



CONSTRUCTION MARKET OUTLOOK

BOSTON & GREATER AREAS

December 2017

DHARAM
CONSULTING



Boston's building boom in recent years, the associated capacity constraints and cost pressures are well documented. This report assesses demand and supply factors driving the Boston construction market, with a focus on the impact on construction costs, risks and opportunities. With large projects underway and in the pipeline, we assess what the impact of the current project pipeline will be on construction costs and bid submission prices.

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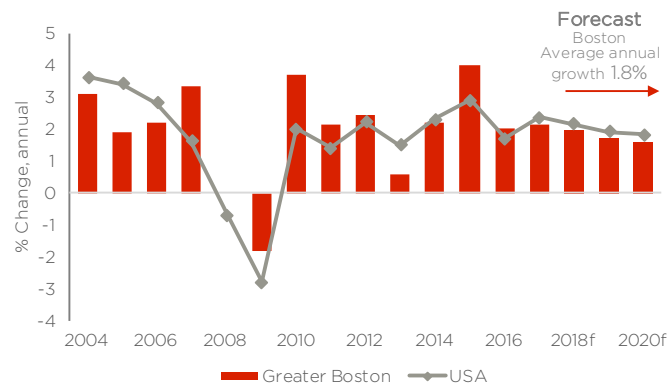
BOSTON ECONOMY

On the back of expanding education + health services, as well as professional + business services sectors, Boston's economy has seen strong employment and economic growth over the past years. Perspectives for the years ahead remain solid, but labor constraints dampen growth outlook.

Boston's economy has now expanded for its eighth consecutive year (Fig. 1) and is generally expected to continue to grow in the next three years to 2020. Employment creation is strong and unemployment rates are low. However, the pace of growth is expected to slow over the next three years to below the national average.

Growth is expected to be driven by continued job creation as companies expand in or relocate to the Greater Boston Area, and capital investment into the real estate and infrastructure sectors continue (Fig. 2). Sectors with the fastest job growth are construction; professional and business services; leisure and hospitality; and education and health services (Fig. 3). At the same time, the economy is already at or near full capacity and labor markets are tight.

FIGURE 1: BOSTON GDP GROWTH
Greater Boston: Boston-Cambridge-Newton

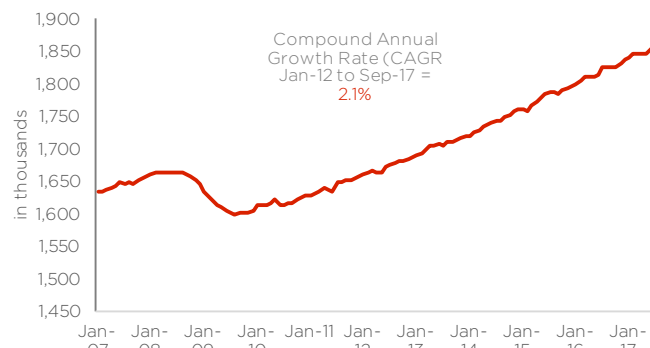


Source: BEA, Federal Reserve, Moody's Analytics

Unemployment remains low (Fig. 4). Wages and salaries are increasing, consistent with strong labor demand. According to the Boston Planning & Development Agency (BPDA), economic growth in the medium term may be dampened due to a lack of workers, as baby boomers retire and fewer young people come into the market. Positively, due to a low unemployment rate and an attractive job market for millennials, the Boston metropolitan area should be able to attract workers to maintain employment growth. Average wages in Boston are higher than the national average, across all major sectors, reflecting in part strong local demand, but also significantly higher living costs than the national average.

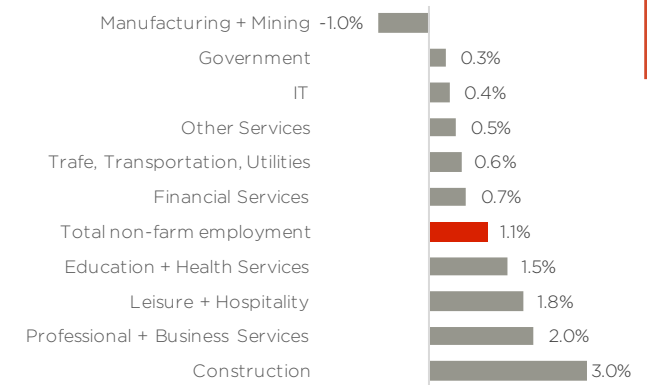
The Trump administration's expected federal fiscal stimulus from lower personal and corporate tax, as well as capital investment should support economic activity in Boston, but there is little clarity about policies and the timeframe of implementation, and therefore businesses are likely to hold off from making significant investments on the back of these.

FIGURE 2: EMPLOYMENT GROWTH
Payroll - Greater Boston: Boston-Cambridge-Newton



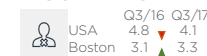
Source: BEA, Federal Reserve, Moody's Analytics

FIGURE 3: AVERAGE ANNUAL GROWTH BY EMPLOYMENT SECTOR IN BOSTON
2016-2020



Source: Northeastern University, 2017

FIGURE 4: UNEMPLOYMENT



During 2018, we expect a more definite impact of national political and policy decisions, including immigration, which may impact the labor market. Another uncertainty is healthcare. The future of the US Affordable Care Act and the potential loss of federal support for the state's public health care program is a big concern with potential uncertainty for the state budget that may impact other budget items, such as capital spending.

A wild card for Boston's economy is Amazon's announcement that it intends to build a second headquarters in the US. Amazon leased a large office space in the Seaport, Q2 2017.

KEY ECONOMIC FACTORS TO WATCH

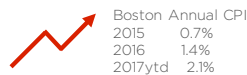
- Policy changes by the executive and/or legislative branches of government
- Federal Reserve's interest rate increases
- Global instability (North Korea, terrorism, Middle East, Eurozone)
- Labor market constraints



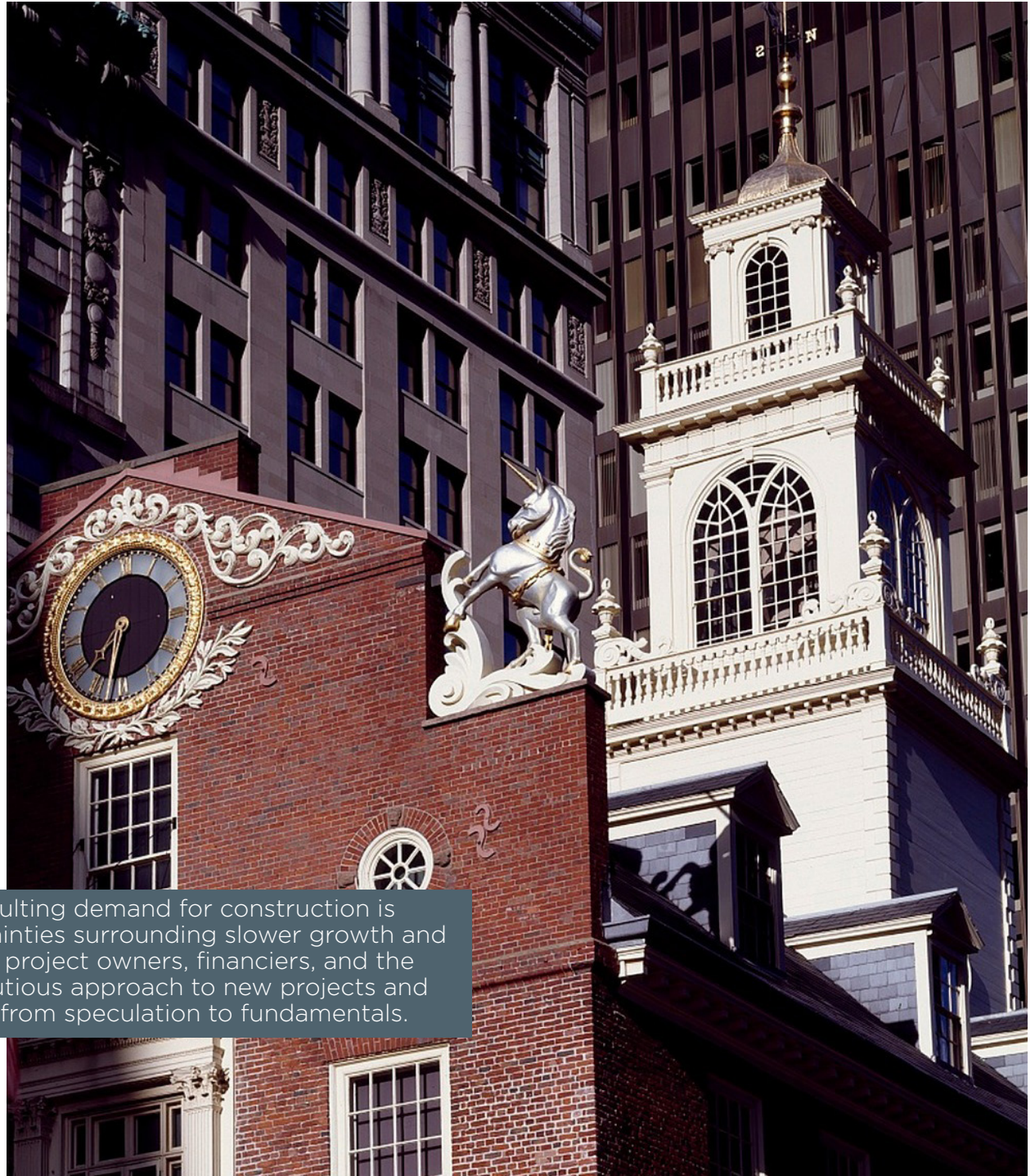
In its request for proposals, Amazon said it is looking for a metro area with at least one million residents, proximity to an international airport, mass transit, quality higher education, an educated workforce, a business-friendly environment and amenities that give it “the potential to attract and retain strong talent”. All of this makes Boston a strong contender.

Consumer price inflation has increased from an annual 1.4% at the end of 2016 to 2.1% in September this year (Fig. 5). Nationally, prices increased further from 0.9% in 2016 to 2.2% in September 2017. Expectations of higher future inflation and strong domestic demand have prompted the Fed to progressively increase interest rates. This has and is likely to continue to strengthen the US Dollar.

FIGURE 5: CONSUMER PRICE INFLATION



Our View: Whilst the wider economy and resulting demand for construction is judged to be solid in Greater Boston, uncertainties surrounding slower growth and labor market constraints are likely to prompt project owners, financiers, and the construction supply chain to take a more cautious approach to new projects and their risk, with a shift in demand for projects from speculation to fundamentals.



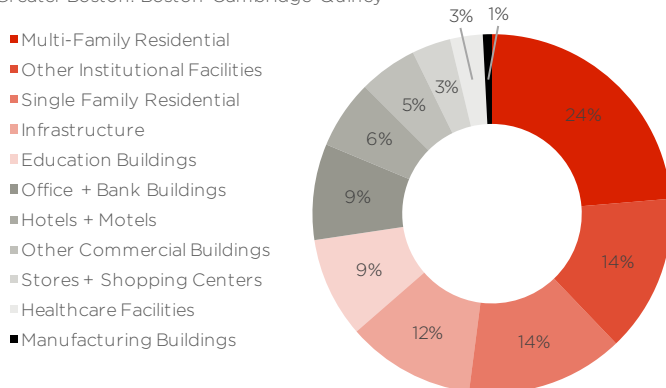
CONSTRUCTION MARKET INDICATORS

The analysis of the state of the Greater Boston construction market is based on official statistics, as well as our industry survey, conducted with architects, engineering consultants, developers, and construction managers active in the market. Their views give a unique insight into the outlook for the industry, drivers and barriers currently at play, and in particular potential changes in pipeline work and cost.

Construction spending strong in near term...

Nationally, construction continued to expand at a measured pace in 2017, rising by an estimated 4% compared to 2016. The consensus forecast expects further increases in construction spending in 2018 to 2021, averaging 4% per annum, however in volume terms the amount of work is predicted to be consistent at 2017 levels. Private construction remains firm, boosted by consumer and business confidence, and low interest rates. In contrast, the public sector has yet to see the boost from federal policy support, including any commitment through the promised infrastructure spending package by the Trump administration, with any announcement now pushed to 2018 at the earliest.

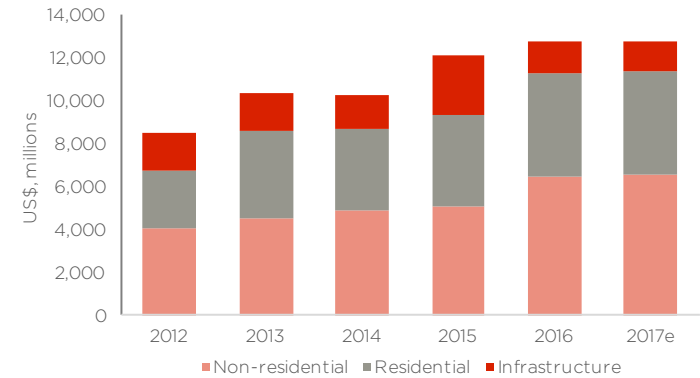
FIGURE 6: CONSTRUCTION SPENDING BY SECTOR 2016
Greater Boston: Boston-Cambridge-Quincy



Source: ENR, Dodge Data



FIGURE 7: CONSTRUCTION SPENDING
Greater Boston: Boston-Cambridge-Quincy

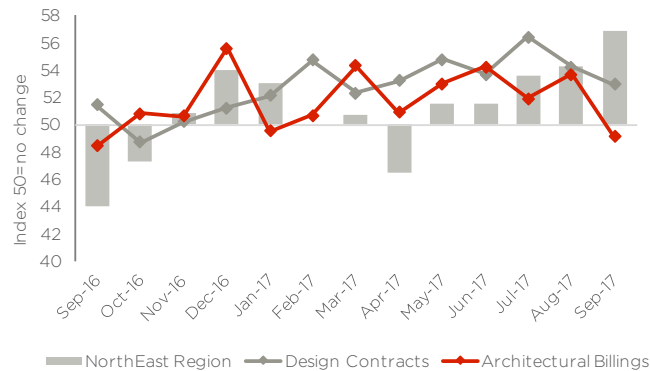


Source: ENR, Dodge Data

Adding to uncertainty for the construction sector are potential changes to federal policies, which may directly affect the cost and the supply chain of labor (by limiting immigration) and construction materials (through the introduction of further import tariffs), which could potentially put a brake on construction spending.

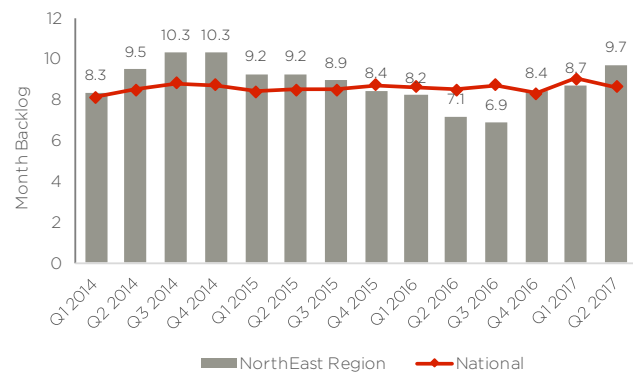
The building boom in Boston, reflected in the increase commercial, educational and residential projects, and strong construction employment growth, is well documented (Fig 6,7). Workload has benefited from economic growth, strong demand for space, growing pipelines and increases across nearly all sectors. Infrastructure spending has been slower, despite some programs such as the Logan International Airport capital investment. Overall, construction spending in Boston rose from \$8.5 billion in 2012 to an estimated \$12.7 billion in 2017, an increase of nearly 50%.

FIGURE 8: ARCHITECTURAL BILLINGS INDEX (ABI)



Source: AIA

FIGURE 9: CONSTRUCTION BACKLOG INDICATOR



Source: Associated Builders and Contractors

Whilst forecasters predict a slowdown in construction growth in the Boston Metropolitan areas from 2018, forward looking industry indicators paint a more positive picture. The Architecture Billings Index (ABI) for the North East, a construction indicator depicting billings growth for architecture firms, rose for the fifth consecutive month in September 2017 (Fig. 8). This growth reflects a steady increase in architectural and design services for firms and is a positive indicator for project demand heading into the pipeline. The construction backlog indicator for the North-East shows that the construction and contractor backlog sits at 9.7 months of future work across the board, 2 months more than in the same time last year, and the longest backlog in any region (Fig. 9.)

...but pipeline work appears to slow in the medium term

Over the medium term, our survey respondents share the view that construction growth will slow. They are more cautious and attach a higher degree of uncertainty regarding workload expectations over the next 5 years. Slower economic growth, coupled with concerns of supply outpacing absorption is expected to temper the start of new projects. In addition,

dampening the construction pipeline is the shortage of labor and continued escalating costs.

Resource constraints within the local market at subcontractor level and resulting cost escalations in recent years is expected to steady markets, creating a potential decrease in pipeline work. Project owners within our survey indicate that they are taking a harder look at construction pipelines and may pause new construction starts, concern for overbuilding begins to take precedence in specific markets.

Our view: Current market conditions support stronger workflow in 2018, with all indicators in the industry pointing to continued growth. Medium term, political and economic uncertainty, as well as capacity constraints, some concern regarding overbuilding and the delivery of major projects to the market, is likely to slow the construction pipeline from 2019 and the subsequent years.

GREATER BOSTON CAPITAL PROGRAMS AND PIPELINE

The local construction pipeline of currently known private sector work and public capital programs is expected to peak in mid 2018. Unless speculative schemes do actually enter the active pipeline and turn into active projects, the level of work delivered is set to trail off from their peak from end of next year.

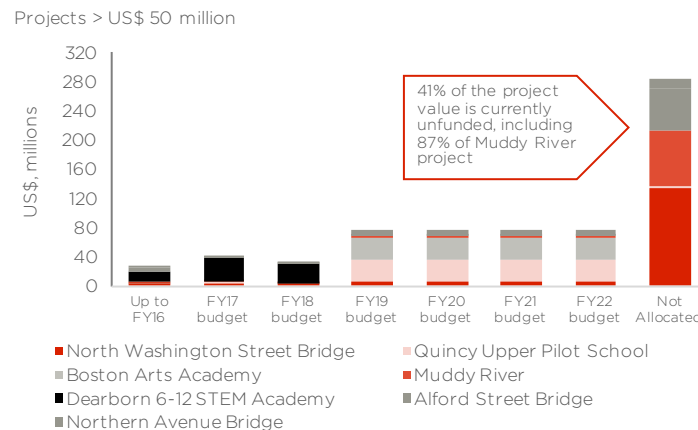
The current local construction pipeline is at a historic high, providing ample work for the industry, but also putting a lot of constraints on the supply chain, which is manifested in the availability of trade resources, labor and material cost rises.

To assess the current state of the construction procurement market, the impact on trade resources and cost inflation, we analyze the currently known project pipeline. Only large-scale projects are considered in this analysis (Value >\$100 million for private projects, value > \$50 million for public projects), which includes 20 major private projects, as well as major projects in the current capital budgets of the Mayor's office and the Massachusetts Government Division of Capital Asset Management and Maintenance (DCAMM).

On the public-sector side, the **Mayor's office** set out a capital budget of \$1.53 billion for the period 2017 to 2022. With an allocation of \$150 million and \$301 million for 2017 and 2018, respectively, the average annual capital spending for 2019 to 2022 is \$270 million. Six projects have a budget of over \$50 million and have a combined value of \$692 million (Fig. 10). The largest project is the North Washington Street Bridge (\$165 million) which is currently in design. Whilst significant in their own right, these projects standalone are not large enough to significantly impact the supply chain. In addition, many of the projects are currently not fully funded and it may well be that some of the projects will be pushed to the end of the budget period (2022), when the market is expected to be less busy.



FIGURE 10: MAYOR'S OFFICE CAPITAL BUDGET



Source: Boston Mayor's Office

**Mayor's Office Total
2017-22 Capital Budget
US\$ 1.53 billion**

**Education and Transportation 58% of
projects by value**

TABLE 1: LARGEST DCAMM PROJECTS (DECEMBER 2017)

Project	Project Cost US\$, million	Designer	Construction Manager	Estimated Completion
New Lowell Trial Court	200.0	Finegold Alexander & Associates	Dimeo Construction	Q4 2019
Chelsea Soldiers Home - Community Living Ctr. and Campus Framework	199.0	Payette	TBS	Q3 2021
DPH Jamaica Plain Campus, State Lab Renovation - CM Selection	82.6	Payette	TBS	TBD

TABLE 2: BOSTON - MAJOR PRIVATE PROJECTS PIPELINE (PROJECTS FOR WHICH BUDGET IS KNOWN)

Project	Project Cost US\$, million	Start Date	Completion Date
Wynn Boston Harbor	\$2,400	4-Aug-16	24-Jun-19
Bulfinch Crossing	\$2,000	1-Sep-16	1-Sep-20
MIT Kendal Square	\$1,200	1-Feb-17	1-Feb-21
115 Winthrop Square	\$1,020	1-Jun-18	1-Jun-21
Boston Children's Clinical Bldg.	\$1,000	1-Oct-17	30-Sep-21
Harvard Allston Expansion	\$1,000	1-Feb-17	1-Feb-20
Hub on Causeway	\$950	1-Nov-15	1-Nov-20
Echelon Seaport	\$900	1-Mar-17	1-Jan-20
One Dalton	\$750	14-Jan-15	31-Dec-18
Exchange South End	\$600	30-Sep-18	30-Sep-20
Fenway Center	\$580	30-Sep-17	30-Sep-19
Omni Seaport Hotel	\$550	30-Sep-18	31-Mar-21
Pier 4	\$500	1-Feb-16	1-Sep-18
New John Hancock Tower	\$350	1-Sep-16	1-Mar-19
121 Seaport	\$300	9-Jul-15	31-Mar-18
Garden Garage	\$300	1-Jun-16	1-Jun-19
399 Congress	\$200	1-Jul-17	1-Jul-20
Marine Wharf Hotel	\$156,	1-Mar-18	1-Mar-20
Parcel Q1	\$120	1-Aug-17	1-Aug-19
Total	\$14,876		

Source: BPDA, BLDUP

The **DCAMM** project pipeline currently consists of some 90 projects with a combined budget of \$1.1 billion. The three largest projects, listed in table 1 below, have a combined value of \$481.6 million. Two of these, the New Lowell Trial Court and the Chelsea Soldiers Home are large projects that are likely to add to the resource constraint in our forecast period (2018 to 2020).

Private sector projects take a much larger share in the Boston construction market than publicly funded projects, delivering significantly more large-scale schemes. The 19 major private projects in the current pipeline, excluding Terminal E for which the project value is yet to be confirmed, have a combined value of \$14.9 billion (table 2). All of these are planned to be delivered by 2021. Wynn Boston Harbor and Bulfinch Crossing are by far the largest projects currently undertaken. According to our survey participants, these two projects draw heavily on market resources and have added significantly to the capacity constraints currently seen in the market, which has caused construction cost to increase substantially. The projects are planned to be delivered by Q2 2019 and Q2 2020, respectively, at which time significant resources will be released to the market.

Figure 11 shows our estimates of the current pipeline of major projects in Boston based on the flow of project work and reported construction managers' revenues for 2016 and 2017. We expect the current pipeline to peak in 2018.

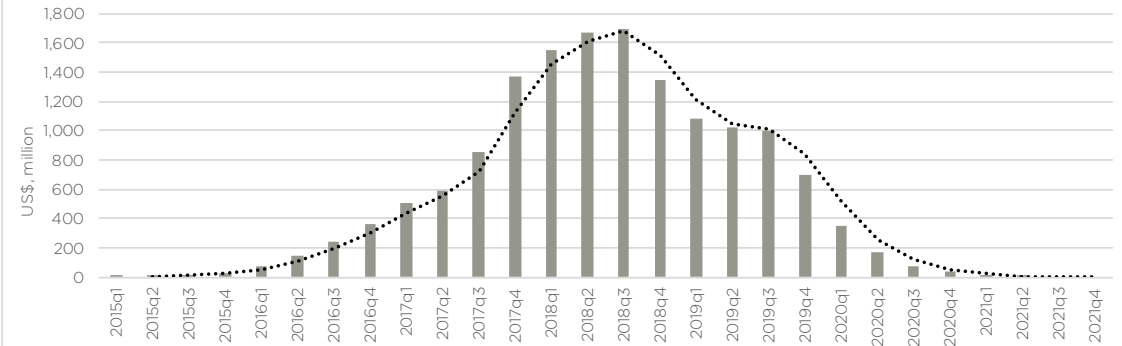
Our detailed analysis of the flow of trade resources within the current pipeline is summarized in table 3 and figure 12.

A number of major projects overlap, which has caused bid prices submitted by trade contractors to rise significantly. In addition, it also means that the procurement time for these trades for any new projects tendered over the next 12 months is likely to fall within the busiest period for these businesses.



FIGURE 11: BOSTON PROJECT PIPELINE - ESTIMATED CASHFLOW BY QUARTER

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



Source: BPDA, BLDUP, Dharam Consulting

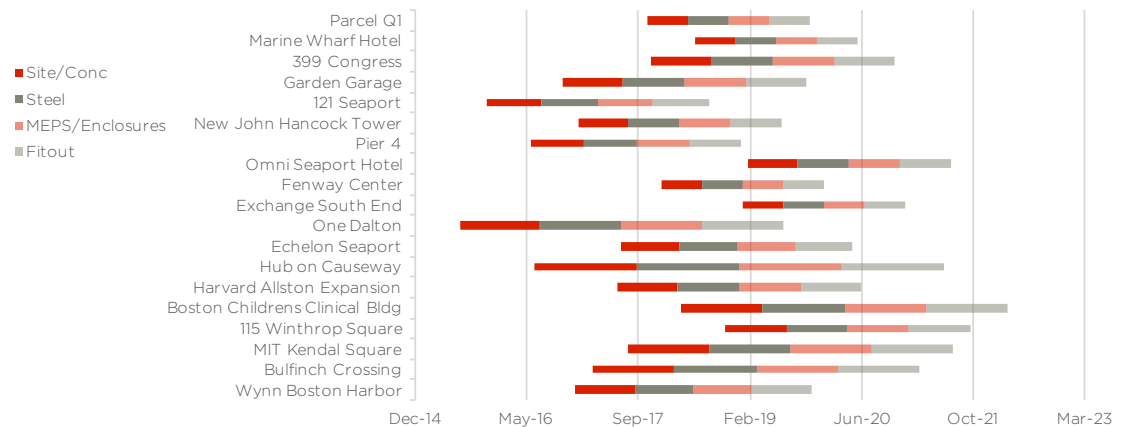
TABLE 3: TRADE RESOURCE DEMAND

Trade Resource	Peak Demand (20 major projects)
Peak Site Concrete	Dec-2017
Peak Steel	Apr-2018
Peak MEPS/Enclosure	Jan-2019
Peak FITOUT	Oct-2019

Source: Dharam Consulting

FIGURE 12: TRADE RESOURCE OUTLOOK

Current + upcoming major private projects



Source: BPDA, BLDUP, Dharam Consulting

CONSTRUCTION MARKET PRICING

The strong increase in pipeline work has put considerable constraints on the local construction supply chain. These constraints appear to be a direct consequence of the recession which hit the sector hard and has led to downsizings, consolidations, and a sharp decrease in the regional labor pool. Whilst labor costs have generally outstripped the rise in material cost in recent years, 2017 has seen a return in building material cost inflation.

Current construction costs

Building cost indices

Nationally, the ENR building cost (BCI) and construction cost indices (CCI), which are in input based indices, show that construction costs increases in recent years were mainly driven by labor costs (Fig.13). The CCI contains a higher la-

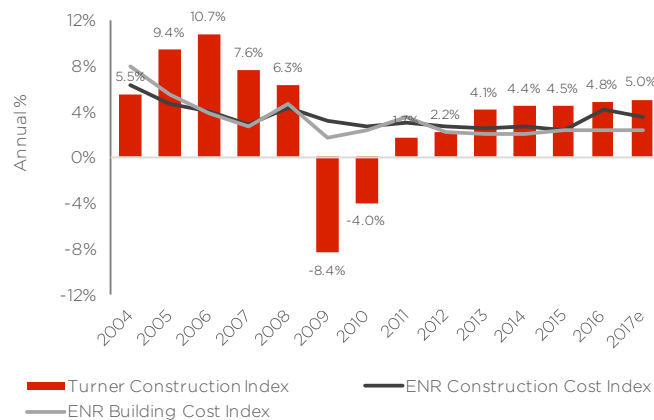
bor component than the BCI. The CCI increased by an average of 3% per annum between 2012 and 2017, with cost increases accelerating to 4.1% and 3.6% in 2016 and 2017, respectively. In contrast, the BCI was more stable, with costs rising 2.2% per annum.

The Turner Cost Index is an output based index, based on the change of price of the contractor cost, or bid submission prices. These output costs rose faster than input costs in recent years, averaging 4.2% in 2012-2017, but accelerating to an estimated 5% this year. Nationally, Turner expects outturn cost inflation to further accelerate next year, with prices predicted to rise by 5.5%. After that, price increases are forecast to slow to 3.5% in 2019 and 4% in 2020, on expectations of a turn in the construction growth cycle. Construction costs in Boston are signifi-

cantly higher than the national average (Fig.14). The composite index, which includes material and installations is 15% higher in Boston than the national average. As the figure below shows, material prices do not vary significantly across the locations. In contrast, labor costs vary sharply. In Boston, construction labor costs are on average 33% higher than the national average.

Over the last two years construction input cost inflation has outstripped the cost increases nationally (Fig. 15). The ENR index for Boston shows that construction costs rose by 5.8% and 4% respectively in 2016 and 2017. Our analysis of output costs in Boston shows that prices rose by 6% and 5.5%, in 2016 and 2017 respectively (Fig. 16).

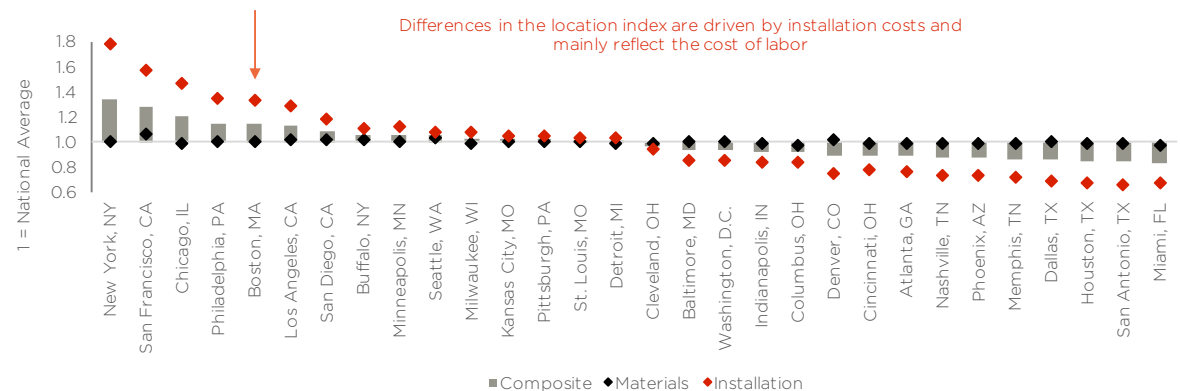
FIGURE 13: CONSTRUCTION COST INDICATORS



Source: ENR, Turner Construction

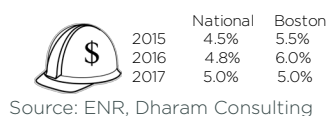
FIGURE 14: LOCATION COMPARISON

Construction Cost Index



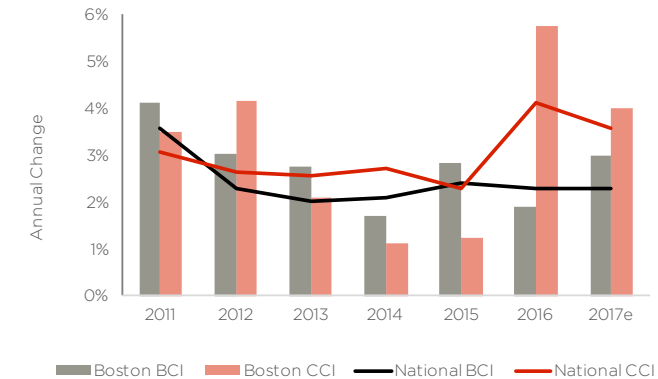
Source: ENR

FIGURE 15: CONSTRUCTION OUTTURN (BID SUBMISSION) PRICES



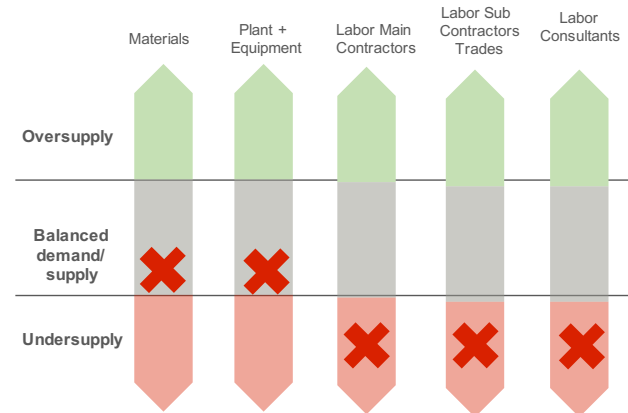
Source: ENR, Dharam Consulting

FIGURE 16: BOSTON CONSTRUCTION COST INDICATORS



Source: ENR

FIGURE 17: LOCAL MARKET RESOURCE SUPPLY AND DEMAND



Source: Dharam Consulting Industry Survey

Local market capacity

Our survey shows that due to the high level of work, the industry currently experiences a lack of capacity when it comes to labor across main contractors, trades and consultants. There are some constraints on material supply and plant + equipment, but generally these are not as pronounced as on the labor side (Fig. 17). The supply chain expects these conditions to persist over the next three years. Consequently, we expect pressure on bid submission prices to persist in the near term.

Input costs - Materials

After a number of benign years, material prices have increased significantly due to global and domestic factors.

We expect to see material prices fluctuate in the near term, depending on international demand and domestic policy changes, with regards to potential tariffs and other import restrictions.

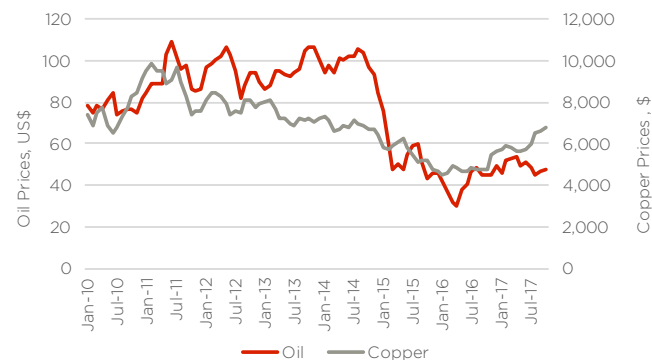
There is little pressure from oil prices, and resulting energy costs, as prices continue to move within the \$40 to \$60 per barrel range, which is not a level generally seen as putting significant upward pressure through the supply

chain. In contrast, copper prices have significantly increased since the beginning of 2016 and rose 20% in the year to October 2017.

Copper price changes are typically reflected in the cost of MEP related materials, which are expected to increase as a result (Fig. 18).

Steel is one area, where the current administration promised to impose import tariffs on national security grounds. The probe into the matter and pursuit of multilateral talks to reduce excess capacity is currently delayed however, with the administration first wanting to address other top-priority issues. The likely outcome could be tariff rate quotas where the level of tariff changes dependent on the volume of imports. This structure serves as a downside floor and upside cap on steel pricing so they do not get out of control either way. Steel prices have risen markedly over the course of 2017, rising by 18% in the year to Q3 2017. Fabrication selling prices rose by 6% over the same period (Fig. 19). Depending on any policy changes in 2018, the impact on steel prices is potentially sizeable. At the same time, US production is likely to be ramped up under any new policies, which should level out prices.

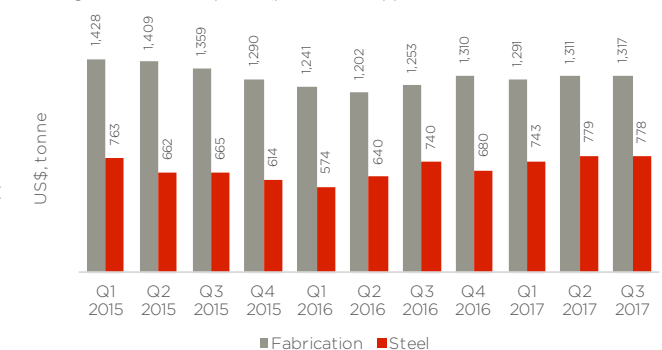
FIGURE 18: COMMODITY PRICES



Source: LME, IMF

FIGURE 19: STEEL

Average external sales prices (per tonne shipped)



Source: SteelDynamics

Cement prices have maintained a consistent increase in recent years, rising by 5% in the year to October 2017 compared to the same period a year earlier. The price increases closely mirror the construction spending growth, and the health of the industry will determine price levels in the years ahead. Should any national infrastructure package commence, prices of cement are likely to spike, until then, price increases are likely to remain steady.

In contrast, the cost of gypsum is more volatile. After a drop in early 2016, gypsum price inflation has risen substantially in 2017 and is currently at 10% on a three-months basis. For 2017 year-to-date as a whole, prices have

increased by 6% compared to a year ago. The latest price announcements from the National Gypsum Price Bulletin indicated that gypsum is likely to see the most price increases in 2018 (table 4).

Lumber costs jumped in 2017 due to a new tariff of up to 24% on imported Canadian lumber, which in turn allowed US mills to raise quotes. This has caused the price of framing lumber to spike (Fig. 20). Adding to price pressures is strong residential demand and the higher demand from hurricane damage.

Other materials costs, such as for plastics and flat glass, have seen a much smaller uptick in prices.

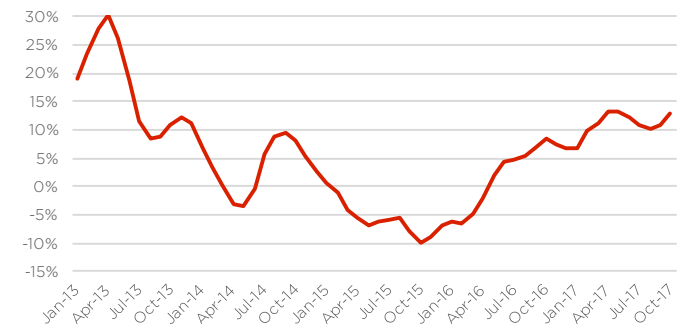
TABLE 4: PRICE ANNOUNCEMENTS

Material/ Price change	January 2018	June 2018
Gypsum Wallboard	+15%	+15%
Interior Finishing	+7%	
Cement Board	+10%	
Plaster	+7%	

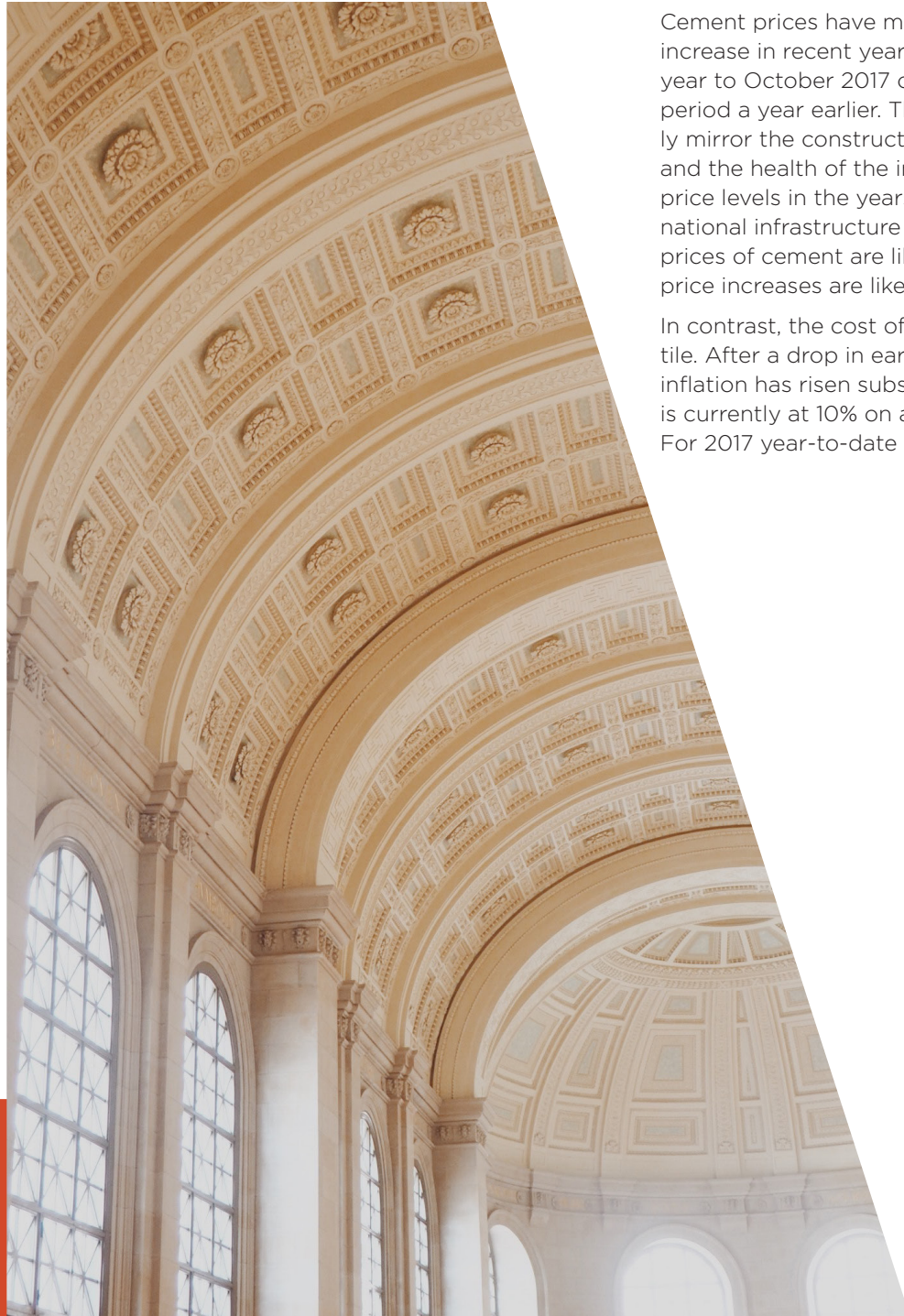
Source: National Gypsum Price Bulletin

FIGURE 20: SOFTWOOD LUMBER

Annual %, 3-months rolling average



Source: BLS



Input cost - Labor

Construction employment has increased substantially between 2010 and the end of 2016. Since then, the growth in construction employment has slowed, which is attributed to a shortage of available workers (Fig. 21). Indeed, labor shortages continue to be a challenge for the industry as high demand has put constraints on labor supply, in particular skilled labor. Stricter government policies around immigration appear to exacerbate the problem. While our survey shows that companies are investing in training programs, while legislative reform may provide support in the medium term, currently capacity constraints are putting pressure on the wage levels.

According to our industry survey, constraints are particularly visible on the sub-contract and architecture/ engineering side, which appear to be stretched. As a direct consequence, productivity and quality have become concerns.

Outlook for prices

Industry view

Our survey participants expect bid submission prices to further increase over the next three years, though the pace of inflation is expected to slow after 2018. Pricing expectations reflect the rising uncertainty around project awards. Clients could become more cautious in the medium term and could start putting pressure on the construction supply chain to negotiate prices. At the same time some larger construction managers appear to promote slower cost escalation for projects starting in 2019 in order to encourage pipeline volumes to continue in 2019 and beyond.

Overall however, any price adjustments due to softer demand are likely to be outweighed by continue pressure from input costs, mainly from material, energy and to a decreasing extent labor costs which suppliers will seek to pass on clients.

Dharam Consulting view

We expect input cost pressures to persist in the near to medium term. Demand throughout the country and the region remains strong currently, while impacts from potential changes in trade policies and natural disasters, i.e. post-hurricane reconstruction are putting further upward pressure on material and labor costs.

Pre-hurricane, many locations in the US were already facing a labor shortage, and the increased demand in the South of the country is likely to push up wages in these locations beyond the national average. Whilst higher wages will draw in additional workers into locations such as Texas, it is expected that this will impact neighboring area rather than extend nationally.

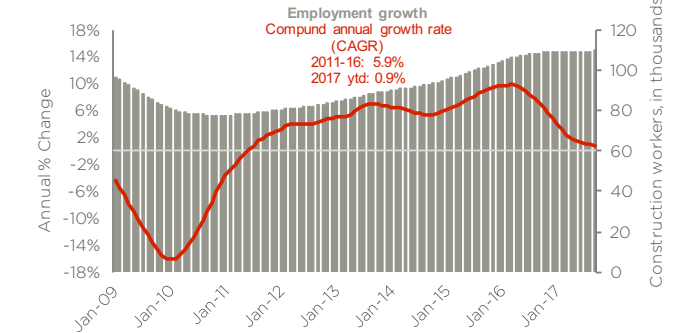
Boston is likely too far removed to feel a direct impact of an outflow of labor resources. Material prices were already on an upward trajectory before hurricanes Harvey and Irma made landfall in the US. Reconstruction efforts are not expected to lead to substantial shortages of supply nationally, and with the exception of lumber, additional price increases on top of the current projections are not expected.

Changes in trade policy or any ramp up associated with a large infrastructure package would potentially have a more significant impact on availability and cost of labor and materials. However, the details of either with regards to scale and or scope are not clear and the industry will have to wait and see for any announcement.

Our analysis of current and projected construction manager's revenues in Boston, as well as large scale projects in the project pipeline (Fig. 22) shows that work is expected to peak next year, which we expect is going to coincide with the peak construction output inflation in the current cycle.

FIGURE 21: CONSTRUCTION WORKERS

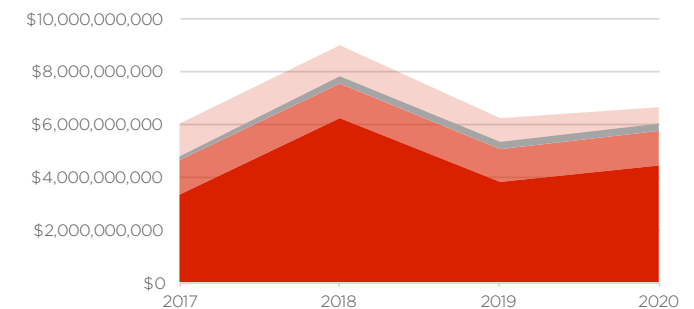
Greater Boston: Boston-Cambridge-Newton
12-months moving average



Source: BLS

FIGURE 22: BOSTON IN-PROGRESS CONSTRUCTION PROJECTIONS

Other ■ Mayor's Office ■ DCAMM ■ Private sector (top 20 projects currently in pipeline)



Source: Construction Managers Revenues, BPDA, DCAMM, Mayor's office, Dharam Consulting

In particular next year's summer slammer projects – schemes delivered between June and September 2018 – are likely to feel the brunt of the peak in local construction cost escalation.

The rise in bid submission price is expected to slow from 2019. In particular, larger projects being estimated in 2018 for a 2019 start are expected to see lower rates of price increases.

However, based on current projects in the pipeline, we do not anticipate prices to decrease over the next three years. Schemes currently underway in the Boston market are expected to keep the supply chain sufficiently busy.

In addition, given the more uncertain medium-term outlook for the business environment, we do not expect the local construction industry to invest heavily in capacity unless any major project commitments are made and contracts are in place.

Construction output prices rose by 5% in 2017 and are forecast to increase by 6% in 2018. After that, our central scenario foresees price escalation to slow to 3% in 2019 and 2% in 2020.

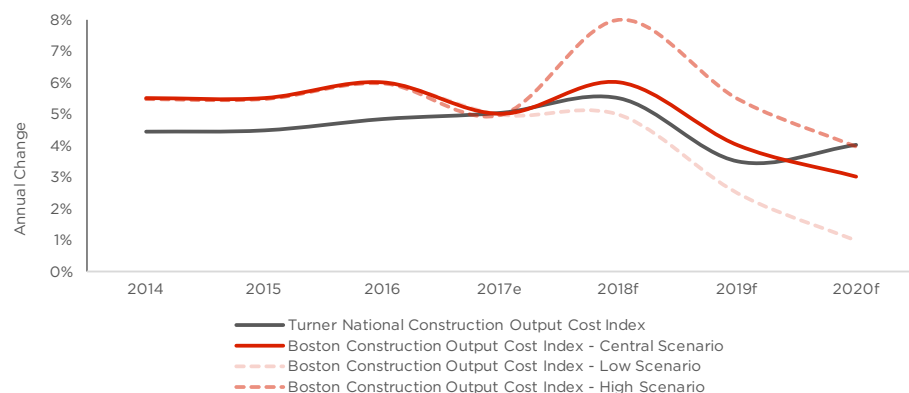
If a large national infrastructure package would be announced next year that would benefit Boston, demand could increase beyond levels currently foreseen, which in turn

could push construction price inflation back up to recent levels.

Similarly, should the cost of key materials increase significantly due to changes in trade policies, this could push up prices stronger than forecast.

On the downside, should work levels in the current pipeline not be replaced with sufficient projects due to a drop in demand, pricing levels could stabilize a lot quicker than currently envisaged.

FIGURE 23: BOSTON CONSTRUCTION BID SUBMISSION PRICE FORECAST



Source: Turner, Dharam Consulting

Our view: On the back of strong construction volumes next year we are likely to see competition for contracting and labor resources continue, while at the same time many building material prices are also rising. This means that construction costs inflation will remain high in the short term. As the pipeline peaks in mid 2018, cost escalation is expected to trail off modestly from 2019, but is likely to remain positive through to 2020. Skilled labor shortages are not only adding to cost escalation but also to wider project risks, including schedule risk. Whether the cost increases in materials seen over the course of 2017 were driven by political rhetoric around changing import policies, or based on a fundamental strengthening in demand remains to be seen. Any significant additional import tariffs on construction materials, most notably steel, could have a profound impact on the availability and costs of products.

KEY POINTS AND IMPLICATIONS

Key Points

The Boston construction pipeline is expected to peak in 2018 and the competition for contracting and labor resources likely to be sustained in the next year.

Bid activity in the medium term is expected to decrease due to fewer projects in the pipeline. We expect market activity in terms of new projects to slow moderately from 2019.

The rise in bid submission price is forecast to slow from 2019 due to fewer projects being let.

Labor costs have driven construction inflation in recent years, but material prices could outpace labor cost increases in the medium term.

Implications

Efficient risk Management

Of the factors necessary to achieve growth in a potentially slower market in the medium term, efficient risk management should rank high on the agenda of the industry.

Indeed, resource capacity constraints in recent years have added to wider project risks, including schedule risk.

Risks to budgets and schedules are typically attributed to changes in project scope, delays and unrealistic timeframes, and unclear project objectives and business case, as well as resource constraints, which can also impact on the quality of work.

The potential for such incidents could be decreased significantly by better risk management and removing sources of uncertainty. Key factors include:

- Design completion,
- Efficient project supervision
- Finding and investing in the right people

- Considering different procurement options
- Managing interface risks.

Managing procurement complexity

The current large projects in the pipeline mean that procurement complexity is likely to continue to challenge delivery, particularly where sectors are disproportionately affected by supply-chain pressures.

Client organizations and their consultants should therefore invest effort into ensuring that their project attracts the best possible interest. Successful delivery in a transitioning market requires good planning to foster and maintain industry collaboration and to avoid adversarial relationships with the supply chain during project execution, which too often happens in changing market conditions. Some key factors include:

- Allocating a sensible timeframe for pre-qualifications and the bid period, and ensure contractors are notified in advance to enable allocation of bid resource.
- Providing clear bid information, with precisely defined specifications and interfaces for example, as opposed to quantity.
- Offering equitable contract conditions, along with contract mechanisms that have positive impacts on bid price and the overall commercial offer; Appropriate use of single-sourcing or two-stage bid process according to project specifics with incentives and risk sharing.
- Including early trades to secure some element of fixed price in the first stage.
- Undertake scenario planning as uncertainty and volatility in markets require greater attention to the assessment and modelling of the financial viability of developments.





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