

CONSTRUCTION MARKET OUTLOOK MIAMI - TAMPA, FLORIDA

November 2019



This note provides an overview of the construction markets in Miami and Tampa in Q4 2019. We assess the recent trends in building costs and provide our view on the outlook for project bid submission prices.

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DHARAM CONSULTING VIEW

Construction activity in both Miami and Tampa have increased significantly over the past few years. Tampa's construction pipeline has risen to record highs in 2019, in Miami workflow has been exceptionally strong in 2017 and 2018. The Miami market is taking a short breather in 2019 as major projects are being completed, before the start of new large-scale projects over the course of this year will test market capacity in the next 1-2 years ahead.

Based on the latest data and a review of the current project pipelines in both locations, we forecast bid submission price inflation at 6.5% in 2019, which is 1.3% above the US average. We expect bid submission prices to increase by 5% in 2020, as lower material prices are offset by rising labor costs.

Our bid submission price forecast is based on the following assumptions:

- Contractor bid submission price escalation has increased this year, as strong demand levels allow for an input cost pass-through and firm overheads & profits.
- Significant projects are underway and / or in the pipeline and the level of work has increased significantly in 2019 in Tampa and is expected to rise sharply in 2020 in Miami.
- Input cost pressures are expected to persist in the near term and competition for contracting and labor resources will be maintained in an already tight market.
- Large-scale projects, demanding experienced contractors able to deliver mixed-use projects over a longer timeframe are likely to command higher prices. At the same time, smaller projects may face difficulties in attracting sufficiently competitive resources, which may lead to higher average cost.



CONSTRUCTION COST DRIVERS

Economic outlook

The current US economic expansion, coupled with record employment levels, became the longest in history in July 2019. However, the pace of growth has slowed over the course of this year, as underlying demand is ebbing and the impact of the fiscal stimulus is wearing off.

Concerns over rising risks of a downturn after 2019, stoked by domestic policies and developments elsewhere in the global economy, has resulted in worsening financial conditions, which prompted the US Fed to lower the target range for its key interest rate for a second time in September 2019.

On the back of a further slowdown in the current business cycle, US economic growth is forecast to slow to below trend over the next few years. There are a number of risks impacting businesses and consumers alike. This includes the future path of federal fiscal and monetary policy, the outlook for global growth, uncertainty over national trade policy, including ongoing US-China tariffs developments with US tariffs set to rise further pending the outcome of ongoing talks, as well as EU-UK Brexit deadlines.

Florida's economy has lagged the wider US expansion in 2017 and 2018, but is forecast to outpace average national growth in 2019 (figure 1). In addition, jobs growth locally outpaced the national average over the last two years. Job growth between 2014 and 2018 averaged 2.8% per annum in Tampa and 2.7% in Miami, compared to a national average of 1.8% (figure 2). Unemployment rates in the area are below the national average and at historically low levels.

Tourism remains a dominant and a strong sector, but diversification is playing an important role in local markets. The largest sector in the area is the professional and business services sector, which has led job growth since 2014 (figures 3,4).

Education and healthcare are also major job creators in Miami and Tampa. Both have significant student populations and education institutions are expanding to accommodate demand growth.

On the back of an active market, the construction sector has also seen notable job gains in both localities. Expansions in the leisure and hospitality sector have also contributed to strong employment growth following the recession.

Looking ahead, Florida's economy is forecast to slow to a 2% range between 2021 and 2023. Consequently, jobs growth is forecast to slow over the next few years, in line with wider trends across the US. Over the next 3 years, employment growth is forecasted at an average annual rate of 1.6 percent, driven by expansions in the business services, tourism, and healthcare industries.

FIG. 1: FLORIDA ECONOMIC PERFORMANCE

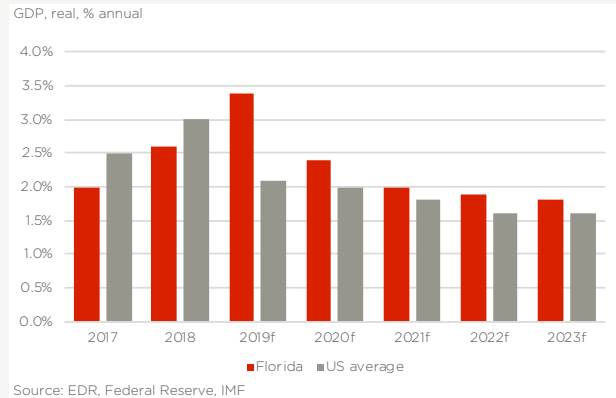


FIG. 2: EMPLOYMENT TRENDS

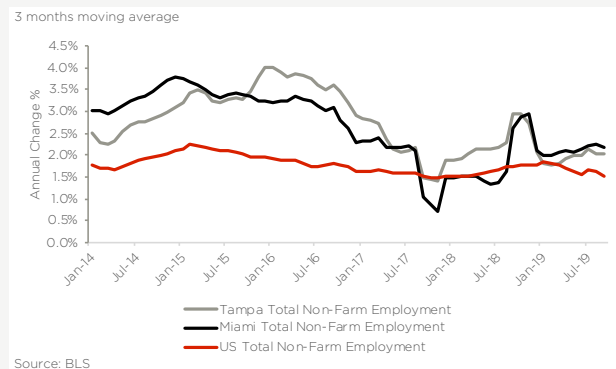


FIG. 3: MIAMI - EMPLOYMENT BY SECTOR

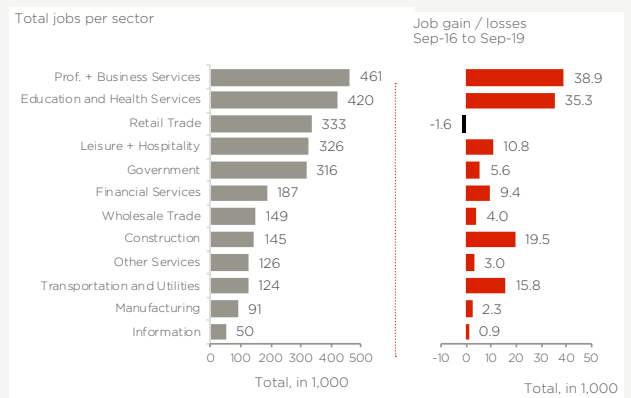
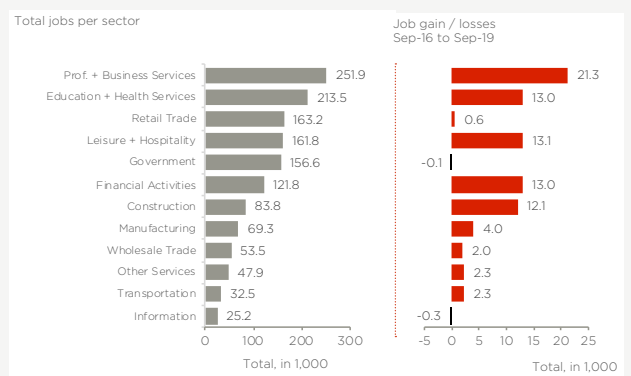


FIG. 4: TAMPA - EMPLOYMENT BY SECTOR



Construction activity

Construction spending nationally has started to slow over the course of this year to an annualized \$1,287 billion in August 2019, down 2% year-on-year. The revised forecast now expects construction spending to be unchanged at best compared to last year. With construction inflation still running above 4%, this translates into a decline in national construction volumes.

In contrast to the national averages, contractors in Florida continue to see a strong market after five years of firm growth. In Miami a large number of residential and mixed-use projects, along with hospitality projects are being delivered and more are in the pipeline, while in Tampa developments within the urban core are driving strong activity across a number of sectors. Tampa's largest project, Water Street Tampa, a \$3.5-billion revitalization program is currently underway along the city's waterfront. Solid job growth is driving demand for commercial space in both locations.

According to the supply chain, the markets in Miami and to a lesser extent Tampa are maturing, which is expected to soften the extreme construction cycles seen in previous decades, providing for more stable development. Overall, despite expectations of a generally slower market from 2020, we expect growth steady market conditions across all sectors in the near-to medium term.

Construction Starts: Miami

Construction activity in Miami has been buoyant for a number of years now, led by mixed use developments and a rebound in condo projects. The value of construction starts totaled \$15.6 billion in 2018, nearly double the value of 2013 (figure 5).

Over the last three years, the share of residential projects stood at 48% of the market, with starts totaling between \$5.5 billion and \$8.3 billion per annum.

The share non-residential building is around 40% of the market. Within this, commercial projects take by far the largest share of the sub-sector, accounting for 43% of the non-residential sector in 2018, followed by hospitality + leisure projects (18%) and retail (18%). Infrastructure projects accounted for just 13% of the construction market (figure 6).

Construction starts in Miami are forecast to total \$15.4 billion in 2019, relatively unchanged from 2018. Whilst residential project starts are forecast to increase by 12% to a record \$8.3 billion, the value of non-residential starts is forecast to total \$5.1 billion, 18% less than last year. In particular, commercial, as well as hospitality + leisure related project starts are expected to ease back, given the more uncertain outlook for general economic conditions (figure 7,8).

The value of infrastructure project starts is estimated to reach nearly \$2 billion this year, up 7% on 2018.

FIG. 5: MIAMI CONSTRUCTION STARTS

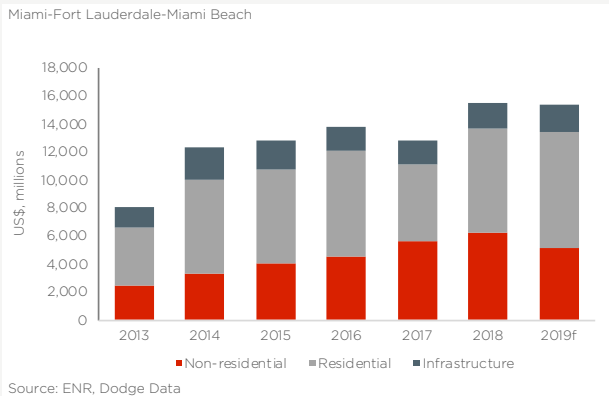


FIG. 6: MIAMI STARTS BY SECTOR

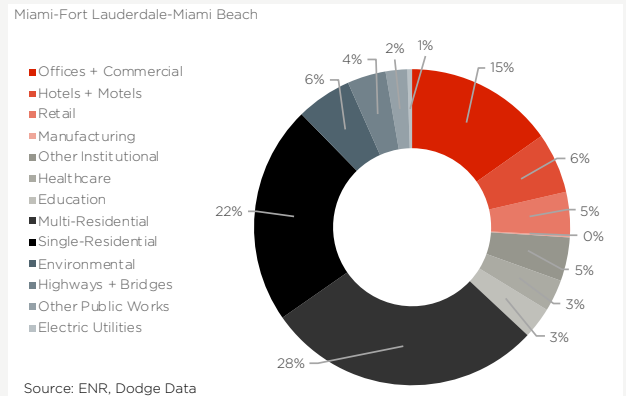


FIG. 7: NON-RESIDENTIAL CONSTRUCTION STARTS

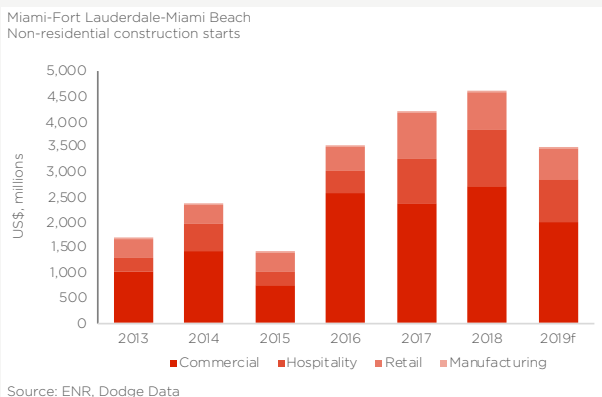
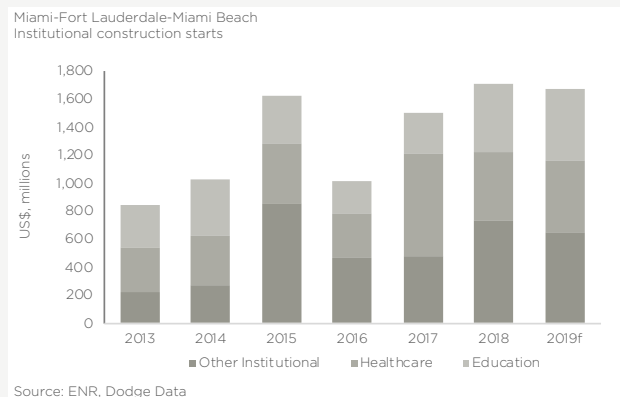


FIG. 8: INSTITUTIONAL CONSTRUCTION STARTS



Construction Starts: Tampa

Construction starts in Tampa have also risen considerably over the last few years. The value of project starts stood at \$9.3 billion in 2018, up from just \$4.9 billion in 2013 (figure 9, 10).

This has been driven by pent-up demand, local incentives and availability of land, with developers taking advantage of market conditions to embark on large-scale (re)development projects in the urban core and the beach front. The city's flagship project is the \$3.5 billion Water Street Tampa underway since 2017 along the waterfront. Built out the program is planned to be a 50-acre community of residential, commercial + retail, hospitality + leisure, cultural, entertainment and education spaces along the Hillsborough River.

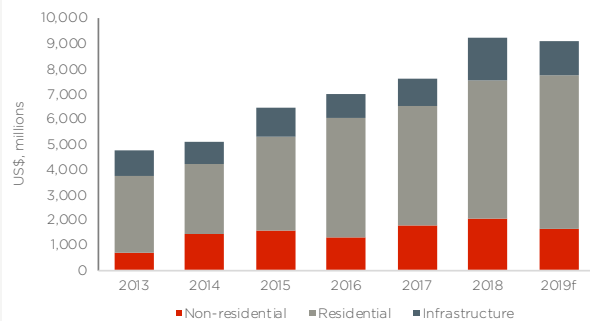
The value of construction starts in Tampa is estimated to total \$9.1 billion in 2019, nearly the same level as in 2018. The value of non-residential starts is expected to be lower this year, given the award of large-scale projects in the last two years, which are currently in various phases of development. At \$1.7 billion, the value of non-residential starts will still be high by historic standards. A breakdown of non-residential development is shown on figures 11 and 12.

The value of residential project starts in Tampa is expected to have risen further this year, totaling \$6.1 billion, up from \$5.5 billion in 2018. Single residential projects dominate the area, given the availability of land locally.



FIG. 9: TAMPA CONSTRUCTION STARTS

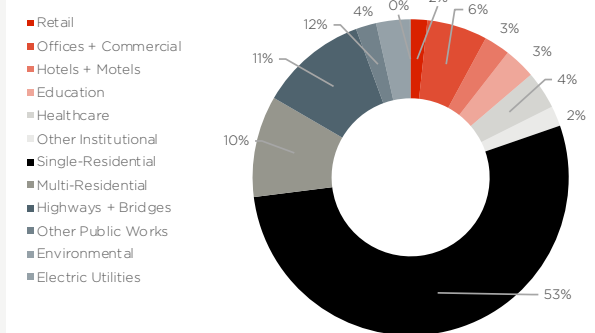
Tampa - St. Petersburg - Clearwater



Source: ENR, Dodge Data

FIG. 10: TAMPA STARTS BY SECTOR

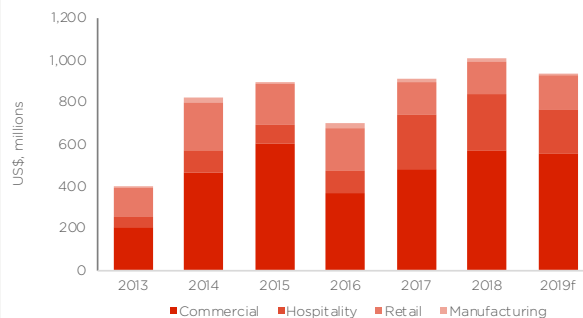
Tampa - St. Petersburg - Clearwater



Source: ENR, Dodge Data

FIG. 11: NON-RESIDENTIAL CONSTRUCTION STARTS

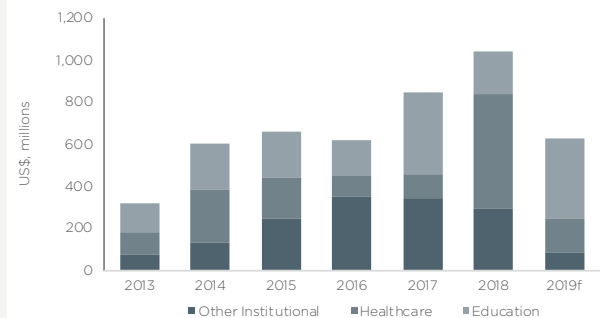
Tampa - St. Petersburg - Clearwater
Non-residential construction starts



Source: ENR, Dodge Data

FIG. 12: INSTITUTIONAL CONSTRUCTION STARTS

Tampa - St. Petersburg - Clearwater
Institutional construction starts



Source: ENR, Dodge Data

Construction costs in the Miami and Tampa are still significantly lower than the national average, due to lower labor cost (figure 13). According to the ENR, the average building costs in those two locations are 15% lower than the national average.

Building cost inflation (BCI) in Miami and Tampa has outpaced the wider US average over the past two years. The ENR recorded national average BCI of 2.3% in 2018 and 2.6% in the first ten months of this year. During the same period, building cost inflation in Miami is estimated to have risen by 4% and 4.8%, respectively. Similarly, in Tampa, building costs are estimated to have increased by 4% in 2018 and 4.3% in 2019.

As construction activity maintains its robust pace, labor shortage remains a primary challenge in both Miami and Tampa. Indeed, construction activity over the past years has been accompanied by rising capacity constraints, in particular for skilled labor and contractors experienced to work on large-scale construction projects and specialist work.

Given the current projects backlog, we expect labor capacity to remain tight, as a number of major projects proceed and more are planned to start on site.

Construction employment: Construction employment in both Miami and Tampa have expanded significantly in recent years, outpacing wider jobs growth in the areas, but employment levels remain below pre-recession levels.

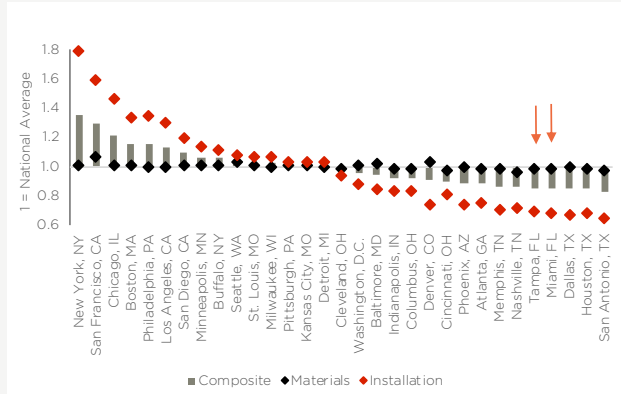
Construction employment in Miami rose by 5.6% in 2017 and 6% in 2018. In 2019, construction employment is up 3.9% in the year to date.

Meanwhile in Tampa, construction employment increased by 4.7% and 5.5% in 2017 and 2018, respectively. Employment growth continued to record strong growth rates this year, up 5.2% in the year to date.

Construction labor costs: Strong demand has put significant constraints on the construction supply chain and skilled labor shortage is a pressing concern to the local industry. Competition is particularly strong for sub-contractor resources. Consequently, construction wages have risen faster than average salaries over the past years, adding to local cost escalation.

In Miami labor cost inflation has picked up sharply over the course of the year, from around 2% in Q1 2019 to an estimated

FIG. 13: COMPARABLE CONSTRUCTION COST



6% in Q4 2019. In total, labor costs are estimated to have increased by 4% this year.

Tampa has recorded somewhat lower labor cost inflation this year, according to RS Means, with labor cost estimated to have risen by 2.5% in 2019 as a whole. This compares to labor cost inflation of 1.6% nationally on average.

Given the tight labor market and recent labor cost trends, we expect the pressure on bid submission prices from contractors and trades to persist in the near to medium term.

Currently, there is no prevailing wage law under Florida State law and there is no state requirement that Davis-Bacon and Related Acts (DBRA) wages are paid for construction work by the state, counties or cities in Florida. All federal funded public works fall under the DBRA. Individual counties within this state have imposed either their own prevailing wage regulations or chose to implement DBRA such as Miami-Dade County. Current reported prevailing wages in Miami-Dade and Hillsborough County (Tampa) are shown in figures 14 and 15.

FIG. 14: MIAMI PREVAILING WAGES

01.2019 Prevailing Wage+Fringe for Journey-Level Craftworkers
Miami-Dade, Building Works

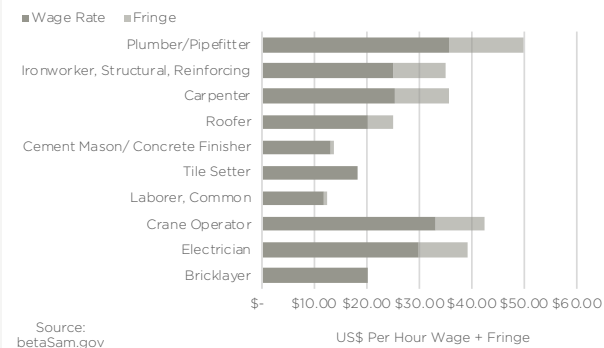
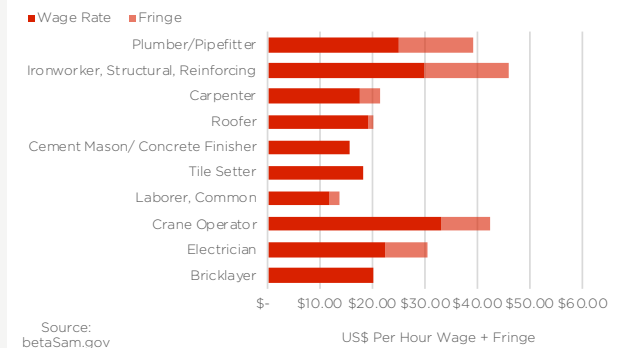


FIG. 15: TAMPA PREVAILING WAGES

01.2019 Prevailing Wage+Fringe for Journey-Level Craftworkers
Hillsborough County (Tampa), - Building Works



Global commodities prices continue to mostly trend sideways. Price risks are still judged to be on the downside, with factors such as slower growth in China and Europe, a stronger US Dollar, and policy uncertainty over US import tariffs weighing on commodity demand.

Domestically, construction material price inflation slowed significantly this year. In the third quarter of this year the index for material inputs to construction industries showed a 1.1% year-on-year decrease.

The ENR reports a higher rate of material price inflation, with the national index up 2.9% in the first ten months of this year compared to the same period in 2018. On the back of strong demand, material cost inflation accelerated above national averages locally over the course of 2019. We estimate that material costs rose by 5.5% in Miami and Tampa year-on-year.

Softwood lumber prices decreased most this year, followed by average gypsum prices. Steel prices have also decreased significantly over the course of this year, trailing below the 25% tariff-induced premium from 2018, as weaker global demand weighs on price levels.

Material prices are expected to continue to moderate, but uncertainty over shifts in US tariffs and trade policies leaves the construction supply chain and project procurement vulnerable to sudden price movements.

Recent trends in commodities and material prices are shown in figures 16-19 and tables 1-2.



Photo: 400 Channelside
Source: Architects Magazine

FIG. 16 COMMODITIES PRICES

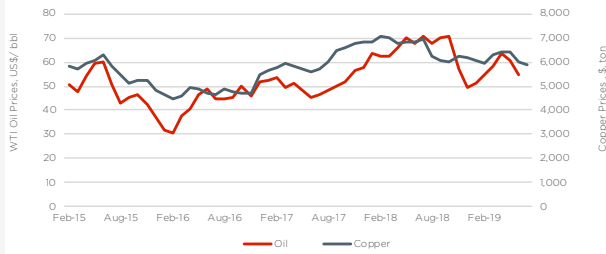
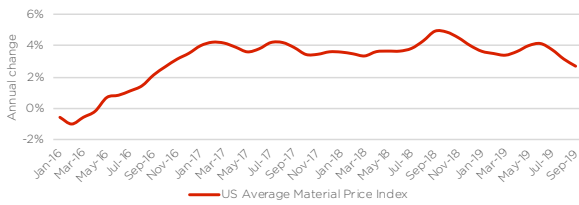


FIG. 17: ENR MATERIAL PRICE INDEX

3-months moving average



ENR Material Price Index	Annual Change
2017	3.8%
2018	4.0%
2019 YTD	3.2%

FIG. 18: MATERIALS INPUT TO CONSTRUCTION

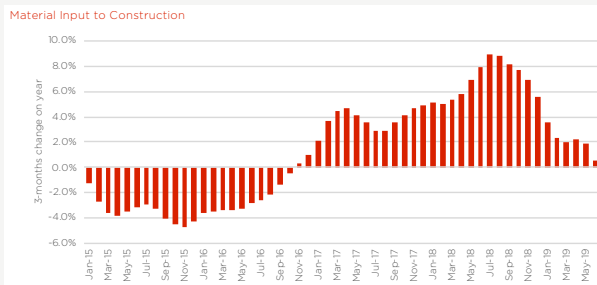


FIG. 19: DOMESTIC BUILDING MATERIALS

Domestic Construction Material Prices Jul-Sep 2019 vs Jul-Sep 2018

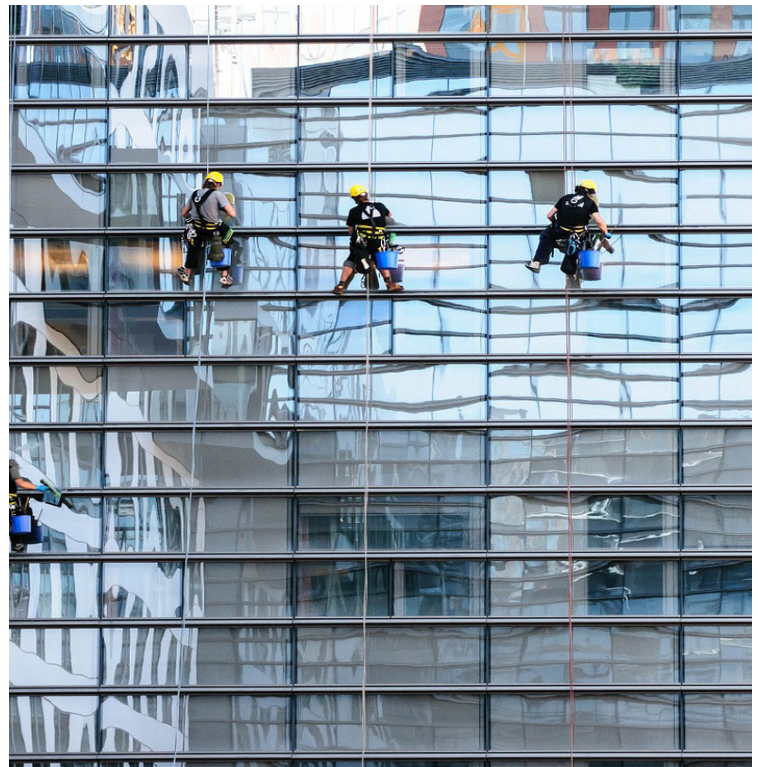
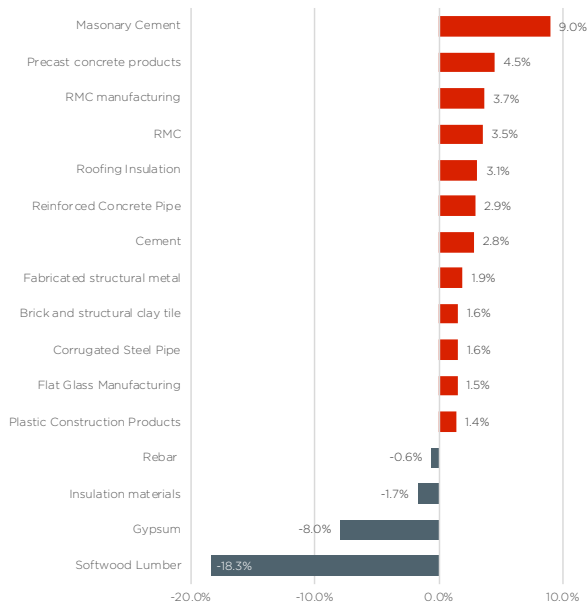


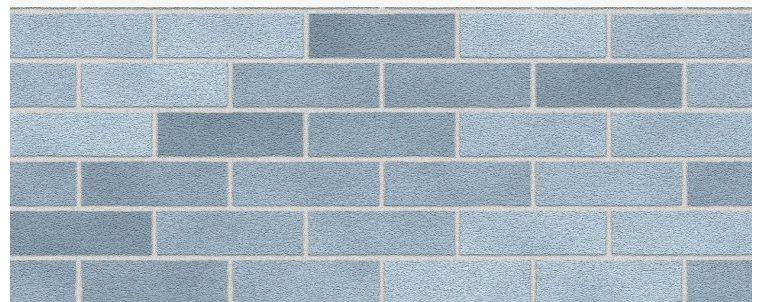
TABLE 1: MATERIAL PRICES

Material	Unit	Date	Price	Change Aug-Oct 19 vs Aug-Oct 18
Reinforced Concrete Pipe	"24, \$/ft	Oct-19	34.4	▲ 2.3%
Corrugated Steel Pipe	"36, \$/ft	Oct-19	34.7	▲ 1.8%
Roofing Insulation	Unfaced, \$/sf	Oct-19	8.3	▲ 2.3%
Masonry Cement	70-lb bag, \$/ton	Oct-19	10.6	▲ 7.9%
RMC	4,000psi, \$/CY	Oct-19	137.5	▼ -0.9%
Rebar	Grade 60, \$/CWT	Oct-19	54.6	▼ -0.6%
Steel Plate	ton	Sep-19	722.8	▼ -24.3%
HRC	ton	Sep-19	554.5	▼ -36.2%

TABLE 2: GYPSUM PRICE ANNOUNCEMENTS

Latest Material Price change				
Gypsum Wallboard	Jul-18	15%	Feb-19	15%*
Interior Finishing	Jul-18	3%	Jan-19	5%
Cement Board	Jul-18	4%		
Plaster				

* a 30-day notice will be provided in advance of a second increase date



Sources: ENR, LME, BLS, National Gypsum Price Bulletin, EIA

CURRENT CONSTRUCTION PIPELINE

Both, Miami and Tampa have seen very active construction markets over the past five years. Last year alone, contractors reported nearly \$14.8 billion in revenue in Florida.

Miami Construction Pipeline

The major projects (project value >\$100 million) in the currently known construction pipeline for Miami are listed in Table 3 (overleaf). The list takes only those projects into consideration for which the construction timeframes have been announced.

Our major projects pipeline in 2019 contains 70 active projects with an estimated project value of \$35 billion. Within this, a number of mega projects such as SoLe Mia and Miami World Trade Center will be developed over a long timeframe.

American Dream Miami, a \$4.5 billion mega development expected to commence on site imminently, is also scheduled to be delivered over the space of a decade.

A number of significant projects are in planning and pre-construction, as despite rising construction costs and a skilled labor shortage, developers appear keen to continue to invest in Miami.

Among these are the \$1 billion Magic City Innovation District and the \$1 billion Miami Freedom / Soccer Stadium. As these projects are still in pre-construction, it remains to be seen whether they commence and proceed as is being planned at the moment.

Other large-scale projects, including 300 Biscayne (98-stories tower), Chetrit Miami River, the 2nd and 2nd (an 82-stories tower) and One Brickell City Center an 80-stories tower by Swire Properties are in planning.



TABLE 3: MIAMI LARGE PROJECTS PIPELINE

PROJECT	Sector	Estim. Project Cost US\$, million	Start	Completion	Developer/ Owner	Residential units/condos	Commercial sq ft	Retail sq ft	Hotel rooms	Height (Stories)
LARGE-SCALE PROJECTS UNDERWAY (PROJECT COST >\$100m)										
American Dream Miami	Retail/Entertainment	4,500	Q4 2019	2035	Triple Five Group, Resorts World Miami	2,000	1,000,000		2000	
Sole Mia	Mixed use	4000	2017	2032	Turnberry, LeFrak					
Miami Worldcenter	Mixed use	4,000	2015	2022	Miami Worldcenter Associates	1,875	500,000	300,000	2050	
Paramount Miami Worldcenter	Residential MU	500	2016	Q3 2019	Daniel Kodosi, Art Falcone, Nitin Motwani	513				60
Marriott Marquis Miami Worldcenter Hotel & Expo Center	Hospitality + Leisure	N/A	2017	2019	MDM Group		500,000		1700	54
citizenM Hotel	Hospitality + Leisure	N/A	2019	2021	citizenM Hotels				351	12
Luma	Residential	250	Q3 2019	Q4 2021	ZOM	429				43
Retail @ Miami Worldcenter	Retail	N/A	2017	Q4 2019	Miami Worldcenter Associates			140,000		
Fifthfield at Miami Worldcenter	Mixed use	N/A	Proposed		Fifthfield Companies	533		15,100		47
Kenect 1	Mixed use	120	Proposed		Akara Partners	450		16,000		39
Kenect 2	Mixed use	200	Proposed		Akara Partners	468				79
One Worldcenter	Commercial	N/A	Q4 2019	Q1 2022	Hines		500,000			45
Metropica (Broward County)	Mixed use	1,500	2015	2022	Joseph Kavana	2,250	650,000			
Magic City Innovation District	Mixed use	1,360	2020	2035	Metro 1 Development, Lune Rouge, Dragon Global, Plaza Equity Partners					
Residences by Armani Casa	Residential MU	1,000	2017	Q4 2019	Dezer Development					56
Miami Freedom Park/Soccer stadium	Hospitality + Leisure M	1,000	2020	2022	Miami Freedom Park/Miami MLS franchise					
Redesign of I-395, State Road 836, Interstate 95	Transport	802	Q1 2019	Q4 2023	FDOT					
Link at Douglas	Residential MU	600	Q2 2019	2024	Adler Group and 13th Floor Investments	1,421	250,000	25,000		22 & 38
830 Brickell	Commercial	600	Q1 2019	2021	OKO Group		613,000			57
Aston Martin Residences	Residential MU	550+	Q1 2018	2020	G and G Business Developments (Coto family)	390				66
Brickell Flatiron	Residential	550+	2016	Q4 2019	CMC Group	549		40,000		65
Eysee Miami	Residential	550+	Q4 2017	2020	Two Roads Developments	100				57
SkyRise Miami	Hospitality + Leisure	540	2019	2023	Berkowitz					
One Thousand Museum	Residential	500	Q4 2015	Q3 2019	Louis Birdman, Gregg Covin and Kevin Venger	83				62
Okian Tower	Mixed use	350	Q4 2019	2022	Okian Group	153		64,000	236	70
400 Biscayne (X Biscayne)	Residential MU	350	Q2 2019	2021	Property Markets Group and Greybrook Realty Group	690	48,000	3,000		49
One River Point	Mixed use	500+	Q4 2019	2022	KAR Properties	1,426				65 & 65
Royal Caribbean Cruises headquarters	Commercial	300	2020	2022	Royal Caribbean Cruises		350,000			
Mount Sinai Medical Center expansion	Healthcare	275	Q1 2017	Q1 2019	Mount Sinai Medical Center					
Midtown 6	Mixed use	220	Q4 2017	Q1 2020	Magellan Development Group	447	1,820	40,000		32
The Collective	Residential MU	210	2020	2022	The Collective, Metro 1 Commercial					
Omni Terminal	Mixed use	200	2020	2022	Resorts World Miami	111				36
Ritz Carlton Residences, Miami Beach	Residential	200	2016	Q2 2019	Lionheart Capital and Elliott Management					
Grove Central	Mixed use	196	Q4 2019	2021	Grass River Property and Terra	288	135,000			23
Block 45	Mixed use	173	2019	2021	Atlantic Pacific Communities	600		23,000		29 & 29
Paseo de la Riviera	Residential	172	2017	Q4 2019	NP International	4			246	
AMLI Chiquita at Midtown Miami	Residential	150	Q1 2017	Q4 2019	AMLI Residential	720				12
Grand Station Tower	Mixed use	150	Q3 2019	2021	ROVR Development					31
Virgin Voyages Cruise Terminal	Transport	150	Q4 2019	2022	Virgin Voyates					
Miami Dolphins Training Complex at Hard Rock Stadium	Hospitality + Leisure	135	Q3 2019	Q2 2021	Miami Dolphins					
Sawyer's Landing	Mixed use	131	2020	2022	Swerdlow Group	506	72,000	290,000		
2000 Biscayne (Phase 1)	Residential MU	124	Q4 2019	Q4 2021	Kushner Family	393				36
Smart Brickell	Mixed use	120	2019	Q1 2021	Habitat Development	170		30,000	150	
Wynwood 25	Residential MU	116	Q3 2017	Q3 2019	Related Group, East End Capital	289		31,000		41
Maizon at Brickell	Residential	110	2017	Q4 2019	ZOM and Invesco Real Estate	262		15,000		24
Monaco Yacht Club and Residences	Mixed use	110	2018	2020	6800 Indian Creek LLC (Optimum Development USA)		39			11
Soleste Blue Lagoon	Residential	104	Q1 2018	Q3 2019	Estate Investments Group	330				
AC Hotel by Marriott/Element Hotel by Westin	Hospitality + Leisure	100	2019	Q3 2021	Metro 1 Development and Robert Finvarb			25,000	264	
Hyde Midtown Suites & Residences	Residential MU	100	Q4 2015	Q1 2018	Related Group and Dezer Development	40			60	32
Palazzo Della Luna	Residential	100	Q1 2018	Q3 2019	PDS Development	50				
Soleste Grand Central	Mixed use	100	Q1 2019	2021	Estate Investments Group and PTM Partners	360	2,250	6,500		
The Towers by Foster + Partners (1201 Brickell)	Residential MU	N/A	2020	2023	Florida East Coast Realty	660				81 & 79
ITC Miami World Trade Center of the Americas	Mixed use	N/A	2020	2023	BH Downtown Miami, LLC, ITC Center Miami, LLC		450		332	77
1111 Brickell Bay Drive	Mixed use	N/A	2020	2023	Aimco Properties	572		15,490	258	61
Missoni Bala	Residential	N/A	Q3 2017	Q4 2020	OKO Group OB Group Cain Hoy	249				57
1775 Biscayne	Residential MU	N/A	Q4 2019	2023	V Downtown Inc	444	64,500	45,600	200	53
Downtown 5th	Mixed use	N/A	2020	2024	Melo Group	1,042		12,500		52 & 52
Aria on the Bay	Residential	N/A	Q4 2015	Q3 2018	Melo Group	647				52
Nativo Miami	Residential MU	N/A	Q4 2020	Q2 2022	Newgard Development Group and Crescent	604				50
Una Residences	Residential	N/A	Q3 2019	2022	OKO Group	137				46
Met Square	Mixed use	N/A	Q3 2015	Q4 2018	MDM Group	391		40,000		43
Muze @ Met Square	Mixed use	N/A	Q2 2015	Q3 2019	ZOM Group	392		3,800		43
15th Street Hotel	Hospitality + Leisure	N/A	2020	2022	Mandala Holdings	362	55000	3,000	270	40
Yard 8	Residential MU	N/A	2017	Q2 2019	Wood Partners					28
Park-Line Towers @ MiamiCentral Station	Residential	N/A	2017	Q4 2019	Florida East Coast Industries	800				30 & 33
LARGEST PROPOSED PROJECTS										
300 Biscayne	Residential MU	1,000	Proposed		Property Markets Group, Greybrook Realty Partners, S2 Development	400			140	98
Chetrit Miami River	Mixed use	1,000	Proposed		Chetrit Group and JDS Development Group	1,449		266,000	207	
2nd and 2nd	Residential MU	N/A	Proposed		AVR Realty	637	25,000	9,245	266	82
One Brickell City Centre	Mixed use	1,000	Proposed		Swire Properties					80
Project 18	Mixed use	1,000	Proposed		City Center Properties LLC/Claro Development	392		67,000		78
Island Bay	Residential MU	N/A	Proposed		Melo Group	782	8,956			60 & 60
Mishonim Towers	Residential MU	N/A	Proposed		Mishonim Real Estate	800		7,100	120	63 & 55
Brickell City Centre expansion	Residential MU	544	Proposed		Swire Properties	972		92,330		62 & 54
ASRR Capital towers	Residential MU	N/A	Proposed		ASRR Capital	1,200	350,000	25,000	500	60 & 40
888 Brickell	Commercial	N/A	Proposed		Alphatur NV		304,950	3,510		50
LARGEST RECENTLY COMPLETED PROJECTS										
Royal Caribbean Cruise Terminal	Transport	2,447	2014	Q4 2018	PortMiami					
Caoba	Residential	N/A	2017	Q1 2019		444				43
2 Miami Central	Commercial MU	N/A	2016	2018	Florida East Coast		190,000			
Solitar	Residential MU	N/A	Q3 2015	Q3 2018	ZOM	438				50
Square Station	Residential MU	206	Q4 2016	Q3 2018	Melo Group	760		15,000		
SLS LUX Brickell Hotel & Residences	Mixed use	332	2015	Q3 2018	Related Group and Allen Morris Co.		450			84
Panorama Tower	Mixed use	800	Q1 2014	Q4 2018	Florida East Coast Realty	821	100,000	50,000	208	83
Paraiso Bayviews	Residential MU	N/A	2016	Q4 2018	The Related Group	396				44
Paraiso Bay	Residential MU	N/A	Q4 2015	Q1 2018	The Related Group	346				54
ParkSquare Aventura	Mixed use	300	Q2 2016	Q3 2018	Integra Investments					
Miami Beach Convention Center expansion	Hospitality + Leisure	615	Q2 2016	Q4 2018	City of Miami Beach					
Hotel Indigo	Hospitality + Leisure	N/A	2016	Q4 2018	SunView Companies and HES Group				230	
2500 Biscayne	Residential MU	N/A	2016	Q2 2018	Greystar	156		1,000		19
Gran Paraiso	Residential MU	N/A	Q1 2016	Q1 2019	The Related Group	317				54
Canvas	Residential MU	N/A	2016	Q3 2018	NR Investments	523		15,000		37
One Paraiso	Residential MU	N/A	2016	Q3 2018	The Related Group	276				53

Source: BLDUP, Miami Business Journal, Dharam Consulting (publicly available information as of October 2019)

Figure 20 shows our estimation of cash flow over the next few years. Quarterly construction cashflow has been very strong in 2017 and 2018, but slowed in 2019 as a number of very large projects completed construction. This includes for example the \$2.5 billion Royal Caribbean Cruise Terminal, Residences by Armani Casa, Panorama Tower, and the Miami Beach Convention Center expansion. On the back of large project starts in 2019, construction cashflow is expected to rise again in 2020 and more significantly in 2021.

If all – or the majority – of projects currently planned are being delivered over the same time horizon, this is likely to test the capacity of the local supply chain, pushing up prices, which have already risen considerably.

Despite a generally more cautious outlook for construction nationally, we expect the Miami market to remain strong over the next two years, unless any major shock to the market puts a halt on developments.

Our detailed analysis of the flow of trade resources within the current pipeline is summarized in figure 21 and table 3. The analysis shows that demand for resources was high in 2017 and in particular in 2018. A number of large projects were being delivered simultaneously, putting significant pressure on resources and on construction prices.

As projects proceed through development stages, we expect the current demand for steel trades to increase significantly in the first quarter of 2020. Following that, demand for MEPS/ enclosure trades and fit-out resources is expected to peak in Q3 2020 and Q2 2021, respectively.

The 5 largest contractors in South Florida delivering the majority of local projects, in particular large, high-rise and specialist construction are shown in figure 22.

Together these contractors were awarded \$2.8 billion worth of contracts in 2017 and \$2.4 billion in 2018.

FIG. 20: MIAMI - PROJECT CASHFLOW FORECAST

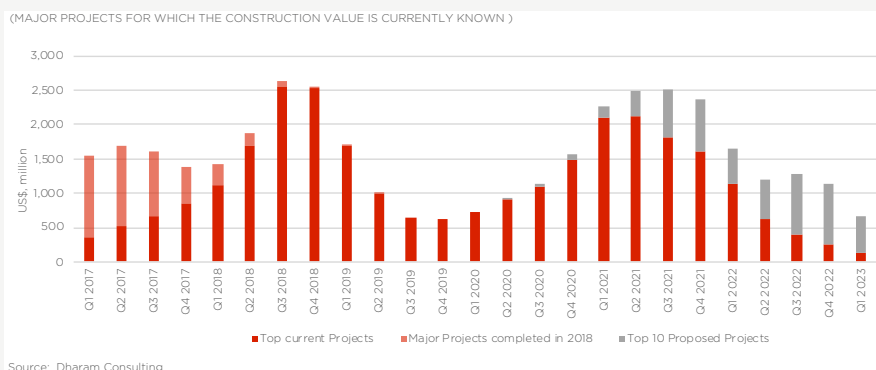


FIG. 21: MIAMI TRADE RESOURCE OUTLOOK - TOP 35 PROJECTS UNDERWAY

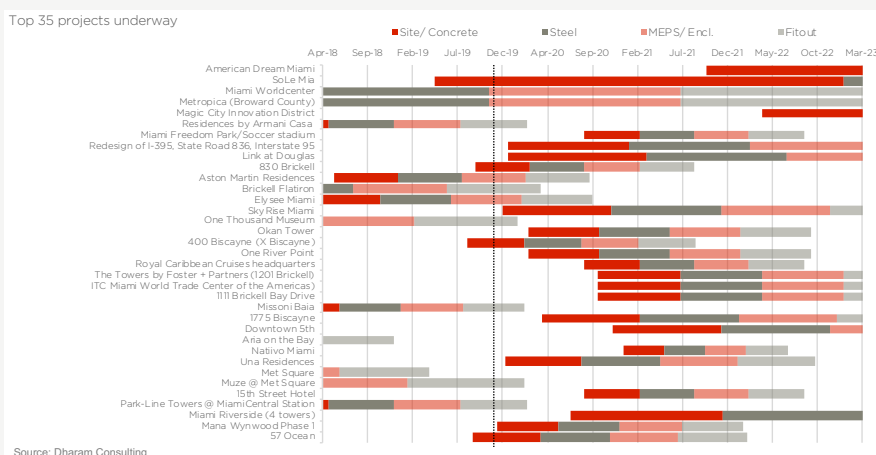
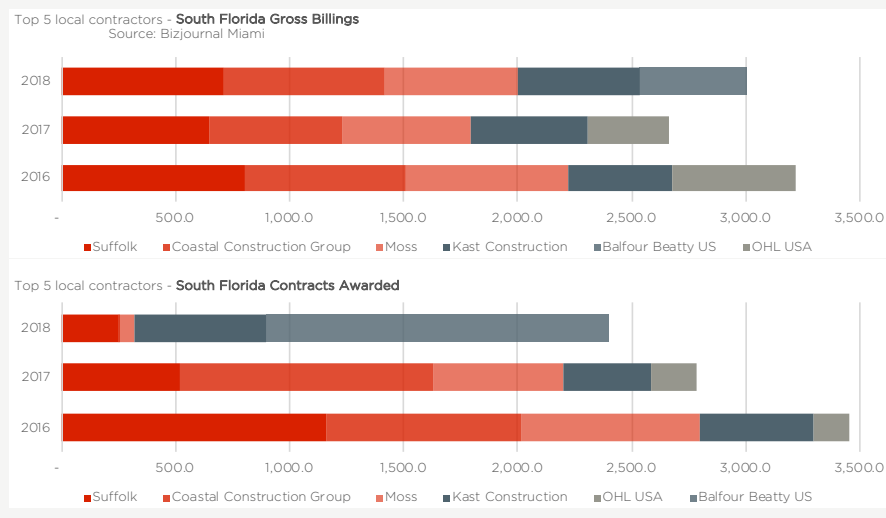


TABLE 4: ESTIMATED PEAK DEMAND FOR TRADE RESOURCES

Trade	Peak Demand current active projects (70 projects)	Peak Demand current active (70 projects) and recently completed projects (16 projects)
Peak Site Concrete	Q1 2019	Q3 2018
Peak Steel	Q1 2020	Q2 2019
Peak MEPS/Enclosure	Q3 2020	Q2 2020
Peak FITOUT	Q2 2021	Q1 2020
Dharam Consulting		

FIG. 22: TOP 10 LOCAL GENERAL CONTRACTORS BY LOCAL REVENUE



Tampa Construction Pipeline

The major projects (project value >\$20 million) in the currently known construction pipeline for Tampa are listed in Table 5. We record 64 active projects in the development pipeline, worth an estimated \$10.7 billion.

On the infrastructure side, investments are being undertaken to enhance connectivity and replace ageing structures. Most notably, Tampa International Airport recently embarked on the

\$543 million phase 2 of its expansion program, after completion of the \$979 million phase 1 in 2018. In addition, a \$814 million project to replace the Howard Frankland Bridge is scheduled to start construction in 2020, with the opening planned for 2024. Major new developments are currently under development and more are planned in and around Tampa's downtown area, which will transform the city over the next decade. Tampa's flagship program is the 50-acre, \$3.5 billion Water Street Tampa project, which is currently underway along the city's waterfront.

TABLE 5: TAMPA LARGE PROJECTS PIPELINE

LARGE-SCALE PROJECTS UNDERWAY (PROJECT COST >\$20m)					
PROJECT	Sector	Project Cost US\$, million	Start	Completion	Developer/ Owner
Water Street Tampa (16-blocks)	Mixed-use	3,000	2017	2027	Strategic Property Partners
Sparkman Wharf	Commercial MU	N/A	2017	Q2 2020	Strategic Property Partners
USF Health Morsani College of Medicine and Heart Inst	Healthcare	173	Q3 2017	Q4 2019	Strategic Property Partners
Edition Tampa	Hospitality	N/A	Q3 2018	Q1 2021	Strategic Property Partners
JW Marriot Hotel	Hospitality	N/A	Q1 2018	Q3 2020	Strategic Property Partners
1010 Water Street	Residential	N/A	Q4 2019	Q2 2021	Strategic Property Partners
1077 Water Street	Residential	N/A	Q4 2019	Q4 2021	Strategic Property Partners
815 Water Street	Residential	N/A	Q4 2018	Q4 2020	Strategic Property Partners
1001 Water Street	Mixed-use	N/A	Q3 2019	2021	Strategic Property Partners
400 Channelside	Commercial MU	N/A	Q3 2019	2021	Strategic Property Partners
Port Tampa Bay Channel Distrct	Mixed-use	1,700	2017	2030	Port Tampa Bay
Sky Center at TIA	Commercial MU	1,000	Q1 2019	2022	Hillsborough County Aviation Authority Board
Tampa International Airport Expansion Phase 1	Infrastructure	979	Q4 2014	Q3 2018	Hillsborough Aviation Authority
Howard Frankland Bridge Replacement	Infrastructure	814	2020	2024	FDOT
The Heights	Mixed-use	820	2015	2025	SoHO Capital LLC
The Pearl	Residential MU	500	Q4 2016	Q1 2019	SoHO Capital LLC
Heights Union	Commercial	N/A	Q1 2019	Q2 2020	SoHO Capital LLC, TPA Group
Seminole Hard Rock Hotel & Casino Tampa	Hospitality	700	Q2 2018	Q3 2020	Seminole Tribe of Florida
Tampa International Airport Expansion Phase 2	Infrastructure	543	Q1 2019	2023	Hillsborough Aviation Authority
Midtown Tampa	Mixed-use	400-500	2019	2021	Bromley Cos
Westshore Marina District	Mixed-use	400-600	Q4 2018	Q1 2021	BTI Partners
West River Redevelopment	Mixed-use	350	Q1 2019	2025	Tampa Housing Authority
Riverwalk Place	Commercial MU	350	Q1 2019	Q4 2021	Feldman Equities Inc., Tower Realty Partners and InTown Group
Florida Hospital The Taneja Center for Innovative Surger	Healthcare	256	Q4 2018	2021	Florida Hospital
Marina Pointe (3 towers)	Residential MU	250	2019	2022	BTI Partners
Sarasota Memorial Venice Campus	Healthcare	225	Q2 2019	Q3 2021	SMH
Sarasota Memorial Hospital Cancer Institute	Healthcare	220	Q2 2019	Q4 2021	SMH
James A. Haley VA Medical Center	Healthcare	149	Q3 2018	Q1 2022	Veterans Health Administration/US Government
Hyatt Place and Hyatt House	Hospitality/Leisure	140	Q1 2019	Q4 2020	HRI
St. Joseph's Hospital South (SJHS) Expansion Ph 1 and 2	Healthcare	112	Q2 2018	Q4 2020	BayCare Health System
St. Joseph's Hospital (West Tampa) expansion	Healthcare	126	Q2 2018	Q4 2019	BayCare Health System
The Residences at Tampa EDITION	Leisure+Hospitality	120	Q3 2019	2021	
The Pointe	Residential MU	100+	Q2 2019	Q1 2021	Westshore Point LLC
Manor Riverwalk	Residential	100+	2016	Q4 2018	Related Group
The Current At Rocky Point	Hospitality/Leisure	100	Q1 2017	Q3 2019	Lifsey Real Estate & Holdings Inc.& Pinnacle Hotel Management
Met West III	Commercial	N/A	Q2 2018	Q3 2020	MetWes
Museum of the American Arts and Crafts Movement	Hospitality/Leisure	90	Q2 2017	Q4 2019	Rudy Ciccarello
Cortona	Residential	N/A	Q1 2018	Q4 2020	LIST Developes
Dunedin Blue Jays Baseball Stadium Renovation	Hospitality/Leisure	80	Q2 2019	Q3 2020	Dunedin Blue Jays
Eleve 61	Residential MU	N/A	Q1 2019	Q4 2020	
102 East Tyler	Residential	70	2020	2022	Ronto Group
HealthHub at Bloomingdale	Healthcare	53	Q4 2017	Q2 2019	BayCare Health System
Hotel Ybor City	Hospitality/Leisure	50	Q2 2018	Q1 2020	Aparium Hotel Group
The Sanctuary at Alexandra Place	Residential	40	Q1 2019	Q3 2020	Taub Entities
USF St. Petersburg Residential Hall	Residential	33	Q2 2019	Q3 2020	USF
Hillsborough Community College Allied Health Building	Healthcare	23	Q4 2017	Q3 2019	Hillsborough Community College
Historic Kress	Mixed-use	N/A	Q3 2019	Q4 2020	Doran Jason, Jeannette Jason
Altis Grand Central	Residential MU	N/A	Q3 2017	Q4 2019	Altman Cos.
Park Tower Renovation	Commercial	N/A	Q4 2017	Q2 2019	Feldman Equities Inc.
Hyde Park House	Residential	N/A	Q4 2019	Q4 2021	Kolter Group
Straz Tower (AER)	Mixed-use	N/A	Q4 2019	2021	
AER Tower	Residential MU	N/A	Q4 2019	Q4 2021	American Land Ventures
Virage Bayshore	Residential	N/A	2017	Q4 2019	Ascentia Development Group
Arris	Residential	N/A	Q2 2020	Q4 2021	Ascentia Development Group, Batson-Cook Development Com.
Tampa Element and Aloft Hotel	Hospitality/Leisure	N/A	Q2 2019	Q2 2021	Bromley, Concord Hospitality partner
Westshore Village	Residential MU	N/A	2019	Q4 2020	ICON Residential
Seazen	Residential	N/A	Q3 2016	Q1 2019	ZOM USA
Current, an Autograph Collection by Marriott hotel	Hospitality	N/A	Q1 2017	Q2 2019	Lifsey Real Estate Holdings and Pinnacle Hotel Management
Hospital Wesley Chapel (North Tampa) Additions	Healthcare	N/A	Q1 2019	Q3 2020	BayCare Health System
Highwoods Bay Center II	Commercial	20		Planned	Highwoods Properties Inc.
Lafayette Place	Mixed-use	N/A		Planned	Hillsborough River Realty Company (HRRCC)
Altura Bayshore	Residential	N/A		Planned	Skyway Capital Partners LLC
Seasons Apartments	Residential MU	N/A		Planned	
Seasons Suites	Residential MU	N/A		Planned	

Source: BLDUP, Tampa Bay Business Journal, TIA Capital Improvement Program Project Status Report, Dharam Consulting (publicly available information as of June 2019)

Infrastructure works began in 2017 and the first developments within the program commenced in 2018, including the Tampa JW Marriott hotel, expected to open in fall of 2020, the 815 Water Street residential tower, and the Tampa Edition hotel and residences. The \$165 million USF Morsani College of Medicine and Heart Institute is also already underway, while 1001 Water Street, a 20-story commercial tower is scheduled to start in the final quarter of this year. Built out the development is planned to include more than 9 million square feet of residential, office, retail, educational, healthcare, hospitality and cultural spaces, along with public spaces and parks. Bromley Companies' Midtown Tampa, another large-scale development, broke ground in spring 2019 and is expected to be complete when Tampa hosts the Super Bowl in 2021. The \$500 million project includes 750,000 square feet of commercial space, 240,000 square feet of retail and entertainment space, residential units and a hotel. Other large-scale projects underway include the \$1.7 billion Port Tampa Bay Channel District and the \$820 The Heights mixed-use project. More projects are in the development pipeline, which if all proceed as planned will keep contractors active in the market busy in the near- to medium term.

Figure 23 shows our estimation of cash flow over the next few years. Quarterly construction cashflow has increased sharply in 2019 with the start of Water Street Tampa, putting significant pressure on the local supply chain and pushing up construction prices. Construction cashflow is expected to remain high over the next two to three years. Our detailed analysis of the flow of trade resources within the current pipeline is summarized in figure 24 and table 6. The analysis shows that demand for resources increased significantly since the start of this year and is expected to remain high as a number of projects are being delivered simultaneously. Given the current projects underway, we estimate that peak demand for concrete trades occurred in mid-2019, while we are currently approaching the peak for steel resources. Demand for MEPS trades is expected to pick up significantly over the course of 2020, with fit-out demand expected to peak in 2021.

Total local contractor revenues are estimated to have totalled \$3.2 billion in 2018, up from \$2.8 billion in 2017. The 10 largest contractors active in the Tampa market are shown in figure 25. Together the top 10 accounted for 49% of the market in 2018.

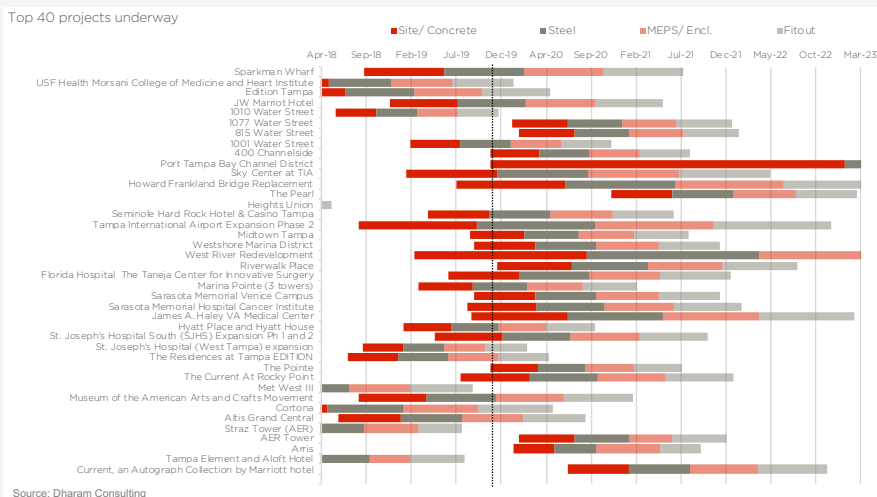
FIG. 23: TAMPA - PROJECT CASHFLOW FORECAST

(MAJOR PROJECTS FOR WHICH THE CONSTRUCTION VALUE IS CURRENTLY KNOWN)



Source: Crains Detroit, BLDUP, Dharam Consulting

FIG. 24: TAMPA - TRADE RESOURCE OUTLOOK - TOP 40 PROJECTS UNDERWAY

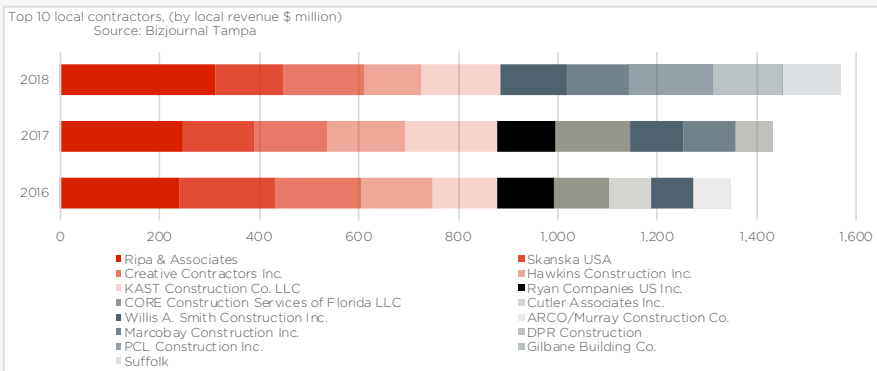


Source: Dharam Consulting

TABLE 6: ESTIMATED PEAK DEMAND FOR TRADE RESOURCES

Trade	Peak Demand current active Projects (Top 40 Projects)
Peak Site Concrete	Q2 2019
Peak Steel	Q4 2019
Peak MEPS/Enclosure	Q3 2020
Peak FITOUT	Q1 2021
Dharam Consulting	

FIG. 25: TOP 10 LOCAL GENERAL CONTRACTORS BY LOCAL REVENUE



BID SUBMISSION PRICES

Nationally bid submission prices rose by 5.6% in 2018 on average, according to Turner Construction. Price inflation peaked in Q1 2019 at an annual 6%. Since then the rate of bid submission price inflation has started to moderate slowly. Prices are now forecast to increase by 5.2% nationally this year, slightly down from 5.5% predicted earlier in the year.

Average bid submission price inflation in Tampa and Miami are estimated to have lagged the national average up until 2017. We estimate that average contractor bid prices picked up considerably since the start of 2018 to above the national average, on the back of an input cost pass-through and firm overheads & profits (figure 26).

More specifically, firm demand levels, the start of major projects and sub-contractor capacity constraints for specialist trades pushed up prices.

We expect input cost pressures to persist in the near term, as an increase in construction volumes in 2020/21 will maintain and even increase competition for contracting and labor resources in an already tight market. Price pressures may be moderately offset by slower material price inflation.

We expect bid submission prices to increase by 6.5% in 2019, above the forecasted US average. Assuming that projects will be tendered and start on site as planned in 2020, price inflation is forecast to reach 5% in next year (figure 27). After that, price inflation is expected to moderate in line with national trends.

FIG. 26: BID SUBMISSION PRICES

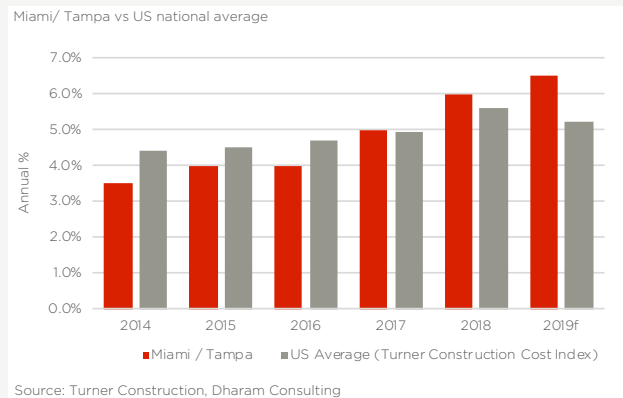
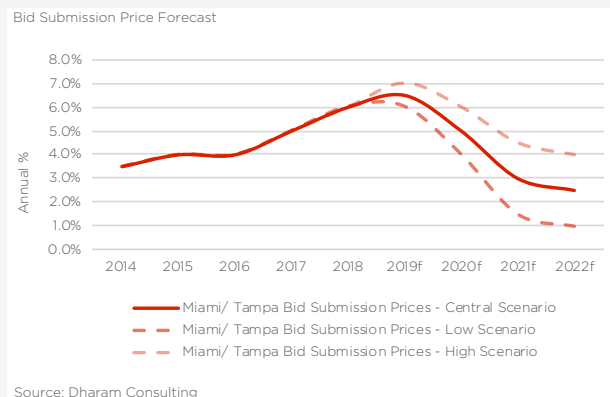


FIG. 27: BID SUBMISSION PRICE FORECAST



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