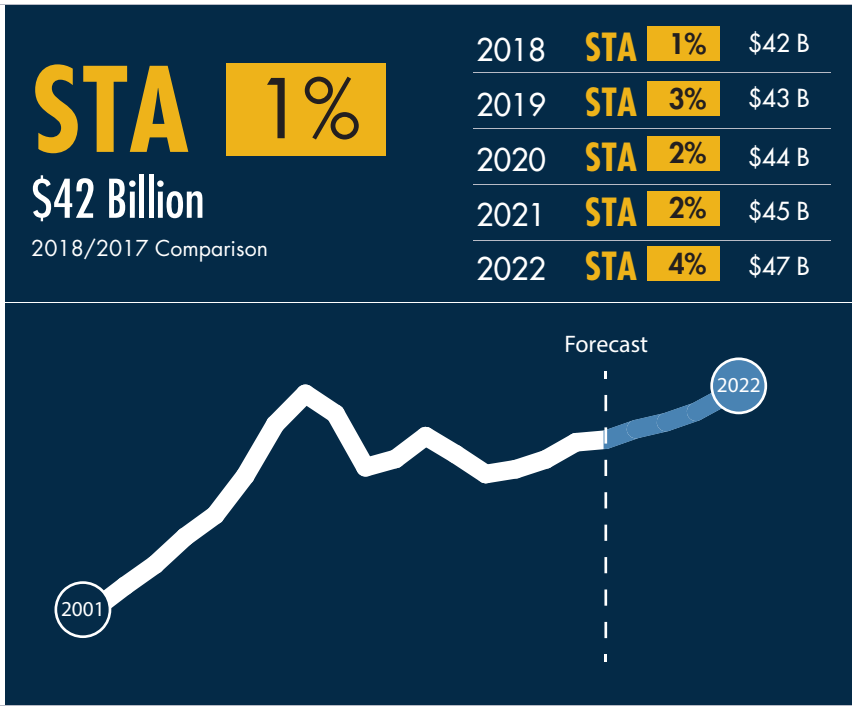
Drivers: retail sales, CPI, income, home prices, housing starts, housing prices



Health Care

- The U.S. Census expects that by 2034, people 65 and older, for the first time ever, will outnumber those under the age of 18. Also, by 2030, Medicare enrollments are expected to increase nearly 50 percent.
- Demographic shifts indicate a need for more medical office space. Increased modular construction within health care is anticipated as the means to streamline projects and reduce project costs.
- Telehealth, wearable health technologies and artificial intelligence are all considered technological breakthroughs in the industry. Each of these advancements has the potential to temper a growing need for traditional health care facilities. Similarly, data management and cybersecurity are increasing concerns.

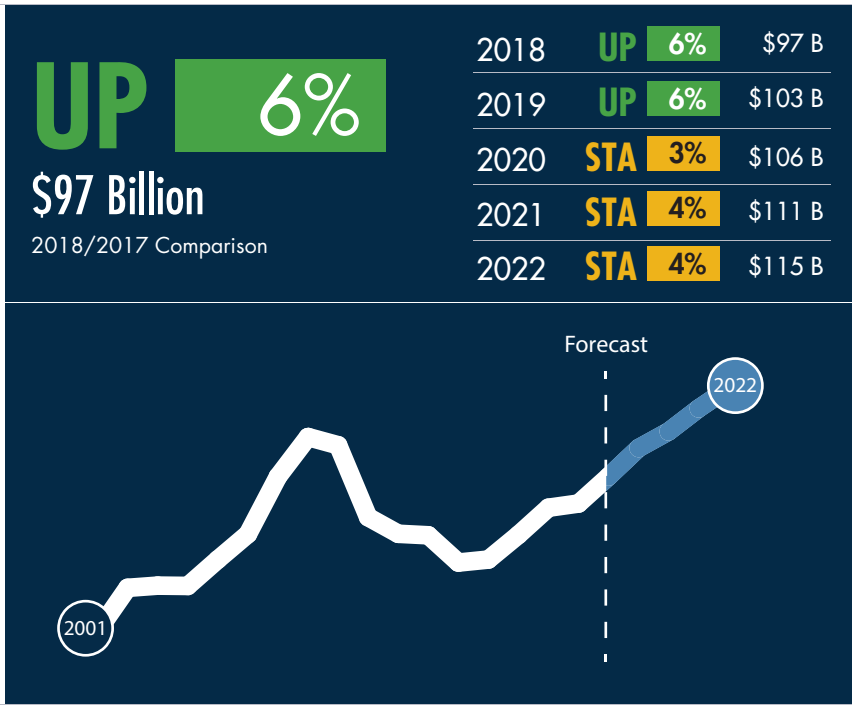
Drivers: population change, population change in ages 75 and up, uninsured population, government spending, nonresidential structure investment



Educational

- Educational enrollments are expected to grow at an increasing rate over the forecast period, both in K-12 and in higher education sectors, driven by demographics and an increased popularity in master's programs. Endowments continue to increase despite implications from the 2017 tax restructure.
- Within higher education, tuition revenue growth in private schools (led by larger comprehensives) is expected to nearly double the revenue growth seen at public institutions.
- A recent Perkins Eastman study suggests K-12 modernization projects offer the greatest impact on a student's ability to learn and the faculty's ability to teach. Also, more than half of U.S. K-12 public schools need renovation or modernization investment at an estimated cost of nearly $200 billion.

Drivers: population change younger than age 18, population change ages 18-24, stock markets, government spending, nonresidential structure investment

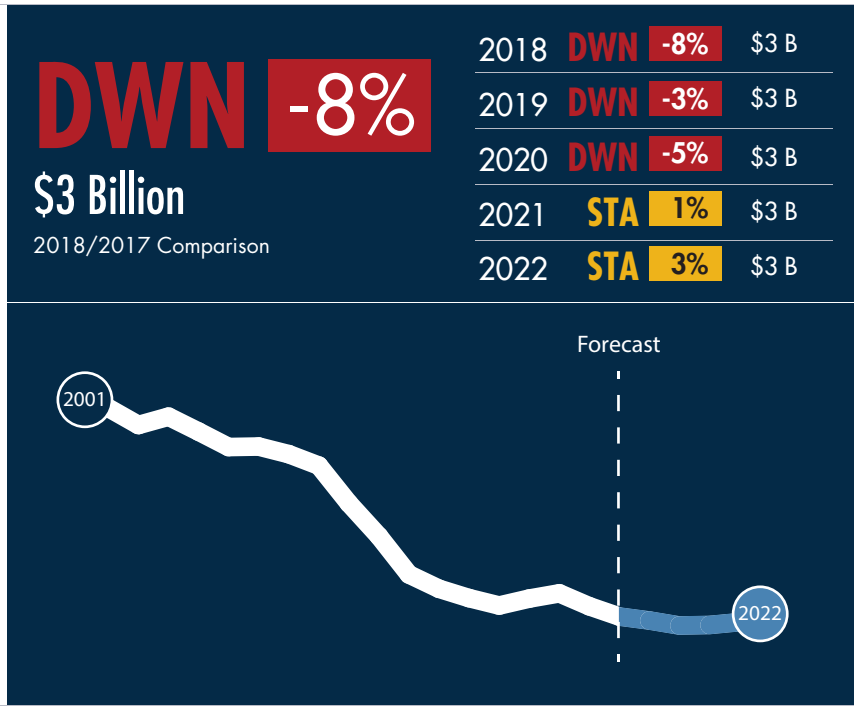


Religious

- Declining attendance frequency, especially among active members, is the predominant driver of declining religious construction investment. Very few large-scale, single-site projects are expected over the forecast period. However, several large land-holding religious owners have begun renovating and expanding facilities to address affordable housing needs.

- Design trends continue to favor smaller multisite local facilities over larger single-site alternatives. Also, religious facilities are increasingly designed with more gathering spaces and family appeal (e.g., cafes and children's play areas) along with increased investment in audio/video technology.

Drivers: GDP, population, income, personal savings

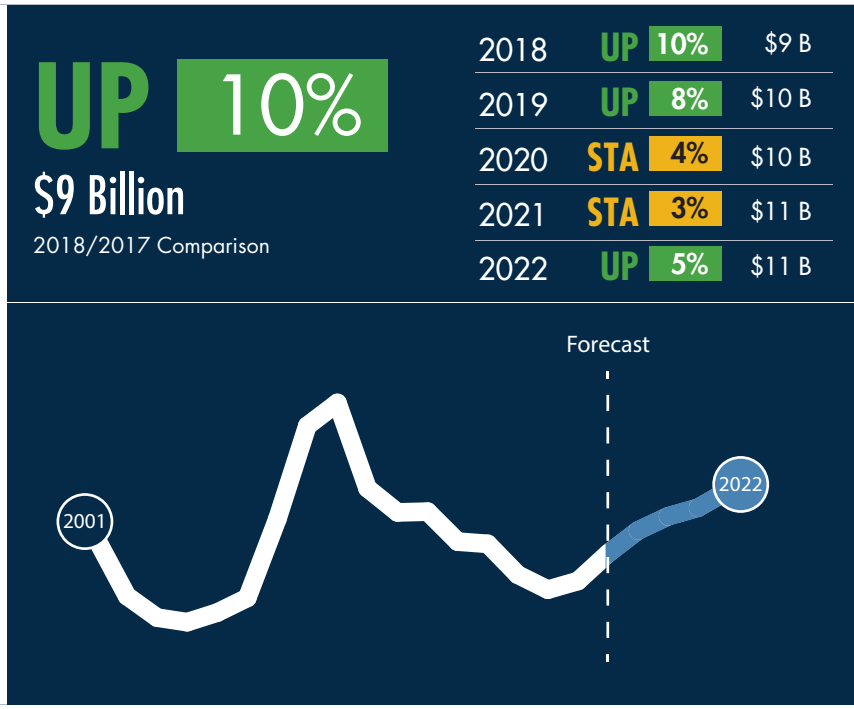


Public Safety

- In recent years, alongside strengthening economic conditions, both states and municipal governments are experiencing growing revenues and increasing construction budgets. Much of this growth is led by expanding metropolitans that require additional emergency and correctional resources.

- Though local governments are now smaller than they were a decade ago, continued fiscal constraints, tied to ever-increasing pension and Medicaid needs, continue to weigh heavily on capital programs.

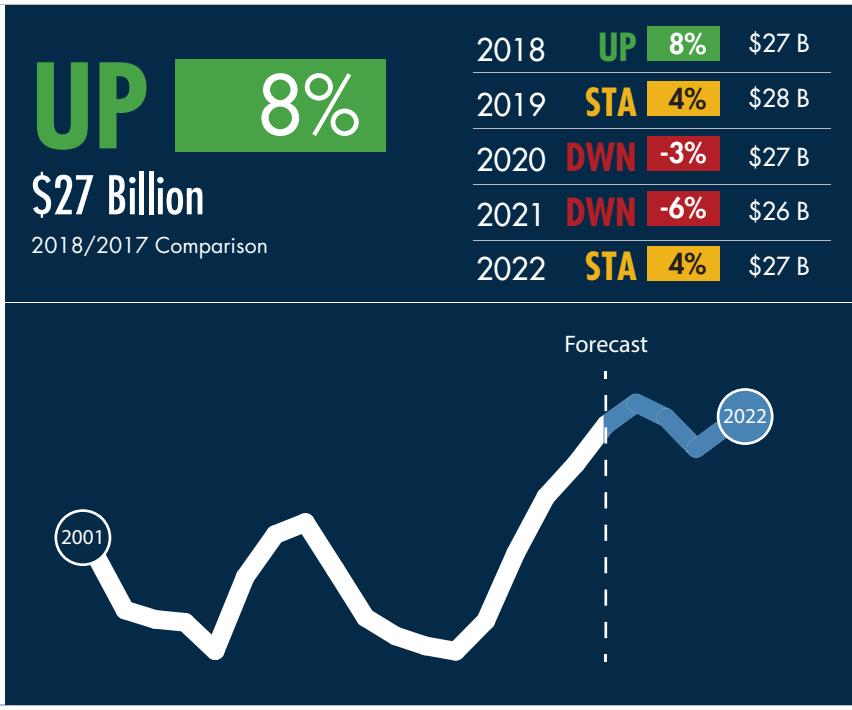
Drivers: population, government spending, incarceration rate, nonresidential structure investment



Amusement and Recreation

- Several big-budget stadiums, arenas and amusement parks have been active through 2018, with several more expecting to break ground in 2019. Continued and increased investment is anticipated through 2019.
- Casino construction is expected to plateau and ultimately slow in the coming years, considering most states have now legalized gambling.

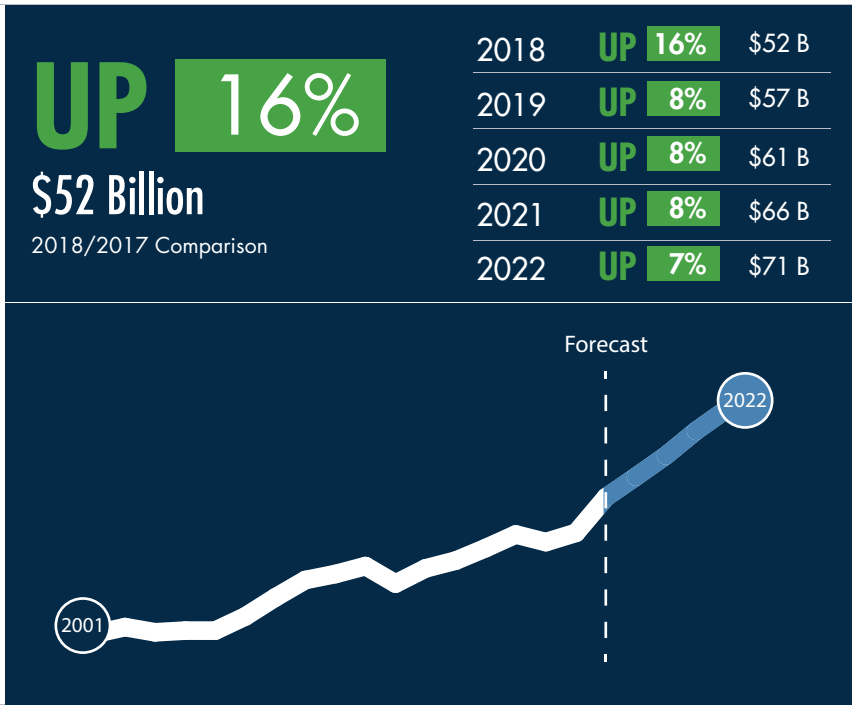
Drivers: income, personal savings rate, unemployment rate, employment



Transportation

- Large airports all over the country are refocusing capital programs on the redesign of terminals and their amenities. In doing so they are essentially becoming the next-generation shopping malls with expansive retail offerings, fitness and wellness centers, private work booths, children's play areas, lounges and short-term sleep/rest areas.
- Though several mega transit projects are expected to break ground in 2019, growing demand for new infrastructure and system maintenance along with increasing construction costs, is outweighing and outpacing growth in funding sources. Political uncertainty is also expected to weigh on the transportation sector over the next several years.

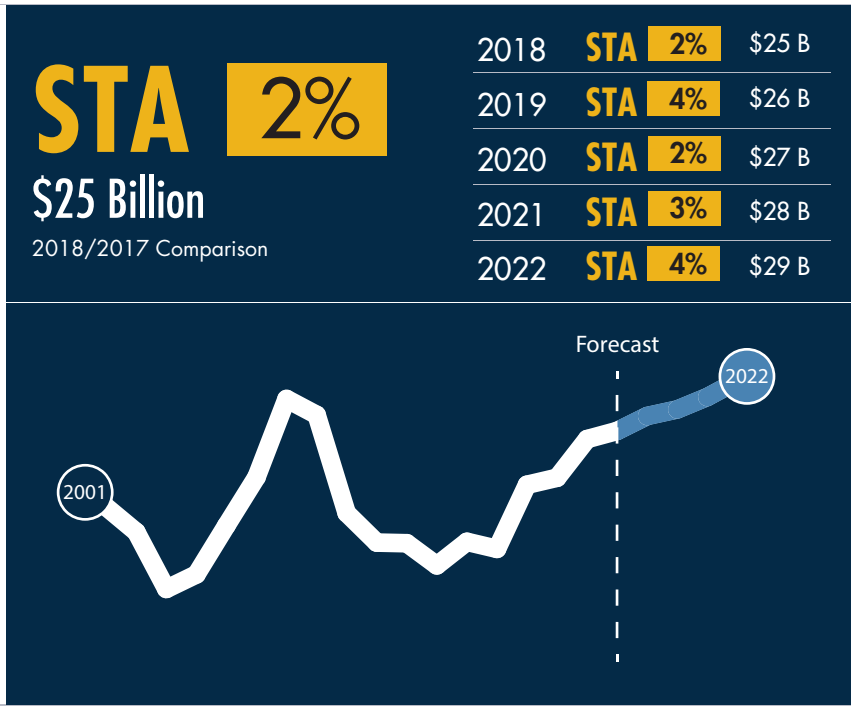
Drivers: population, government spending, transportation funding



Communication

- Fourth-generation (4G) technology has plateaued, and the build-out of 5G infrastructure is just beginning. Rather than relying on cell towers, 5G uses many low-powered cells. Total estimated infrastructure costs are just under $300 billion, and experts believe connectivity will be mainstream by 2025.
- Alongside 5G infrastructure needs, aggressive fiber rollout plans (including deep fiber) are expected over the coming years in response to explosive traffic growth. Operators need more capacity and better coverage than ever. AT&T, as one example, has set goals to increase its network capacity by 50% by the end of 2019.

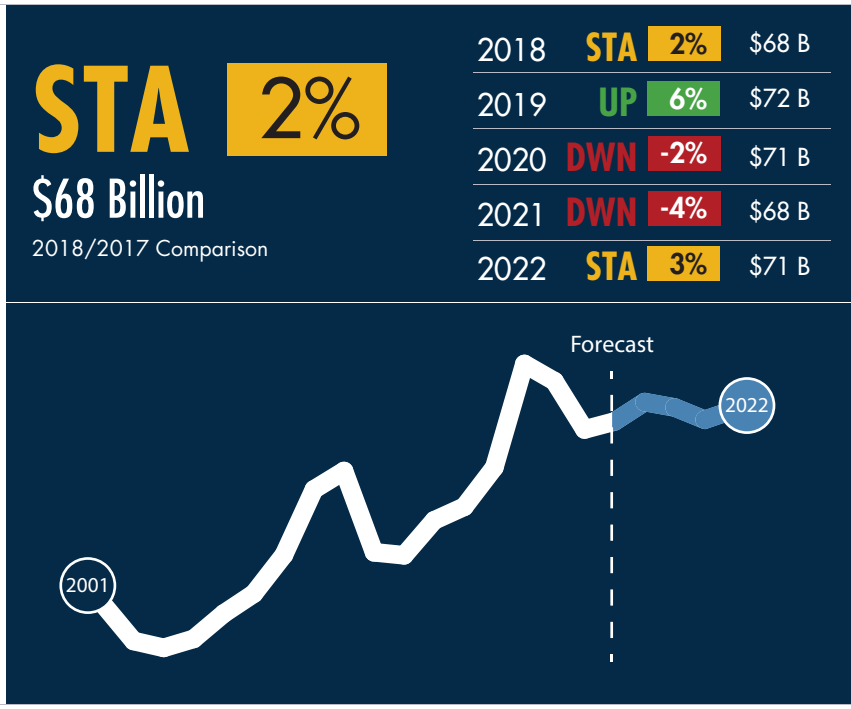
Drivers: population, security/regulation standards, private investment, innovation/technology investment



Manufacturing

- 2017's tax reform, which brought down the U.S. corporate tax rate (from 35 percent to 21 percent) and encourages repatriation of revenues to the U.S., is expected to continue fueling a rise in manufacturing plant investment. However, the impacts on expansion are likely to subside in the coming years.
- Tariffs on Chinese imports, as well as retaliatory tariffs on American goods, continue to generate uncertainty. One-third of plant owners recently reported re-evaluating their capital plans as a result of the tariffs and trade disputes.
- Increased volatility in manufacturing construction is expected if the Trump administration maintains the use of tariffs as a strategic initiative.

Drivers: PMI, industrial production, capacity utilization, durable goods orders, manufacturing inventories

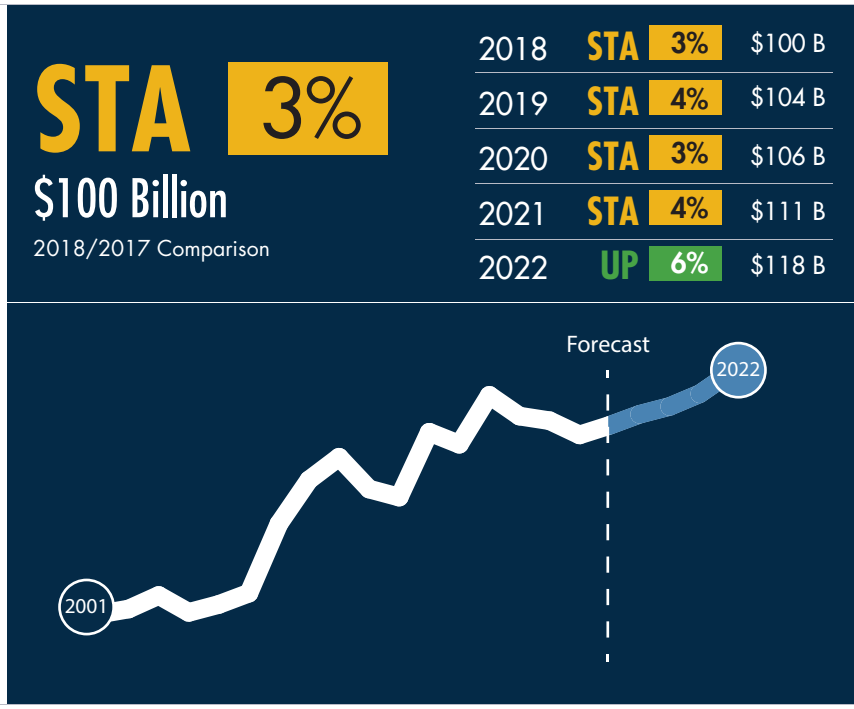


Nonbuilding Structures Construction Put in Place

Power

- Electric and gas transmission and distribution projects are expected to continue to drive growth in the power segment as a result of increased renovation and safety requirements alongside a steady shift to natural gas and renewable generation sources.
- 2019 will see modest growth in generation construction, with several recent large project starts. Tariffs on foreign-made solar panels are not likely to significantly hold back solar generation construction.

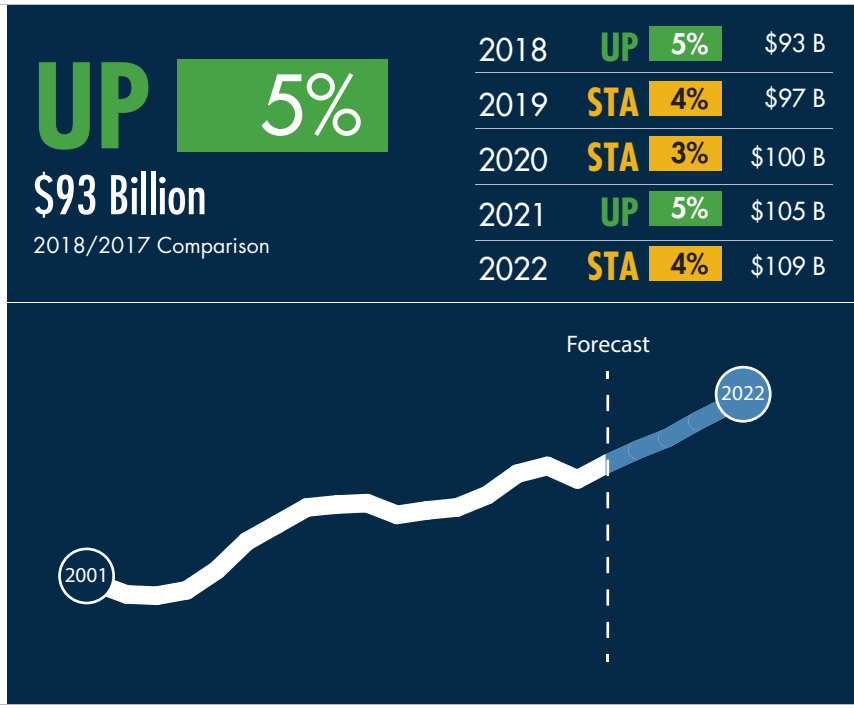
Drivers: population, industrial production, government spending



Highway and Street

- State budgets have seen growth in recent years and are expected to increase by approximately 3 percent overall in 2019. Similarly, since 2012, 31 states have now passed legislation to boost highway and street funding.
- Though prospects for passage of a large federal infrastructure package remain elusive, Congress is successfully boosting spend through other means. The 2018 federal omnibus spending package (March) included an additional $3.5 billion for highway projects, representing an 8% increase over 2017 investment levels. Much of this construction spending is expected to occur in 2019.

Drivers: population, government spending, nonresidential structure investment



Sewage and Waste Disposal

- The EPA's Clean Water State Revolving Fund has appropriated an additional $300 million in the 2018 federal omnibus spending package. This funding increase, in addition to growing state and local budgets, is likely to drive modest growth over the forecast period.
- Compliance with federal wastewater and stormwater regulations is becoming increasingly costly. One result is a growing portion of expenses being redirected into operations and maintenance rather than new projects.

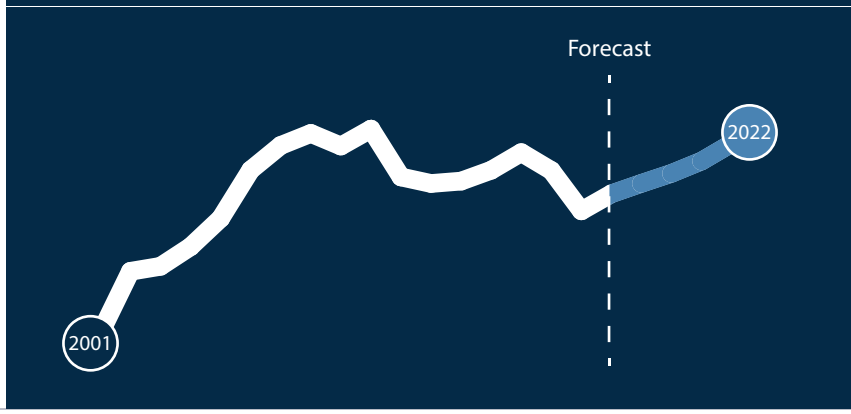
Drivers: population, industrial production, government spending

UP 6%

$22 Billion

2018/2017 Comparison

2018	UP	6%	$22 B
2019	STA	3%	$22 B
2020	STA	3%	$23 B
2021	STA	4%	$24 B
2022	UP	5%	$25 B



Water Supply

- The 2018 federal omnibus spending package provided an additional $300 million for the EPA's Drinking Water State Revolving Fund. Also, the Army Corps of Engineers saw a nearly $790 million increase in its civil works program. These funding increases are expected to support increased spending through the forecast period, particularly in 2019.
- Long-term spending is likely to grow with increasing pipeline replacement needs. Much of the nation's million-mile drinking water pipeline system was installed in the mid-20th century and has a life span of approximately 75 years.

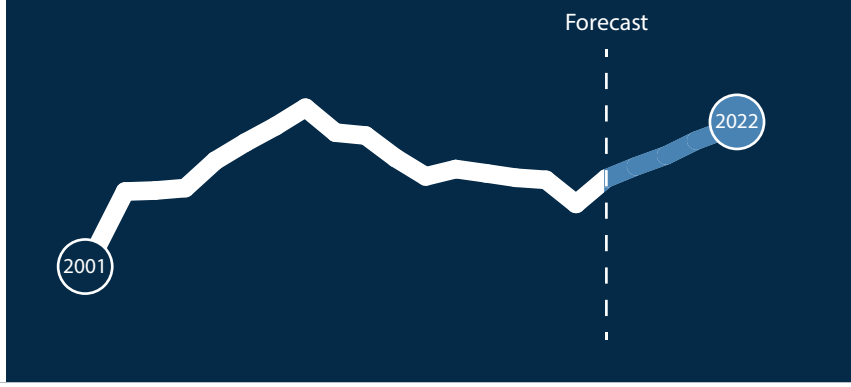
Drivers: population, industrial production, government spending

UP 11%

$13 Billion

2018/2017 Comparison

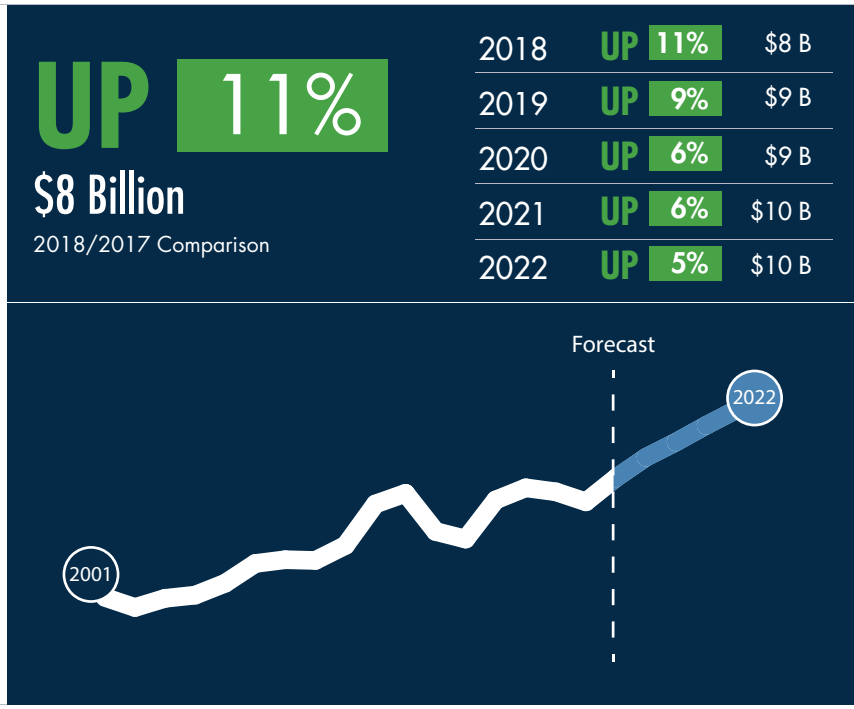
2018	UP	11%	$13 B
2019	UP	5%	$14 B
2020	STA	4%	$14 B
2021	UP	5%	$15 B
2022	STA	4%	$16 B



Conservation and Development

- Resurgence of the U.S. petrochemical industry is expected to lead to increased environmental quality concerns and spending (e.g., riparian buffers, ecosystem restorations).
- Hurricane cleanup efforts in Texas and Florida continue from 2017 while Florence and Michael will further support cleanup spending activity through 2020.
- The Trump administration is seeking to redirect federal investment into military programs at the expense of other civil engineering programs. The administration's efforts could weigh on future federal funding levels.

Drivers: population, government spending



Construction Put in Place Estimated for the United States

Millions of Current Dollars

4th Quarter 2018 Forecast (based on Q3 2018 Actuals)

	2013	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f
RESIDENTIAL BUILDINGS										
Single-family	171,837	194,091	221,680	242,938	270,338	281,857	289,473	296,608	309,820	325,125
Multifamily	35,169	46,250	58,228	67,084	66,354	67,125	63,322	61,682	63,532	67,055
Improvements*	122,210	134,519	148,854	163,911	194,965	204,627	210,190	208,150	211,485	216,837
Total Residential Buildings	**329,217**	**374,860**	**428,762**	**473,933**	**531,657**	**553,609**	**562,984**	**566,440**	**584,837**	**609,018**
NONRESIDENTIAL BUILDINGS										
Lodging	13,484	16,738	21,908	26,969	28,672	32,744	31,845	30,236	30,663	31,539
Office	37,979	46,582	55,521	67,616	66,850	74,096	78,307	75,606	73,980	75,867
Commercial	53,159	62,841	65,899	78,151	87,733	89,225	93,163	90,782	89,552	92,231
Health Care	40,689	38,647	39,147	40,157	41,916	42,186	43,270	43,989	45,060	46,740
Education	79,060	79,681	84,771	90,348	91,213	96,780	102,640	106,057	110,801	114,994
Religious	3,590	3,386	3,577	3,721	3,366	3,083	2,975	2,837	2,853	2,931
Public Safety	9,506	9,437	8,484	8,023	8,290	9,139	9,850	10,288	10,553	11,086
Amusement and Recreation	15,207	16,773	20,258	23,155	24,851	26,863	27,980	27,229	25,641	26,780
Transportation	39,459	42,043	44,843	43,274	45,173	52,495	56,754	61,113	66,182	70,573
Communication	17,783	17,298	21,696	22,178	24,831	25,390	26,415	26,865	27,719	28,827
Manufacturing	50,548	58,648	79,930	76,380	66,448	68,091	72,091	70,977	68,461	70,564
Total Nonresidential Buildings	**360,464**	**392,074**	**446,034**	**479,972**	**489,343**	**520,093**	**545,291**	**545,979**	**551,463**	**572,130**
NONBUILDING STRUCTURES										
Power	93,317	110,089	102,972	101,389	96,513	99,794	103,602	106,295	110,640	117,723
Highway and Street	81,364	84,743	90,626	92,738	89,053	93,411	97,171	100,450	105,105	109,298
Sewage and Waste Disposal	22,425	23,173	24,380	23,149	20,386	21,556	22,272	22,959	23,803	25,010
Water Supply	13,597	13,380	13,150	13,042	11,806	13,111	13,742	14,302	15,065	15,643
Conservation and Development	5,967	7,310	7,726	7,588	7,244	8,067	8,774	9,296	9,867	10,401
Total Nonbuilding Structures	**216,670**	**238,695**	**238,854**	**237,906**	**225,002**	**235,938**	**245,561**	**253,302**	**264,479**	**278,076**
Total Construction Put in Place	**$906,351**	**$1,005,629**	**$1,113,650**	**$1,191,811**	**$1,246,002**	**$1,309,641**	**$1,353,836**	**$1,365,721**	**$1,400,779**	**$1,459,223**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

Construction Put in Place Estimated for the United States

Change From Prior Year - Current Dollar Basis

4th Quarter 2018 Forecast (based on Q3 2018 Actuals)

	2013	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f
RESIDENTIAL BUILDINGS										
Single-family	29%	13%	14%	10%	11%	4%	3%	2%	4%	5%
Multifamily	37%	32%	26%	15%	-1%	1%	-6%	-3%	3%	6%
Improvements*	5%	10%	11%	10%	19%	5%	3%	-1%	2%	3%
Total Residential Buildings	**19%**	**14%**	**14%**	**11%**	**12%**	**4%**	**2%**	**1%**	**3%**	**4%**
NONRESIDENTIAL BUILDINGS										
Lodging	24%	24%	31%	23%	6%	14%	-3%	-5%	1%	3%
Office	0%	23%	19%	22%	-1%	11%	6%	-3%	-2%	3%
Commercial	12%	18%	5%	19%	12%	2%	4%	-3%	-1%	3%
Health Care	-4%	-5%	1%	3%	4%	1%	3%	2%	2%	4%
Education	-7%	1%	6%	7%	1%	6%	6%	3%	4%	4%
Religious	-7%	-6%	6%	4%	-10%	-8%	-3%	-5%	1%	3%
Public Safety	-9%	-1%	-10%	-5%	3%	10%	8%	4%	3%	5%
Amusement and Recreation	-2%	10%	21%	14%	7%	8%	4%	-3%	-6%	4%
Transportation	4%	7%	7%	-3%	4%	16%	8%	8%	8%	7%
Communication	10%	-3%	25%	2%	12%	2%	4%	2%	3%	4%
Manufacturing	6%	16%	36%	-4%	-13%	2%	6%	-2%	-4%	3%
Total Nonresidential Buildings	**2%**	**9%**	**14%**	**8%**	**2%**	**6%**	**5%**	**0%**	**1%**	**4%**
NONBUILDING STRUCTURES										
Power	-4%	18%	-6%	-2%	-5%	3%	4%	3%	4%	6%
Highway and Street	1%	4%	7%	2%	-4%	5%	4%	3%	5%	4%
Sewage and Waste Disposal	1%	3%	5%	-5%	-12%	6%	3%	3%	4%	5%
Water Supply	3%	-2%	-2%	-1%	-9%	11%	5%	4%	5%	4%
Conservation and Development	-4%	23%	6%	-2%	-5%	11%	9%	6%	6%	5%
Total Nonbuilding Structures	**-1%**	**10%**	**0%**	**0%**	**-5%**	**5%**	**4%**	**3%**	**4%**	**5%**
Total Construction Put in Place	**7%**	**11%**	**11%**	**7%**	**5%**	**5%**	**3%**	**1%**	**3%**	**4%**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

Regional Summary

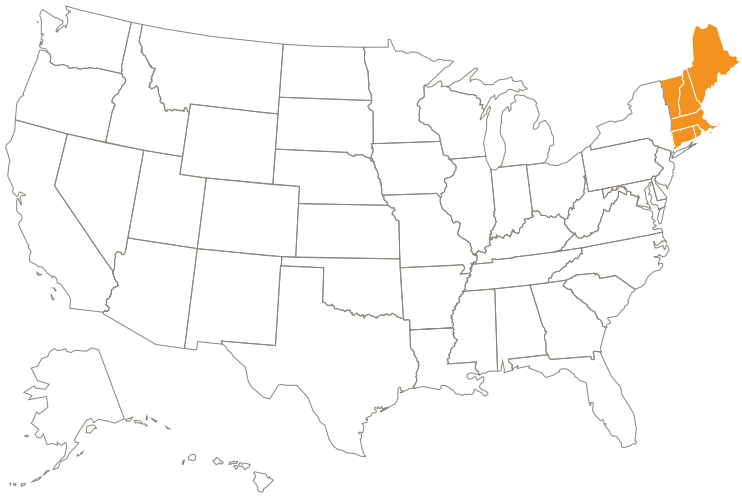
Through 2019, as seen in our regional forecasts below, East and West Coast markets are expected to generally outperform other regions of the country. Overall, FMI expects the top-three-performing Census divisions will include the Middle Atlantic (+5 percent), Pacific (+5 percent) and the South Atlantic (+4 percent) states.

- Anticipated top Census Divisions for residential spending in 2018 include Pacific (+3 percent), South Atlantic (+3 percent) and East North Central (+2 percent) states.
- Anticipated top Census Divisions for nonresidential building spending in 2018 include Middle Atlantic (+7 percent), West North Central (+7 percent) and Pacific (+6 percent) states.
- Anticipated top Census Divisions for nonbuilding structures spending in 2018 include Pacific (+7 percent), West South Central (+5 percent) and South Atlantic (+4 percent) states.

U.S. Construction Put in Place

Regional Forecast Summary (Millions of Current Dollars)

	Year	Residential	Nonresidential Buildings	Nonbuilding Structures	Total Construction Put in Place	Projected Growth 2018-2019
Northeast	**New England**					
	2018e	19,993	26,221	6,443	52,657	**3.3%**
	2019f	20,333	27,398	6,665	54,396	
	Mid-Atlantic					
	2018e	54,267	77,094	22,266	153,628	**5.0%**
	2019f	55,438	82,669	23,187	161,295	
Midwest	**East North Central**					
	2018e	29,100	66,610	25,578	121,288	**2.0%**
	2019f	29,728	67,876	26,109	123,713	
	West North Central					
	2018e	63,048	43,749	20,737	127,535	**1.7%**
	2019f	61,808	46,694	21,205	129,708	
South	**South Atlantic**					
	2018e	125,763	78,377	44,694	248,834	**3.7%**
	2019f	128,854	82,477	46,588	257,919	
	East South Central					
	2018e	17,064	21,274	10,810	49,147	**3.3%**
	2019f	17,176	22,388	11,187	50,750	
	West South Central					
	2018e	52,296	91,523	53,697	197,516	**3.3%**
	2019f	53,327	94,307	56,427	204,060	
West	**Mountain**					
	2018e	58,684	34,772	21,062	114,517	**1.6%**
	2019f	58,420	36,434	21,452	116,306	
	Pacific					
	2018e	133,395	80,473	30,651	244,518	**4.6%**
	2019f	137,902	85,047	32,741	255,690	
U.S.	**Total United States**					
	2018e	**$553,609**	**$520,093**	**$235,938**	**$1,309,641**	**3.4%**
	2019f	**$562,984**	**$545,291**	**$245,561**	**$1,353,836**	



New England Construction Put in Place

Millions of Current Dollars
4th Quarter 2018 Forecast, Based on 3rd Quarter 2018 Actuals

	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f	Change From Prior Year 2017	2018e	2019f
RESIDENTIAL BUILDINGS												
Single-family	6,504	7,324	8,483	9,447	9,906	10,250	10,381	10,811	11,264	11%	5%	3%
Multifamily	1,593	2,133	2,255	2,404	2,473	2,124	1,940	2,060	2,320	7%	3%	-14%
Improvements*	4,571	4,933	5,146	6,932	7,614	7,959	7,781	7,730	8,056	35%	10%	5%
Total Residential	**12,668**	**14,390**	**15,884**	**18,783**	**19,993**	**20,333**	**20,101**	**20,601**	**21,639**	**18%**	**6%**	**2%**
NONRESIDENTIAL BUILDINGS												
Lodging	865	1,154	1,300	1,671	2,019	1,714	1,278	1,266	1,333	29%	21%	-15%
Office	2,408	2,924	3,268	3,178	3,689	4,129	3,823	3,700	3,934	-3%	16%	12%
Commercial	3,248	3,470	3,823	4,674	4,502	4,688	4,453	4,409	4,717	22%	-4%	4%
Health Care	1,997	2,062	1,989	2,222	2,187	2,346	2,345	2,365	2,482	12%	-2%	7%
Educational	4,118	4,464	4,385	4,640	4,654	4,953	5,057	5,294	5,537	6%	0%	6%
Religious	175	188	188	179	153	148	142	143	148	-5%	-15%	-3%
Public Safety	488	447	388	418	441	491	547	578	619	8%	5%	11%
Amusement and Recreation	867	1,067	1,142	1,292	1,432	1,359	1,158	1,049	1,112	13%	11%	-5%
Transportation	2,173	2,361	2,081	2,285	2,755	2,987	3,203	3,655	3,976	10%	21%	8%
Communication	894	1,143	1,073	1,320	1,235	1,279	1,274	1,303	1,360	23%	-6%	4%
Manufacturing	3,031	4,209	3,717	3,293	3,154	3,304	2,987	2,928	3,245	-11%	-4%	5%
Total Nonresidential Buildings	**20,264**	**23,488**	**23,353**	**25,173**	**26,221**	**27,398**	**26,266**	**26,689**	**28,462**	**8%**	**4%**	**4%**
NONBUILDING STRUCTURES												
Power	3,422	3,129	2,909	2,774	2,558	2,672	2,729	2,927	3,206	-5%	-8%	4%
Highway and Street	2,698	2,919	2,858	2,805	2,707	2,807	2,888	3,010	3,124	-2%	-3%	4%
Sewage and Waste Disposal	728	761	697	632	598	595	612	629	664	-9%	-5%	0%
Water Supply	416	400	390	368	362	364	385	412	430	-6%	-2%	1%
Conservation and Development	227	235	216	218	218	226	242	258	273	1%	0%	4%
Total Nonbuilding Structures	**7,491**	**7,442**	**7,070**	**6,798**	**6,443**	**6,665**	**6,856**	**7,237**	**7,696**	**-4%**	**-5%**	**3%**
Total Construction Put in Place	**$40,424**	**$45,321**	**$46,308**	**$50,754**	**$52,657**	**$54,396**	**$53,223**	**$54,527**	**$57,797**	**10%**	**4%**	**3%**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

Middle Atlantic Construction Put in Place

Millions of Current Dollars

4th Quarter 2018 Forecast, Based on 3rd Quarter 2018 Actuals

	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f	Change From Prior Year 2017	2018e	2019f
RESIDENTIAL BUILDINGS												
Single-family	19,192	24,206	25,765	27,389	28,225	28,770	28,559	29,236	29,708	6%	3%	2%
Multifamily	4,700	7,051	6,382	6,621	6,023	5,587	5,541	5,628	6,039	4%	-9%	-7%
Improvements*	14,846	17,942	16,183	19,861	20,020	21,081	21,201	21,412	21,555	23%	1%	5%
Total Residential	**38,738**	**49,199**	**48,330**	**53,871**	**54,267**	**55,438**	**55,301**	**56,276**	**57,302**	**11%**	**1%**	**2%**
NONRESIDENTIAL BUILDINGS												
Lodging	2,446	3,125	3,799	3,823	4,692	4,593	4,350	4,403	4,721	1%	23%	-2%
Office	6,808	7,921	9,552	8,981	11,190	12,511	12,397	11,988	12,042	-6%	25%	12%
Commercial	9,184	9,401	11,173	12,768	13,269	14,208	14,189	14,037	14,062	14%	4%	7%
Health Care	5,648	5,585	5,814	6,012	5,923	5,908	5,892	5,997	6,286	3%	-1%	0%
Educational	11,645	12,093	12,818	12,908	14,136	15,321	15,759	16,483	17,221	1%	10%	8%
Religious	495	510	548	489	446	432	414	417	429	-11%	-9%	-3%
Public Safety	1,379	1,210	1,133	1,140	1,240	1,354	1,520	1,573	1,683	1%	9%	9%
Amusement and Recreation	2,451	2,890	3,337	3,528	3,824	4,140	3,922	3,475	3,753	6%	8%	8%
Transportation	6,145	6,397	6,931	7,106	8,686	9,926	11,015	10,760	10,440	3%	22%	14%
Communication	2,528	3,095	3,136	3,575	3,606	3,731	3,709	3,790	3,951	14%	1%	3%
Manufacturing	8,571	11,403	10,864	10,014	10,080	10,545	9,914	9,709	10,752	-8%	1%	5%
Total Nonresidential Buildings	**57,301**	**63,631**	**69,106**	**70,345**	**77,094**	**82,669**	**83,080**	**82,634**	**85,341**	**2%**	**10%**	**7%**
NONBUILDING STRUCTURES												
Power	11,789	11,231	10,488	8,408	8,576	8,934	8,794	9,174	10,144	-20%	2%	4%
Highway and Street	9,295	10,476	10,303	8,754	9,413	9,867	10,264	10,807	11,324	-15%	8%	5%
Sewage and Waste Disposal	2,508	2,730	2,511	1,991	2,126	2,152	2,173	2,214	2,314	-21%	7%	1%
Water Supply	1,433	1,434	1,407	1,176	1,386	1,418	1,473	1,564	1,615	-16%	18%	2%
Conservation and Development	783	843	779	693	765	816	861	908	952	-11%	10%	7%
Total Nonbuilding Structures	**25,807**	**26,714**	**25,489**	**21,023**	**22,266**	**23,187**	**23,565**	**24,667**	**26,348**	**-18%**	**6%**	**4%**
Total Construction Put in Place	**$121,846**	**$139,545**	**$142,924**	**$145,239**	**$153,628**	**$161,295**	**$161,946**	**$163,577**	**$168,992**	**2%**	**6%**	**5%**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

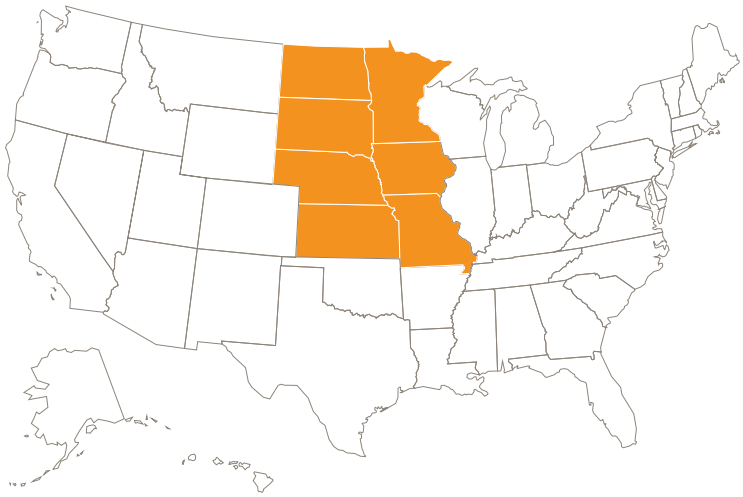
East North Central Construction Put in Place

Millions of Current Dollars

4th Quarter 2018 Forecast, Based on 3rd Quarter 2018 Actuals

	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f	Change From Prior Year 2017	2018e	2019f
RESIDENTIAL BUILDINGS												
Single-family	10,863	10,547	12,449	13,750	13,883	14,328	14,677	15,284	15,897	10%	1%	3%
Multifamily	2,660	2,795	4,408	3,988	4,099	3,857	3,676	3,896	4,282	-10%	3%	-6%
Improvements*	7,635	7,103	9,375	10,727	11,117	11,542	11,474	11,555	11,888	14%	4%	4%
Total Residential	**21,159**	**20,444**	**26,231**	**28,466**	**29,100**	**29,728**	**29,827**	**30,734**	**32,067**	**9%**	**2%**	**2%**
NONRESIDENTIAL BUILDINGS												
Lodging	2,292	3,005	3,486	3,510	4,219	4,033	4,081	4,479	4,711	1%	20%	-4%
Office	6,380	7,615	8,733	8,138	9,446	9,139	8,866	9,223	9,917	-7%	16%	-3%
Commercial	8,607	9,039	10,065	11,167	11,968	11,930	11,418	11,637	12,218	11%	7%	0%
Health Care	5,293	5,369	5,155	5,380	5,534	5,559	5,789	5,935	6,201	4%	3%	0%
Educational	10,913	11,627	11,657	11,424	12,271	12,833	13,482	14,342	14,823	-2%	7%	5%
Religious	464	491	475	419	381	367	348	348	356	-12%	-9%	-4%
Public Safety	1,293	1,164	1,036	1,037	1,106	1,193	1,139	1,178	1,239	0%	7%	8%
Amusement and Recreation	2,297	2,779	2,976	3,110	3,251	3,374	3,560	3,680	3,874	5%	5%	4%
Transportation	5,758	6,151	5,456	5,648	6,482	6,787	7,718	8,643	9,118	4%	15%	5%
Communication	2,369	2,976	2,864	3,133	3,248	3,358	3,361	3,432	3,548	9%	4%	3%
Manufacturing	8,033	10,963	9,849	8,210	8,703	9,304	9,182	8,585	8,634	-17%	6%	7%
Total Nonresidential Buildings	**53,699**	**61,177**	**61,753**	**61,177**	**66,610**	**67,876**	**68,946**	**71,482**	**74,638**	**-1%**	**9%**	**2%**
NONBUILDING STRUCTURES												
Power	12,050	10,594	10,528	10,565	10,820	11,026	11,418	11,922	12,887	0%	2%	2%
Highway and Street	9,500	9,883	9,847	9,713	10,126	10,462	10,842	11,303	11,680	-1%	4%	3%
Sewage and Waste Disposal	2,563	2,576	2,389	2,116	2,437	2,441	2,282	2,307	2,415	-11%	15%	0%
Water Supply	1,465	1,353	1,308	1,198	1,380	1,293	1,232	1,244	1,287	-8%	15%	-6%
Conservation and Development	800	795	767	744	814	885	944	1,001	1,052	-3%	9%	9%
Total Nonbuilding Structures	**26,378**	**25,201**	**24,840**	**24,337**	**25,578**	**26,109**	**26,717**	**27,777**	**29,320**	**-2%**	**5%**	**2%**
Total Construction Put in Place	**$101,236**	**$106,823**	**$112,824**	**$113,980**	**$121,288**	**$123,713**	**$125,489**	**$129,994**	**$136,025**	**1%**	**6%**	**2%**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.



West North Central Construction Put in Place

Millions of Current Dollars

4th Quarter 2018 Forecast, Based on 3rd Quarter 2018 Actuals

	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f	Change From Prior Year 2017	2018e	2019f
RESIDENTIAL BUILDINGS												
Single-family	28,501	26,895	30,672	33,148	30,855	30,516	29,448	30,261	31,436	8%	-7%	-1%
Multifamily	6,076	6,204	8,942	7,721	7,771	7,001	6,434	6,728	7,316	-14%	1%	-10%
Improvements*	20,032	19,509	21,188	24,102	24,422	24,290	23,544	24,096	25,242	14%	1%	-1%
Total Residential	**54,610**	**52,608**	**60,803**	**64,971**	**63,048**	**61,808**	**59,426**	**61,085**	**63,994**	**7%**	**-3%**	**-2%**
NONRESIDENTIAL BUILDINGS												
Lodging	1,420	1,880	2,303	2,358	2,408	2,576	2,532	2,465	2,419	2%	2%	7%
Office	3,953	4,765	5,770	5,413	6,488	7,159	6,456	6,754	7,023	-6%	20%	10%
Commercial	5,332	5,656	6,650	7,428	7,610	8,028	7,842	7,497	7,758	12%	2%	5%
Health Care	3,279	3,360	3,406	3,510	3,510	3,671	3,823	3,974	4,054	3%	0%	5%
Educational	6,761	7,275	7,702	7,599	8,047	8,685	9,125	9,564	9,839	-1%	6%	8%
Religious	287	307	314	279	254	246	234	235	241	-11%	-9%	-3%
Public Safety	801	728	685	697	818	796	776	798	843	2%	17%	-3%
Amusement and Recreation	1,423	1,739	1,966	2,069	2,132	2,219	2,122	1,940	2,053	5%	3%	4%
Transportation	3,567	3,849	3,604	3,685	4,486	4,935	4,452	4,359	4,622	2%	22%	10%
Communication	1,468	1,862	1,892	2,045	2,131	2,209	2,277	2,335	2,425	8%	4%	4%
Manufacturing	4,976	6,860	6,507	5,779	5,866	6,171	5,923	5,741	6,093	-11%	1%	5%
Total Nonresidential Buildings	**33,268**	**38,280**	**40,799**	**40,862**	**43,749**	**46,694**	**45,563**	**45,661**	**47,371**	**0%**	**7%**	**7%**
NONBUILDING STRUCTURES												
Power	9,945	8,922	8,967	8,648	9,101	9,251	9,228	9,538	10,091	-4%	5%	2%
Highway and Street	7,841	8,323	8,387	7,923	8,051	8,217	8,362	8,547	8,893	-6%	2%	2%
Sewage and Waste Disposal	2,115	2,169	2,035	1,769	1,836	1,888	1,910	1,968	2,075	-13%	4%	3%
Water Supply	1,209	1,139	1,114	1,002	1,086	1,149	1,183	1,253	1,306	-10%	8%	6%
Conservation and Development	660	669	653	622	663	700	733	778	822	-5%	7%	6%
Total Nonbuilding Structures	**21,769**	**21,223**	**21,157**	**19,962**	**20,737**	**21,205**	**21,416**	**22,085**	**23,187**	**-6%**	**4%**	**2%**
Total Construction Put in Place	**$109,647**	**$112,111**	**$122,758**	**$125,795**	**$127,535**	**$129,708**	**$126,405**	**$128,831**	**$134,551**	**2%**	**1%**	**2%**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

South Atlantic Construction Put in Place

Millions of Current Dollars
4th Quarter 2018 Forecast, Based on 3rd Quarter 2018 Actuals

	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f	Change From Prior Year 2017	2018e	2019f
RESIDENTIAL BUILDINGS												
Single-family	39,891	47,629	53,226	59,874	62,665	63,781	65,468	68,758	72,502	12%	5%	2%
Multifamily	9,512	12,289	13,459	13,801	15,746	16,106	16,199	16,016	15,320	3%	14%	2%
Improvements*	28,038	32,078	36,529	43,977	47,353	48,967	49,700	50,460	49,587	20%	8%	3%
Total Residential	**77,440**	**91,996**	**103,214**	**117,652**	**125,763**	**128,854**	**131,367**	**135,233**	**137,409**	**14%**	**7%**	**2%**
NONRESIDENTIAL BUILDINGS												
Lodging	2,396	3,044	4,104	4,789	5,146	4,936	5,127	5,301	5,127	17%	7%	-4%
Office	6,669	7,715	10,281	12,078	12,021	13,028	13,191	12,465	12,294	17%	0%	8%
Commercial	8,996	9,157	11,844	13,772	13,378	14,121	14,287	14,133	13,885	16%	-3%	6%
Health Care	5,533	5,440	6,064	6,445	6,295	6,235	6,263	6,344	6,560	6%	-2%	-1%
Educational	11,407	11,780	13,722	14,107	14,436	15,298	15,657	16,464	17,169	3%	2%	6%
Religious	485	497	559	516	461	445	424	427	440	-8%	-11%	-3%
Public Safety	1,351	1,179	1,220	1,281	1,328	1,451	1,585	1,667	1,735	5%	4%	9%
Amusement and Recreation	2,401	2,815	3,501	3,837	4,049	4,217	4,481	4,601	4,538	10%	6%	4%
Transportation	6,019	6,231	6,420	6,836	7,152	7,731	8,504	9,336	10,215	6%	5%	8%
Communication	2,476	3,015	3,371	3,866	3,786	4,040	4,214	4,420	4,609	15%	-2%	7%
Manufacturing	8,396	11,107	11,592	10,143	10,326	10,973	10,910	10,499	11,079	-13%	2%	6%
Total Nonresidential Buildings	**56,130**	**61,982**	**72,678**	**77,670**	**78,377**	**82,477**	**84,642**	**85,656**	**87,651**	7%	1%	5%
NONBUILDING STRUCTURES												
Power	18,286	16,894	18,364	19,487	19,522	20,633	20,667	20,263	20,145	6%	0%	6%
Highway and Street	14,417	15,760	17,783	16,901	17,435	17,799	18,188	19,365	20,492	-5%	3%	2%
Sewage and Waste Disposal	3,889	4,107	4,315	3,846	3,937	4,087	4,274	4,416	4,645	-11%	2%	4%
Water Supply	2,222	2,157	2,361	2,176	2,334	2,447	2,530	2,688	2,794	-8%	7%	5%
Conservation and Development	1,214	1,268	1,387	1,353	1,466	1,622	1,705	1,812	1,912	-2%	8%	11%
Total Nonbuilding Structures	**40,028**	**40,186**	**44,209**	**43,764**	**44,694**	**46,588**	**47,363**	**48,544**	**49,988**	-1%	2%	4%
Total Construction Put in Place	**$173,599**	**$194,164**	**$220,101**	**$239,085**	**$248,834**	**$257,919**	**$263,372**	**$269,433**	**$275,047**	**9%**	**4%**	**4%**

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East South Central Construction Put in Place

Millions of Current Dollars

4th Quarter 2018 Forecast, Based on 3rd Quarter 2018 Actuals

	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f	Change From Prior Year 2017	2018e	2019f
RESIDENTIAL BUILDINGS												
Single-family	6,038	6,969	7,776	8,471	8,705	8,854	9,388	9,933	10,583	9%	3%	2%
Multifamily	1,318	1,647	2,048	1,864	1,830	1,642	1,568	1,641	1,795	-9%	-2%	-10%
Improvements*	4,268	4,720	5,469	6,292	6,528	6,679	6,513	6,629	6,923	15%	4%	2%
Total Residential	**11,625**	**13,336**	**15,293**	**16,628**	**17,064**	**17,176**	**17,469**	**18,203**	**19,302**	**9%**	**3%**	**1%**
NONRESIDENTIAL BUILDINGS												
Lodging	830	1,014	1,122	1,143	1,328	1,270	1,148	1,180	1,219	2%	16%	-4%
Office	2,311	2,570	2,811	2,625	3,080	3,329	3,018	2,864	2,969	-7%	17%	8%
Commercial	3,118	3,051	3,239	3,601	3,604	3,794	3,613	3,552	3,700	11%	0%	5%
Health Care	1,918	1,812	1,659	1,702	1,712	1,787	1,852	1,975	1,916	3%	1%	4%
Educational	3,953	3,925	3,752	3,684	4,001	4,188	4,253	4,359	4,515	-2%	9%	5%
Religious	168	166	153	135	124	120	113	113	116	-12%	-8%	-4%
Public Safety	468	393	334	335	357	375	414	441	424	0%	7%	5%
Amusement and Recreation	832	938	958	1,003	1,070	1,112	1,058	965	1,017	5%	7%	4%
Transportation	2,086	2,076	1,756	1,786	1,998	2,114	2,245	2,449	2,589	2%	12%	6%
Communication	858	1,004	922	1,001	1,029	1,064	1,081	1,105	1,145	9%	3%	3%
Manufacturing	2,910	3,700	3,170	2,648	2,969	3,235	3,089	2,830	2,840	-16%	12%	9%
Total Nonresidential Buildings	**19,453**	**20,649**	**19,876**	**19,663**	**21,274**	**22,388**	**21,884**	**21,833**	**22,452**	**-1%**	**8%**	**5%**
NONBUILDING STRUCTURES												
Power	5,780	5,002	4,725	4,329	4,271	4,403	4,593	4,796	5,042	-8%	-1%	3%
Highway and Street	4,557	4,666	4,654	4,353	4,628	4,790	5,119	5,388	5,571	-6%	6%	3%
Sewage and Waste Disposal	1,229	1,216	1,072	923	972	995	1,013	1,035	1,084	-14%	5%	2%
Water Supply	702	639	587	523	576	601	603	633	655	-11%	10%	4%
Conservation and Development	384	375	344	324	362	398	406	427	449	-6%	12%	10%
Total Nonbuilding Structures	**12,652**	**11,899**	**11,382**	**10,452**	**10,810**	**11,187**	**11,734**	**12,280**	**12,801**	**-8%**	**3%**	**3%**
Total Construction Put in Place	**$43,730**	**$45,884**	**$46,551**	**$46,743**	**$49,147**	**$50,750**	**$51,087**	**$52,316**	**$54,555**	**0%**	**5%**	**3%**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

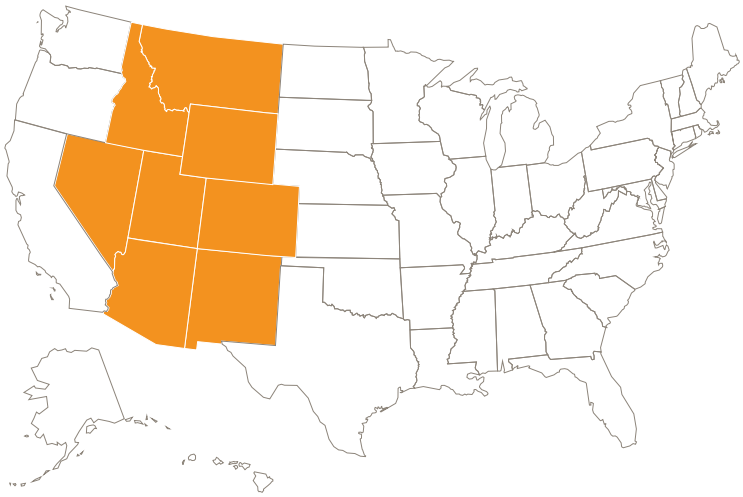
West South Central Construction Put in Place

Millions of Current Dollars

4th Quarter 2018 Forecast, Based on 3rd Quarter 2018 Actuals

	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f	Change From Prior Year 2017	2018e	2019f
RESIDENTIAL BUILDINGS												
Single-family	22,917	25,457	25,779	28,459	29,410	30,822	31,454	32,577	33,859	10%	3%	5%
Multifamily	5,788	6,957	6,709	6,543	5,994	5,404	5,362	5,761	6,389	-2%	-8%	-10%
Improvements*	13,167	14,015	14,270	16,674	16,892	17,101	16,604	16,952	17,768	17%	1%	1%
Total Residential	**41,871**	**46,428**	**46,758**	**51,676**	**52,296**	**53,327**	**53,420**	**55,291**	**58,016**	**11%**	**1%**	**2%**
NONRESIDENTIAL BUILDINGS												
Lodging	2,488	3,858	4,851	5,043	5,324	4,911	4,526	4,674	4,852	4%	6%	-8%
Office	6,924	9,778	12,154	11,579	12,606	12,241	11,440	11,138	11,599	-5%	9%	-3%
Commercial	9,340	11,605	14,008	15,182	15,327	15,912	15,286	15,103	15,806	8%	1%	4%
Health Care	5,744	6,894	7,175	7,436	7,621	7,996	8,199	8,376	8,725	4%	2%	5%
Educational	11,843	14,929	16,224	16,415	17,482	18,043	18,488	18,860	19,431	1%	6%	3%
Religious	503	630	662	596	558	541	516	519	533	-10%	-6%	-3%
Public Safety	1,403	1,494	1,442	1,476	1,623	1,778	1,945	2,003	2,121	2%	10%	10%
Amusement and Recreation	2,493	3,568	4,142	4,425	4,767	4,931	4,684	4,247	4,414	7%	8%	3%
Transportation	6,249	7,897	7,593	7,881	9,163	9,656	10,346	11,972	13,426	4%	16%	5%
Communication	2,571	3,821	3,986	4,420	4,670	4,857	4,880	5,015	5,217	11%	6%	4%
Manufacturing	8,717	14,076	13,707	11,681	12,384	13,441	13,480	13,092	12,671	-15%	6%	9%
Total Nonresidential Buildings	**58,275**	**78,551**	**85,944**	**86,134**	**91,523**	**94,307**	**93,789**	**95,000**	**98,797**	**0%**	**6%**	**3%**
NONBUILDING STRUCTURES												
Power	23,942	26,683	26,031	23,543	25,199	26,440	27,861	29,750	32,260	-10%	7%	5%
Highway and Street	16,169	17,296	17,452	17,555	18,590	19,397	20,074	21,000	21,767	1%	6%	4%
Sewage and Waste Disposal	4,772	5,459	5,128	4,355	4,615	4,802	4,940	5,112	5,368	-15%	6%	4%
Water Supply	2,910	3,408	3,337	2,931	3,251	3,481	3,644	3,876	4,023	-12%	11%	7%
Conservation and Development	1,590	2,002	1,957	1,819	2,042	2,306	2,456	2,614	2,754	-7%	12%	13%
Total Nonbuilding Structures	**49,383**	**54,848**	**53,905**	**50,203**	**53,697**	**56,427**	**58,975**	**62,352**	**66,172**	**-7%**	**7%**	**5%**
Total Construction Put in Place	**$149,529**	**$179,827**	**$186,607**	**$188,014**	**$197,516**	**$204,060**	**$206,184**	**$212,643**	**$222,986**	**1%**	**5%**	**3%**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

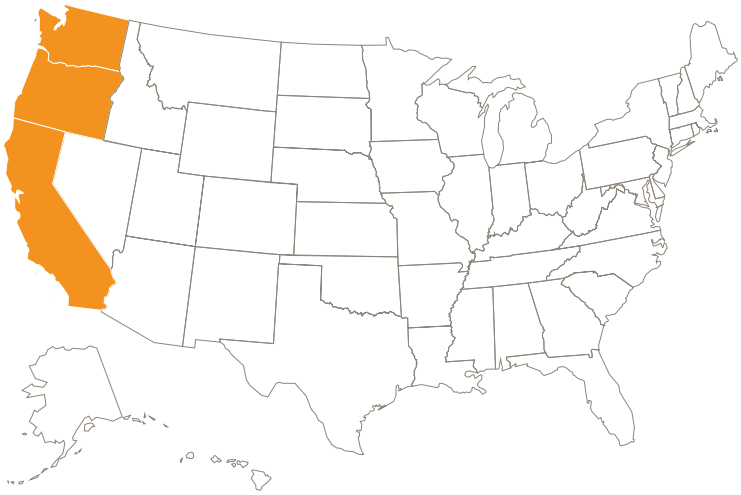


Mountain Construction Put in Place

Millions of Current Dollars
4th Quarter 2018 Forecast, Based on 3rd Quarter 2018 Actuals

	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f	Change From Prior Year 2017	2018e	2019f
RESIDENTIAL BUILDINGS												
Single-family	17,406	19,709	22,034	25,930	28,748	29,774	31,204	32,950	35,096	18%	11%	4%
Multifamily	4,018	4,922	7,322	7,998	8,275	7,546	7,366	7,316	7,850	9%	3%	-9%
Improvements*	11,984	13,003	16,435	20,074	21,660	21,100	20,351	20,780	21,894	22%	8%	-3%
Total Residential	**33,408**	**37,634**	**45,791**	**54,002**	**58,684**	**58,420**	**58,921**	**61,046**	**64,841**	**18%**	**9%**	**0%**
NONRESIDENTIAL BUILDINGS												
Lodging	1,127	1,387	1,727	1,849	2,327	2,399	2,102	1,887	1,966	7%	26%	3%
Office	3,137	3,515	4,327	4,246	4,798	5,141	4,920	4,802	5,018	-2%	13%	7%
Commercial	4,231	4,172	4,987	5,826	6,039	6,302	6,072	5,893	6,189	17%	4%	4%
Health Care	2,602	2,478	2,554	2,753	2,869	2,968	2,993	3,066	3,205	8%	4%	3%
Educational	5,365	5,366	5,776	5,961	6,336	6,765	6,952	7,320	7,642	3%	6%	7%
Religious	228	226	236	219	208	199	190	192	198	-7%	-5%	-4%
Public Safety	635	537	513	541	600	648	698	720	765	5%	11%	8%
Amusement and Recreation	1,129	1,282	1,475	1,638	2,010	2,070	1,870	1,682	1,788	11%	23%	3%
Transportation	2,831	2,839	2,703	2,890	3,451	3,688	3,890	4,236	4,472	7%	19%	7%
Communication	1,165	1,373	1,419	1,550	1,603	1,675	1,721	1,774	1,852	9%	3%	5%
Manufacturing	3,949	5,060	4,880	4,284	4,530	4,580	4,291	4,005	4,190	-12%	6%	1%
Total Nonresidential Buildings	**26,401**	**28,236**	**30,595**	**31,756**	**34,772**	**36,434**	**35,699**	**35,576**	**37,284**	**4%**	**9%**	**5%**
NONBUILDING STRUCTURES												
Power	9,814	8,728	8,228	8,155	8,461	8,419	8,893	9,784	10,704	-1%	4%	0%
Highway and Street	7,738	8,142	8,323	8,248	8,635	8,874	9,118	9,469	9,808	-1%	5%	3%
Sewage and Waste Disposal	2,087	2,122	2,020	1,880	1,990	2,048	2,112	2,190	2,320	-7%	6%	3%
Water Supply	1,193	1,115	1,106	1,064	1,193	1,295	1,398	1,434	1,502	-4%	12%	9%
Conservation and Development	652	655	648	661	783	815	870	928	987	2%	19%	4%
Total Nonbuilding Structures	**21,484**	**20,761**	**20,324**	**20,008**	**21,062**	**21,452**	**22,391**	**23,806**	**25,321**	**-2%**	**5%**	**2%**
Total Construction Put in Place	**$81,292**	**$86,631**	**$96,710**	**$105,767**	**$114,517**	**$116,306**	**$117,012**	**$120,429**	**$127,445**	**9%**	**8%**	**2%**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

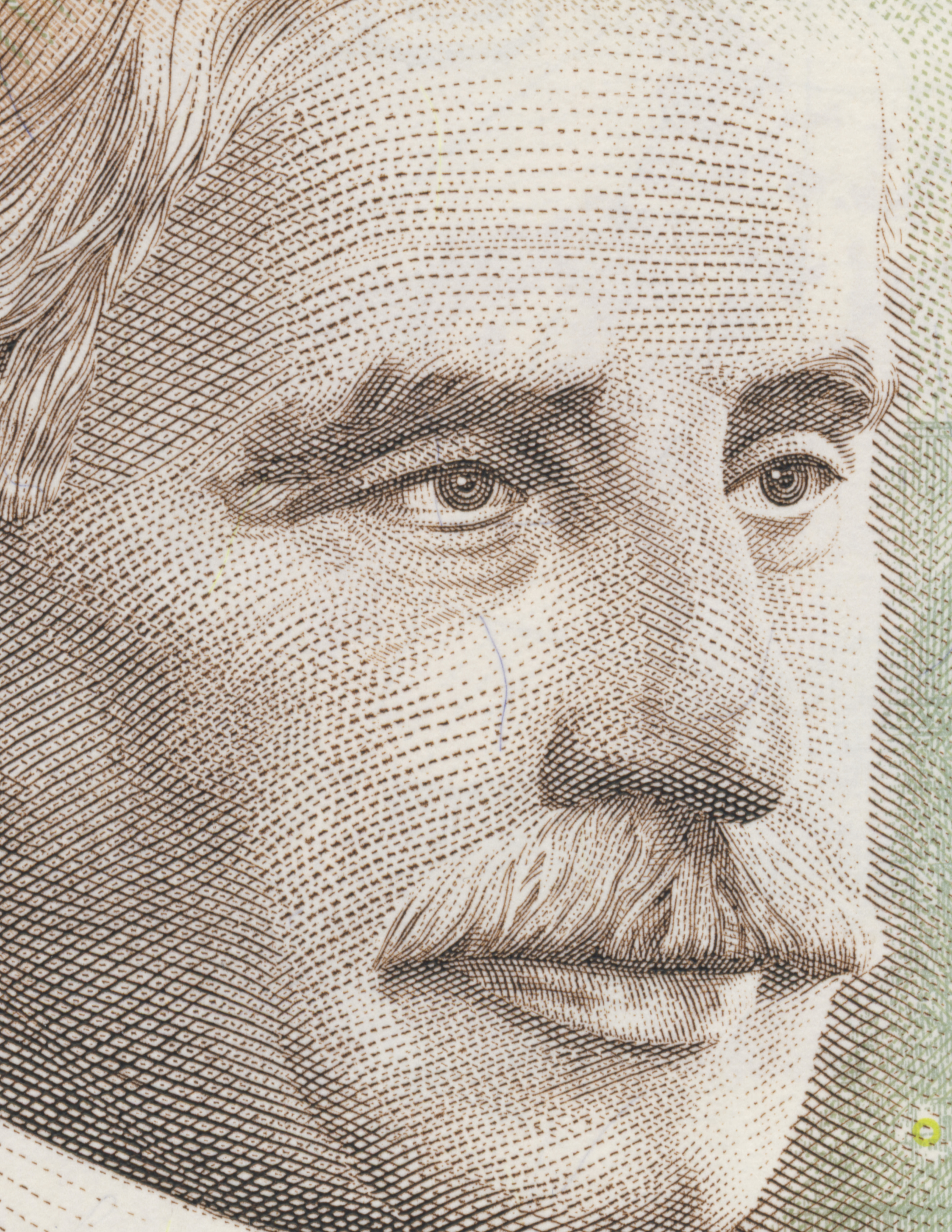


Pacific Construction Put in Place

Millions of Current Dollars
4th Quarter 2018 Forecast, Based on 3rd Quarter 2018 Actuals

	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f	Change From Prior Year 2017	2018e	2019f
RESIDENTIAL BUILDINGS												
Single-family	42,779	52,945	56,754	63,871	69,460	72,379	76,029	80,010	84,780	13%	9%	4%
Multifamily	10,586	14,230	15,560	15,413	14,914	14,053	13,597	14,486	15,743	-1%	-3%	-6%
Improvements*	29,977	35,551	39,315	46,325	49,021	51,470	50,982	51,871	53,924	18%	6%	5%
Total Residential	**83,342**	**102,727**	**111,629**	**125,609**	**133,395**	**137,902**	**140,608**	**146,368**	**154,448**	**13%**	**6%**	**3%**
NONRESIDENTIAL BUILDINGS												
Lodging	2,872	3,440	4,278	4,486	5,280	5,413	5,092	5,009	5,192	5%	18%	3%
Office	7,994	8,718	10,720	10,611	10,778	11,629	11,495	11,046	11,071	-1%	2%	8%
Commercial	10,784	10,348	12,363	13,314	13,529	14,181	13,622	13,291	13,895	8%	2%	5%
Health Care	6,632	6,147	6,340	6,456	6,534	6,800	6,833	7,029	7,311	2%	1%	4%
Educational	13,674	13,311	14,312	14,475	15,418	16,555	17,284	18,117	18,817	1%	7%	7%
Religious	581	562	586	534	498	478	456	458	470	-9%	-7%	-4%
Public Safety	1,619	1,332	1,272	1,364	1,625	1,764	1,662	1,595	1,656	7%	19%	9%
Amusement and Recreation	2,878	3,181	3,658	3,948	4,327	4,559	4,374	4,001	4,229	8%	10%	5%
Transportation	7,215	7,042	6,730	7,055	8,322	8,929	9,740	10,770	11,717	5%	18%	7%
Communication	2,968	3,407	3,516	3,921	4,083	4,203	4,348	4,545	4,720	12%	4%	3%
Manufacturing	10,064	12,551	12,093	10,397	10,079	10,537	11,202	11,072	11,059	-14%	-3%	5%
Total Nonresidential Buildings	**67,282**	**70,039**	**75,868**	**76,561**	**80,473**	**85,047**	**86,109**	**86,931**	**90,135**	**1%**	**5%**	**6%**
NONBUILDING STRUCTURES												
Power	15,061	11,789	11,151	10,603	11,286	11,823	12,113	12,485	13,244	-5%	6%	5%
Highway and Street	12,529	13,161	13,132	12,800	13,824	14,957	15,596	16,215	16,640	-3%	8%	8%
Sewage and Waste Disposal	3,281	3,239	2,982	2,874	3,046	3,263	3,644	3,930	4,125	-4%	6%	7%
Water Supply	1,831	1,506	1,430	1,367	1,543	1,693	1,854	1,960	2,033	-4%	13%	10%
Conservation and Development	1,000	885	836	809	953	1,005	1,078	1,140	1,201	-3%	18%	5%
Total Nonbuilding Structures	**33,702**	**30,579**	**29,531**	**28,455**	**30,651**	**32,741**	**34,285**	**35,730**	**37,242**	**-4%**	**8%**	**7%**
Total Construction Put in Place	**$184,326**	**$203,345**	**$217,027**	**$230,625**	**$244,518**	**$255,690**	**$261,003**	**$269,029**	**$281,825**	**6%**	**6%**	**5%**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.



The 2019 Canadian Construction Outlook

Now is a great time to take advantage of the opportunities that exist, assess your future options and build resiliency in your organization when the demands are not so acute.

By Jay Bowman, Managing Director of Research at FMI

In Canada, total construction spending put in place is anticipated to be just shy of $260 billion for 2018. This comes to a modest 3% increase over 2017 or about $9 billion in additional investment. Looking ahead to 2019, FMI forecasts another year of modest growth, with total construction spending topping $275 billion.

Overall, we expect total construction spending across Canada to continue this long-term, inflation rate-matching pattern of growth. Although this does not provide the excitement of the double-digit expansion of the early and mid-2000s, considering several of the potential economic disruptors—from higher interest rates to slumping oil prices and trade uncertainty—a 3% Compound Annual Growth Rate (CAGR) seems welcome.

Province by Province

At the provincial level, Quebec will see the greatest gains in construction spending. Over the next five years, total construction spending in the province is forecast to increase at an impressive 7% CAGR, or more than twice the long-term rate of inflation. The combined benefits of a strong labor market and increased public sector spending have, no doubt, contributed to much of the strong growth experienced during the past two years. While these and other underlying factors should continue to bolster activity in Quebec, there are also some emerging signs of moderation.

By comparison, Ontario's economy may be peaking. Our forecast points to zero growth (but also no contraction) in construction spending in 2019; yet the longer-term outlook will track close to 5% CAGR over the next five years. Right now, liquid natural gas (LNG) is truly fueling British Columbia's economy. With the development of LNG Canada's export terminal in Kitimat and the related building and infrastructure demand that it will produce, we are forecasting British Columbia's total construction spending to increase by 5% CAGR over the next five years.

Despite the challenges presented by the oil and gas industry, Alberta's market will be expanding within the next 18 to 24 months. The recent downturn, however, had its impact in 2018 and will spill over into 2019, resulting in a forecast of just over a 3% CAGR in total construction spending through 2023.

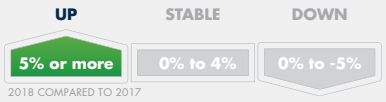
From a segment perspective, the non-building segments of power and water supply will lead all others in growth of construction spending through 2023. The water supply segment, although roughly one-fifth the size of the power segment in terms of construction spending, is forecast to expand at a rate of almost 10% CAGR over the next five years, with several multi-hundred million-dollar projects planned across the nation.

The Power Segment Rules

Right now, many of the largest upcoming projects in Canada are power-related. This includes approximately a dozen megaprojects valued greater than $1 billion. Many of the nonresidential building segments, including commercial, office and lodging, look to hold steady over the next five years, with CAGRs ranging from 4% to 6%. And while forecast construction spending in the single-family market begins to cool, multifamily construction should stay at or slightly above the long-term rate of inflation through 2023.

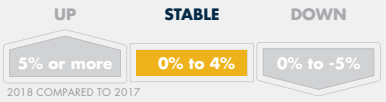
Overall, Canada's construction industry has as many positive indicators as it does question marks. In 2019, as several challenges are worked out both home and abroad, we should start to see a clearer indication of things to come. For now, it's time to take advantage of the opportunities that exist, assess your future options and build resiliency in your organization when the demands are not so acute.

2018 Canada Construction Segment Performance



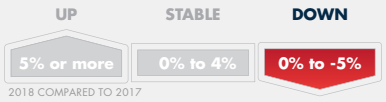
Up

- Communication
- Conservation and Development
- Highway and Street
- Educational
- Water Supply
- Commercial
- Religious
- Sewage and Waste Disposal



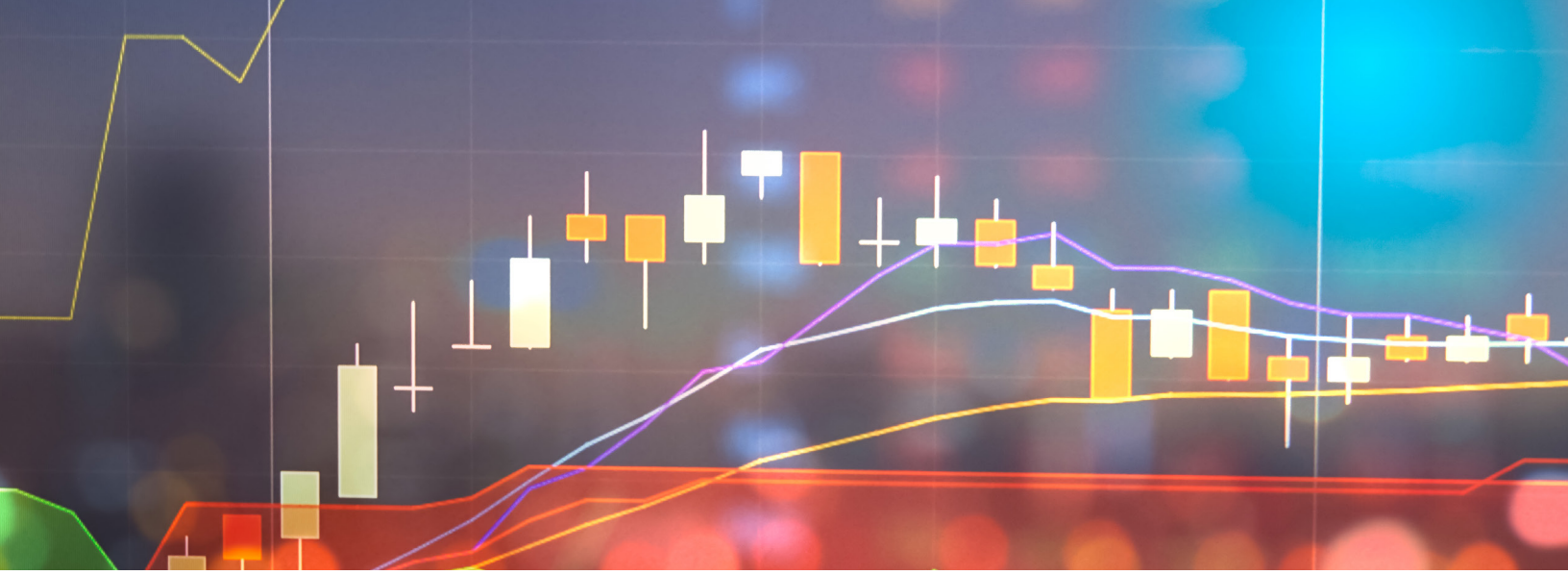
Stable

- Transportation
- Manufacturing
- Amusement and Recreation
- Single-family
- Residential Improvements
- Office
- Lodging
- Multifamily
- Health Care
- Public Safety

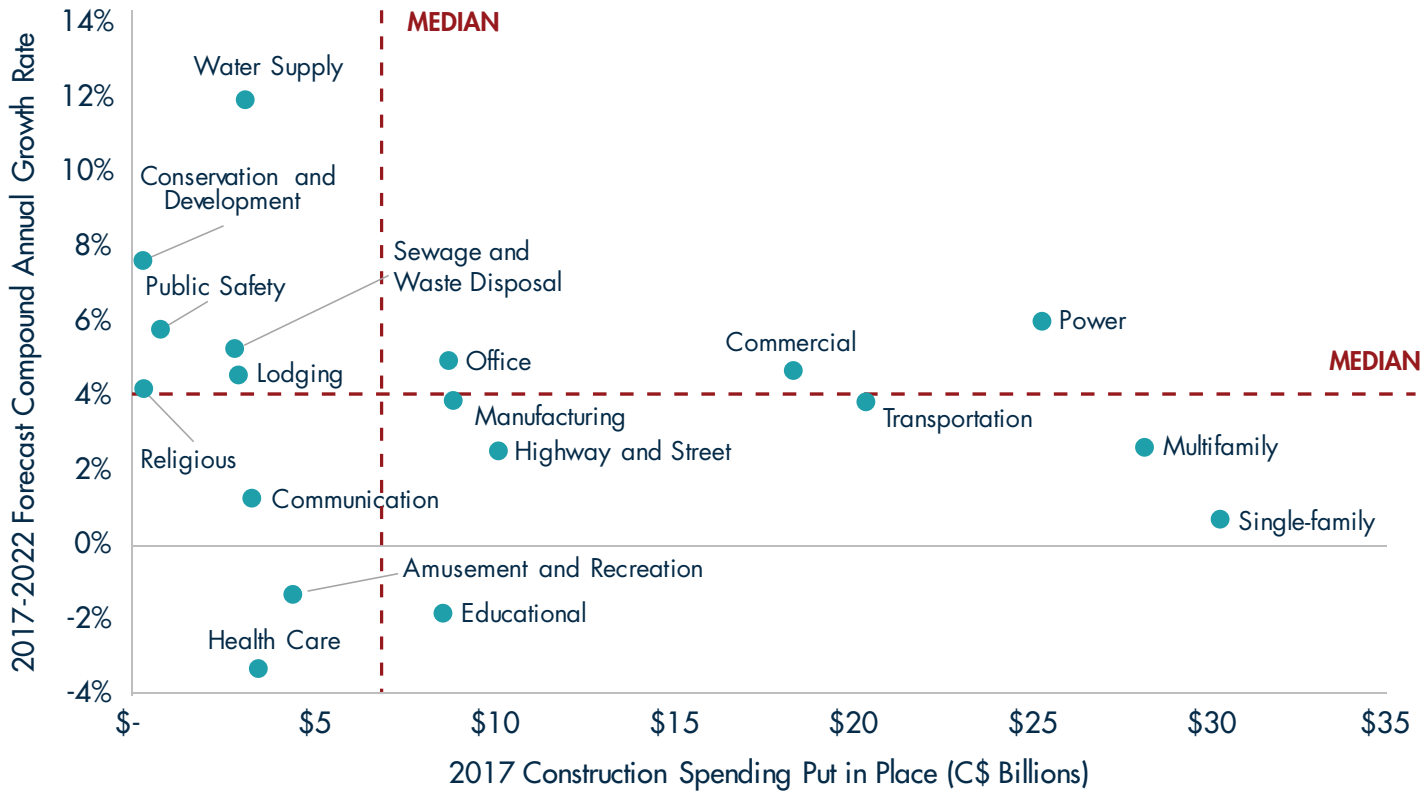


Down

- Power



Total Canadian Construction Spending Put in Place 2017 and Forecast Growth (2017-2022 CAGR) by Construction Segment



Source: U.S. Census and FMI Forecast

Construction Put in Place Estimated for Canada

Millions of Current Dollars
4th Quarter 2018 Forecast

	2013	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f
RESIDENTIAL BUILDINGS										
Single-family	25,926	26,398	25,945	27,599	30,377	31,288	30,026	31,327	31,433	31,413
Multifamily	21,537	21,802	24,235	26,146	28,195	28,759	29,338	28,165	30,729	32,177
Improvements*	48,274	51,770	53,373	55,163	58,946	60,688	63,646	65,896	68,075	70,296
Total Residential Buildings	**95,737**	**99,970**	**103,552**	**108,908**	**117,517**	**120,735**	**123,011**	**125,387**	**130,237**	**133,886**
NONRESIDENTIAL BUILDINGS										
Lodging	2,245	2,487	3,113	3,177	2,998	3,058	3,106	3,242	3,588	3,760
Office	9,000	9,214	10,092	9,050	8,817	9,048	9,229	11,207	10,983	11,236
Commercial	16,813	17,913	18,904	18,505	18,456	19,433	19,973	20,791	22,230	23,199
Health Care	4,215	3,694	3,124	2,557	3,492	3,544	3,310	3,290	3,182	2,963
Education	6,126	6,460	7,585	8,373	8,641	9,418	7,875	7,887	7,909	7,892
Religious	296	327	324	320	323	340	347	359	381	396
Public Safety	799	699	964	975	793	803	897	986	1,014	1,051
Amusement and Recreation	4,046	3,350	3,772	4,257	4,520	4,656	3,898	4,207	4,203	4,226
Transportation	18,835	19,444	20,445	20,698	20,477	21,407	21,625	22,390	23,801	24,817
Communication	1,677	3,264	3,548	2,747	3,373	3,811	3,314	3,327	3,381	3,592
Manufacturing	8,869	8,875	9,015	8,583	8,985	9,291	9,782	9,852	10,287	10,878
Total Nonresidential Buildings	**72,920**	**75,728**	**80,885**	**79,242**	**80,875**	**84,809**	**83,357**	**87,538**	**90,959**	**94,010**
NONBUILDING STRUCTURES										
Power	24,225	26,731	26,402	28,245	25,385	24,624	28,704	30,598	32,328	34,066
Highway and Street	8,340	8,080	8,207	9,493	10,179	11,095	11,364	11,118	11,363	11,545
Sewage and Waste Disposal	2,946	2,857	2,503	2,600	2,787	2,927	3,583	3,588	3,548	3,598
Water Supply	6,368	5,890	2,882	3,026	3,154	3,394	5,665	5,794	5,846	5,535
Conservation and Development	184	176	651	707	305	338	387	416	427	441
Total Nonbuilding Structures	**50,403**	**51,815**	**48,851**	**53,563**	**51,989**	**53,472**	**61,067**	**62,633**	**64,875**	**66,729**
Total Construction Put in Place	**$219,060**	**$227,513**	**$233,288**	**$241,713**	**$250,380**	**$259,016**	**$267,435**	**$275,557**	**$286,069**	**$294,622**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

Construction Put in Place Estimated for Canada

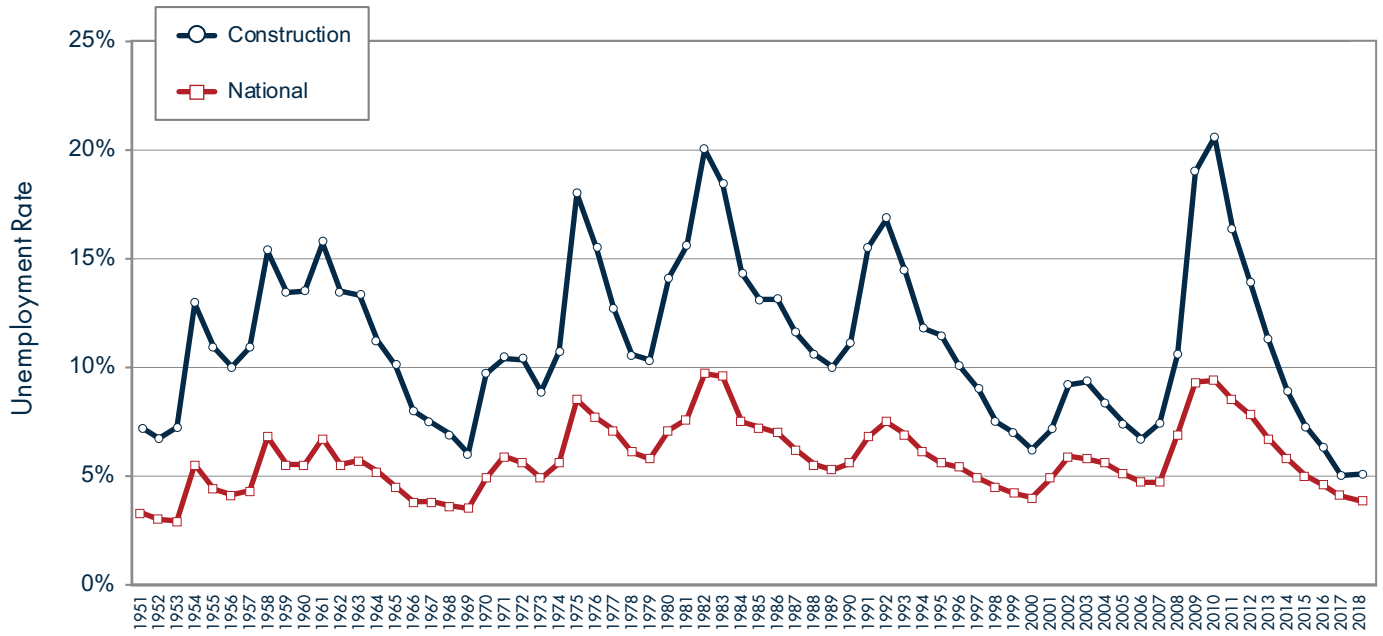
Millions of Current Dollars
4th Quarter 2018 Forecast

	2013	2014	2015	2016	2017	2018e	2019f	2020f	2021f	2022f
RESIDENTIAL BUILDINGS										
Single-family	-2%	2%	-2%	6%	10%	3%	-4%	4%	0%	0%
Multifamily	-3%	1%	11%	8%	8%	2%	2%	-4%	9%	5%
Improvements*	3%	7%	3%	3%	7%	3%	5%	4%	3%	3%
Total Residential Buildings	**0%**	**4%**	**4%**	**5%**	**8%**	**3%**	**2%**	**2%**	**4%**	**3%**
NONRESIDENTIAL BUILDINGS										
Lodging	10%	11%	25%	2%	-6%	2%	2%	4%	11%	5%
Office	3%	2%	10%	-10%	-3%	3%	2%	21%	-2%	2%
Commercial	1%	7%	6%	-2%	0%	5%	3%	4%	7%	4%
Health Care	-4%	-12%	-15%	-18%	37%	1%	-7%	-1%	-3%	-7%
Education	-8%	5%	17%	10%	3%	9%	-16%	0%	0%	0%
Religious	-10%	11%	-1%	-1%	1%	5%	2%	3%	6%	4%
Public Safety	21%	-13%	38%	1%	-19%	1%	12%	10%	3%	4%
Amusement and Recreation	19%	-17%	13%	13%	6%	3%	-16%	8%	0%	1%
Transportation	2%	3%	5%	1%	-1%	5%	1%	4%	6%	4%
Communication	-3%	95%	9%	-23%	23%	13%	-13%	0%	2%	6%
Manufacturing	-6%	0%	2%	-5%	5%	3%	5%	1%	4%	6%
Total Nonresidential Buildings	**1%**	**4%**	**7%**	**-2%**	**2%**	**5%**	**-2%**	**5%**	**4%**	**3%**
NONBUILDING STRUCTURES										
Power	23%	10%	-1%	7%	-10%	-3%	17%	7%	6%	5%
Highway and Street	-12%	-3%	2%	16%	7%	9%	2%	-2%	2%	2%
Sewage and Waste Disposal	-26%	-3%	-12%	4%	7%	5%	22%	0%	-1%	1%
Water Supply	-4%	-8%	-51%	5%	4%	8%	67%	2%	1%	-5%
Conservation and Development	139%	-4%	270%	8%	-57%	11%	14%	8%	3%	3%
Total Nonbuilding Structures	**2%**	**3%**	**-6%**	**10%**	**-3%**	**3%**	**14%**	**3%**	**4%**	**3%**
Total Construction Put in Place	**1%**	**4%**	**3%**	**4%**	**4%**	**3%**	**3%**	**3%**	**4%**	**3%**

*Improvements includes additions, alterations and major replacements. It does not include maintenance and repairs.

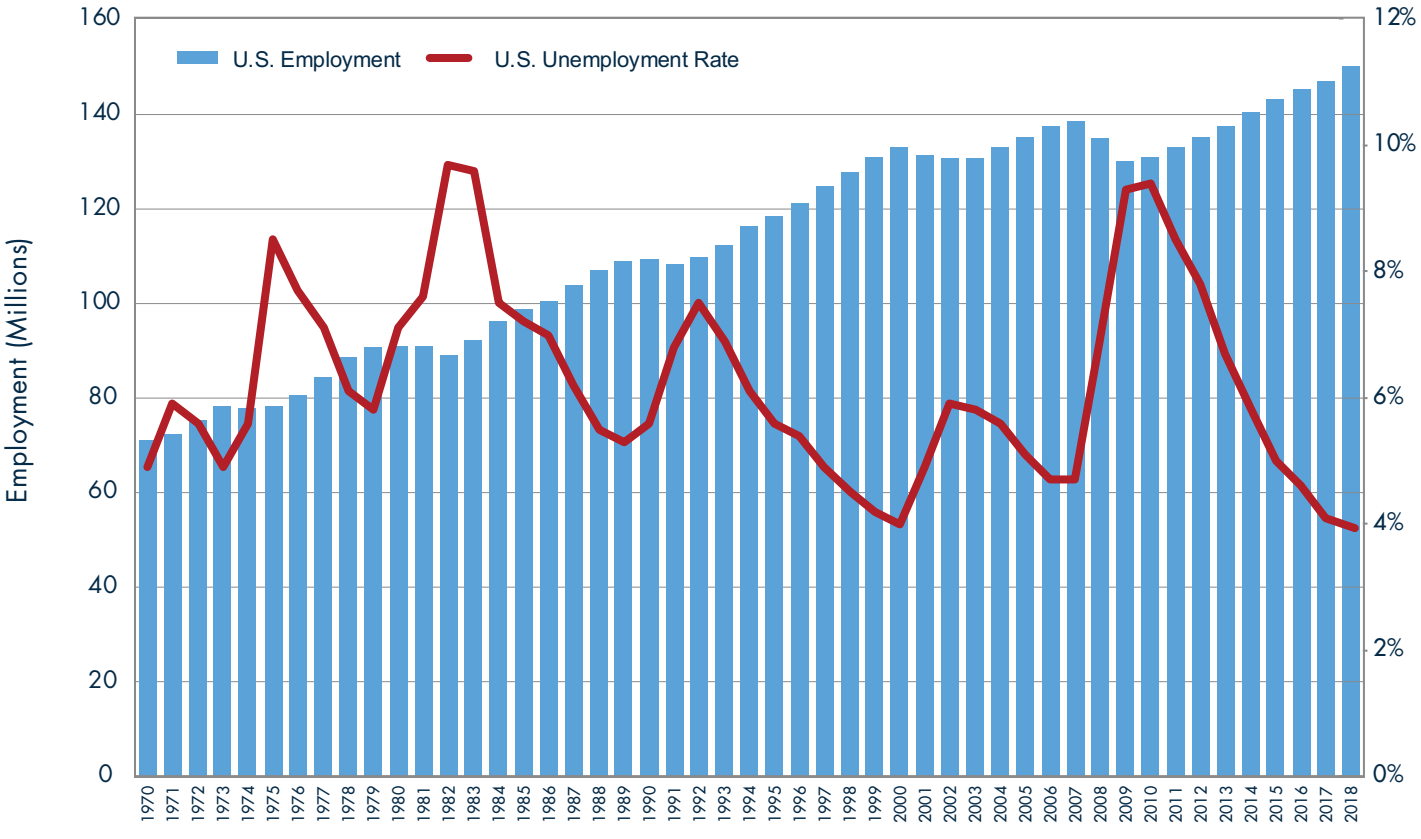
United States Appendix Charts

Construction Unemployment Rates



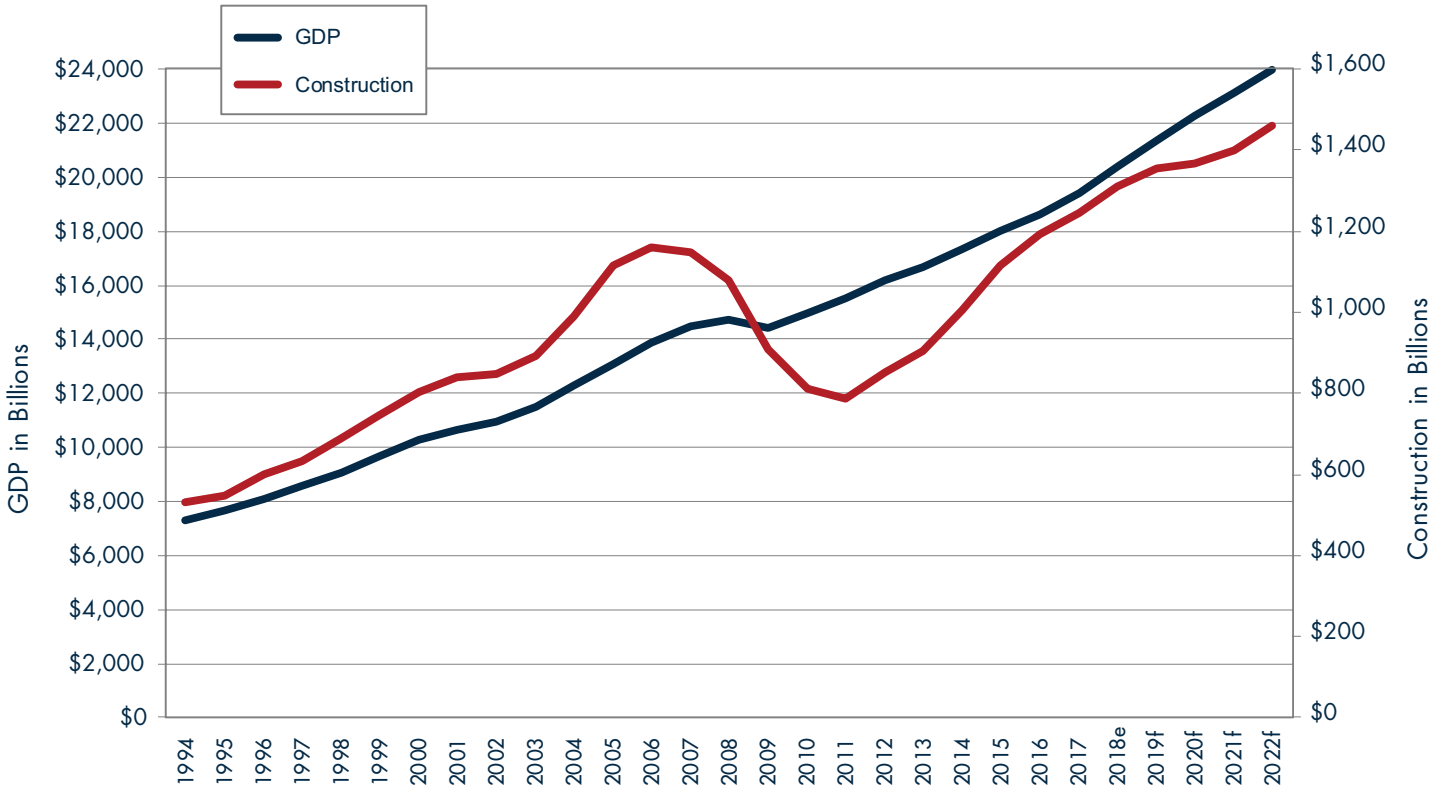
Source: Bureau of Labor Statistics

Employment and Unemployment Rate Comparison



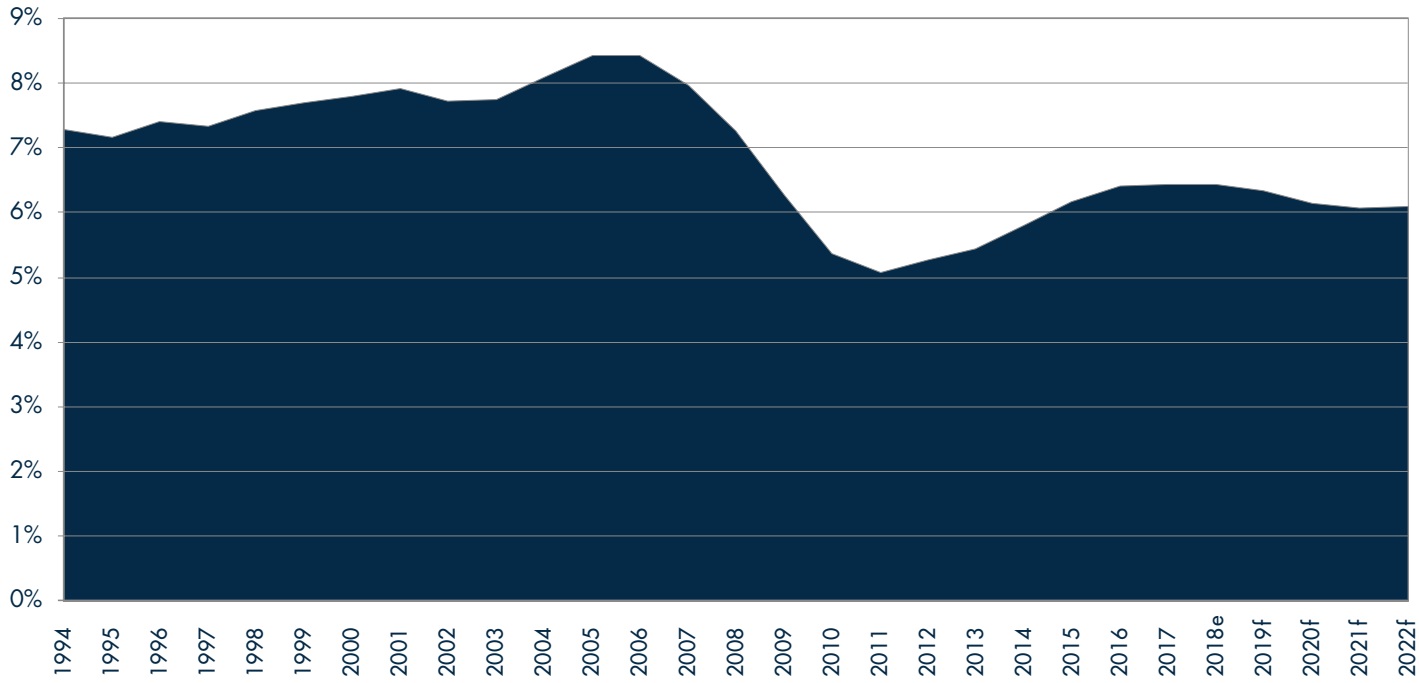
Source: Bureau of Labor Statistics

Construction Spending and Nominal GDP



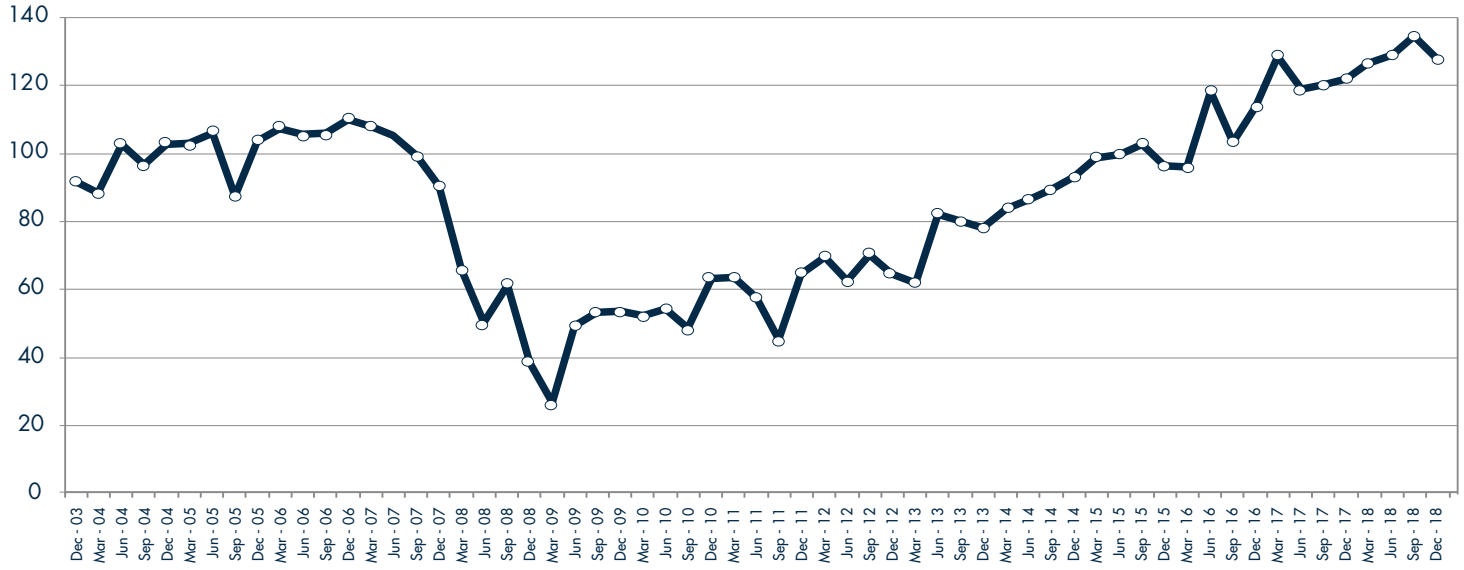
Source: Bureau of Labor Statistics

Construction as a Percentage of GDP



Source: Bloomberg

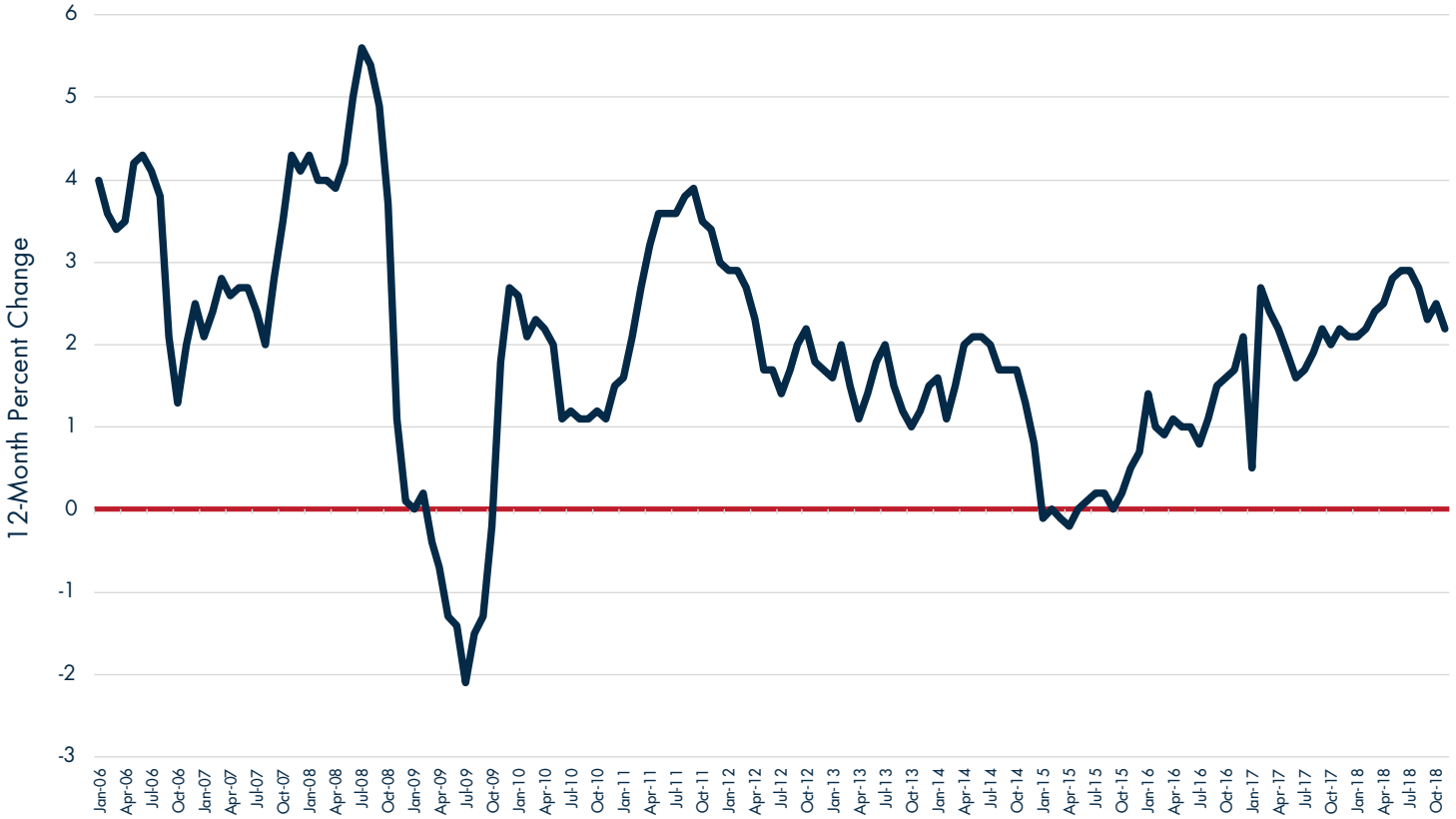
Conference Board Consumer Confidence Index



Source: Bureau of Labor Statistics

Consumer Price Index

All Urban Consumer, 12-Month Percent Change



Source: Bureau of Labor Statistics

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Industry Focus. Powerful Results.™

About FMI

For over 65 years, FMI has been the leading **management consulting and investment banking** firm dedicated exclusively to **engineering and construction, infrastructure and the built environment**.

FMI serves all sectors of the industry as a trusted advisor. More than six decades of context, connections and insights lead to transformational outcomes for our clients and the industry.

Sector Expertise

- A/E and Environmental
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- Construction Materials
- General Contractors/CM
- Energy Service & Equipment
- Energy Solutions & Cleantech
- Heavy Civil
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- Owners
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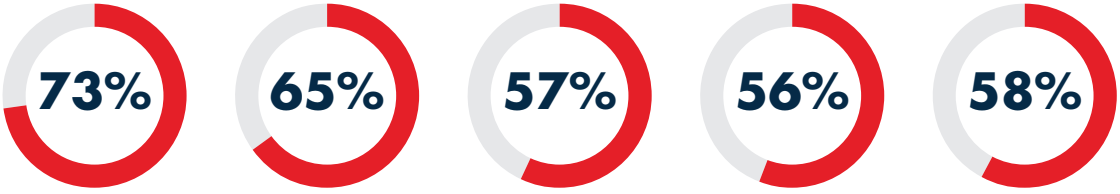
- Specialty Trades
- Utility T&D

FMI Client Highlights



of the ENR **Top-400** **LARGEST CONTRACTORS**

of the ENR **Top-200** **SPECIALTY CONTRACTORS**

of the ENR **Top-100** **DESIGN FIRMS**

of the ENR **Top-200** **ENVIRONMENTAL FIRMS**

of the ENR **Top-100** **CM FOR FEE FIRMS**

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Brian Strawberry is a senior economist with FMI. Brian's expertise is in economic and statistical modeling. He leads FMI's efforts in market sizing, forecasting, and building product/construction material pricing and consumption trends. Brian's combination of analytical skills and creative problem-solving abilities has proven valuable for many contractors, owners and private equity groups as well as industry associations and internal research initiatives. Brian may be reached at ***bstrawberry@fminet.com***.

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