

CONSTRUCTION COST NOTE SEATTLE

April 2019



This note provides an overview of the Seattle construction market, assessing the recent trends in building costs and providing Dharam Consulting's view on the outlook for prices.

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DHARAM CONSULTING VIEW

Construction levels remain at high levels in 2019, but are starting to level off as the market cools. Nevertheless, capacity constraints are still evident as contractors and sub-contractors are busy, which will maintain pressure on prices this year. Fewer project starts in 2018 and 2019 are expected to ease construction price escalation modestly from 2019. Though price increases are likely to remain positive through to 2022.

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

- Corporate confidence is strong, but a change in sentiment and slower economic and construction growth at the national level could impact the regional market.
- Continued high level of pipeline work; the slowing in 2019 expected to be moderate. Large masterplan and transportation projects will sustain workflow, but these are phased over long time periods and roll-out will be subject to market demand. We suspect that changing market conditions will push the delivery time of some of these schemes backward.
- High construction cost and rise in interest rates leads to some projects being reviewed.
- Labor constraints put a floor on construction costs. Labor capacity constraints are impacting both on (skilled) labor cost and construction durations
- The local market continues to face capacity constraints on the trades side, with sub-contractors able to pick and choose their work and pushing through price increases to bolster their margins.

CONSTRUCTION COST DRIVERS

Economic growth in Seattle has outpaced wider US growth in recent years on the back of a buoyant performance of the region's strong technology, maritime and aerospace industries. Employment growth has been strong, as Seattle-area technology companies expanded their workforce, which is also adding a large number of indirect and induced jobs.

The city's innovative legacy is tied to Boeing and Microsoft, but Amazon has been the main driver of workforce growth more recently, adding some 40,000 jobs between 2010 and 2018. The growth of high-skilled tech jobs in turn drew Facebook and Google to expand their footprint in Seattle.

Whilst there is a widespread expectation that growth will slow this year, there are no signs of an imminent sharp decline in the city's economic fortune.

At the national level, the U.S. economy is performing very well. The growth path has been supported by pro-cyclical tax cuts, an accommodative regulatory environment for businesses, and increased government expenditures, resulting in record low unemployment rates, profit growth, and strong consumer confidence.

Expectations of higher future inflation and strong domestic demand growth have prompted the Fed to progressively increase interest rates. US growth is expected to slow this year as tighter financial conditions, fading fiscal boost, a slowing housing market, and weaker global demand put a break on the pace of the expansion.

Seattle is unlikely to be immune to a wider slowdown in growth. In addition, the widening affordability gap in the residential market is being cited as a major issue facing the region, and addressing housing accessibility will be critical to the city's ability to continue to grow.

The expanding tech sector has fuelled a construction boom, which is transforming the Seattle downtown area. Construction has been driven by strong demand for commercial space for corporate clients, residential demand for the city's workforce, as well as large scale infrastructure investments, such as the international airport and transit projects.

Office construction has been particularly strong, as Amazon,

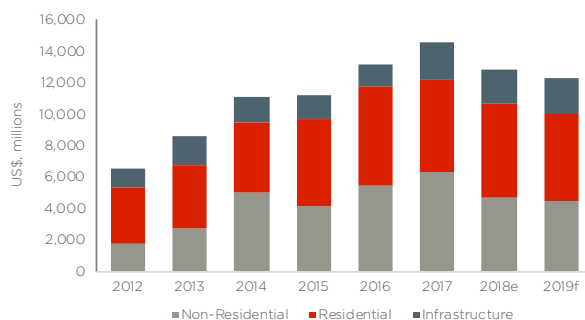
Facebook, Google, Expedia, Microsoft and other companies are expanding their commercial real estate footprint across the city. Residential construction is still the largest construction sector in Seattle, accounting for 60% of projects and 45% in project value of projects currently underway.

Construction starts peaked in 2017, resulting in record levels of work in 2018. Since then, the pace of construction starts has slowed, due to fewer commercial projects commencing on site (fig. 1). Industrial, hospitality-related projects also fell. Multi-family projects continued to increase last year, with seven projects valued \$100 million or more starting in 2018, including the \$516 million 1200 Stewart Street, the \$450 million Seattle Times mixed-use complex, and the \$200 million Spire tower.

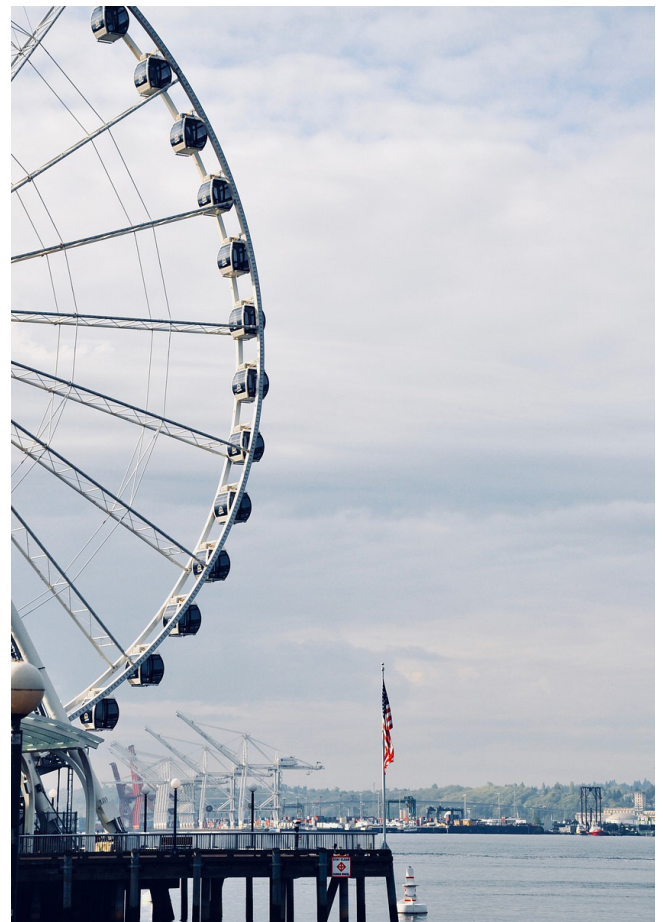
The further decrease in project starts in 2019 is expected to be moderate and overall starts remain at a high level. There are some major project starts scheduled for 2019. On the transport side, the \$2.77 billion Lynnwood Link Extension and the \$413 Federal Way Link Extension are the largest projects to commence this year. Elsewhere in the sector, Expedia is scheduled to commence constructing its headquarters, with the \$640 million Phase 1 planned to start on site in Q2 2019.

FIG. 1: SEATTLE CONSTRUCTION STARTS

Construction Starts
Seattle-Tacoma-Bellevue



Source: ENR, Dodge Data



Construction input costs in Seattle are higher than the national average according to the ENR. The composite index, which includes material and installations (mainly common labor) was 5% higher in Seattle than the national average in 2018 (Fig. 2). The index for labor (installation) was 7% higher than the national average in 2018, as local labor costs have been rising faster than elsewhere due to strong demand.

The ENR building cost index, which includes materials and skilled labor, recorded a 3.3% increase in 2018 on average nationally. **Building input costs rose 2.6% in Seattle in 2018, due to a slower rise in material costs.**

Whilst nationally building cost inflation slowed during the first quarter of this year, the pace of cost increases picked up in Seattle. In Q1 2019, the BCI recorded a 4.8% year-on-year increase. Common labor cost increased 5%, skilled labor cost rose 4.7% and material cost were up 4.4% over that period.

Construction employment growth in Seattle has been firm in recent years.

Construction job growth far outpaced job increases in the wider non-farm sector. In 2018, construction employment in King County rose by 5.7% or 4,300 jobs, and surpassed pre-recession 2007 peak levels (fig. 3).

Despite documented labor shortages across many U.S. markets, average national wage rates have not increased significantly, though price adjustments are not uniform with specific trade that are high in demand commanding more significant hourly wage increases in particular in some high-growth urban markets.

According to ENR data, labor cost increases in Seattle, especially for common labor, significantly outpaced the national average.

The Seattle common labor index was up 6.5% in 2018 compared to 2017. The skilled labor index rose 2.1% over the same period in line with the national average (2%). In the first three months of this year, the common labor index is up 5% year-on-year, while the skilled labor cost index rose by 4.7% over the same period.

Current open-shop wage rates for the Northwest region are shown in fig. 4. Average labor costs are 2-12% higher than the national average depending on the trade.

Current prevailing wages in Seattle - which are significantly higher than open-shop wages - are shown in figure 5. Prevailing wage rates between 2017 and 2019, as reported by the City of Seattle have increased - in parts - significantly.

Plumbers, electricians and power equipment operators saw the largest wages increases between 2017 and 2019, all topping 10%.

FIG. 2: COMPARATIVE BUILDING COSTS

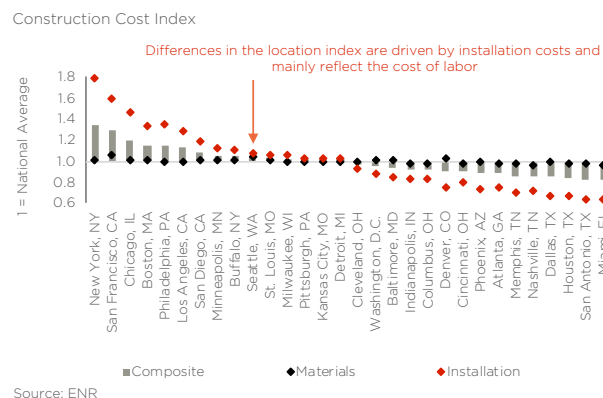


FIG. 3: SEATTLE CONSTRUCTION EMPLOYMENT



Average annual growth

2014-2018 **7.1%**

2019-2023 forecast **1.1%**

FIG. 4: REGIONAL AVERAGE OPEN-SHOP WAGES

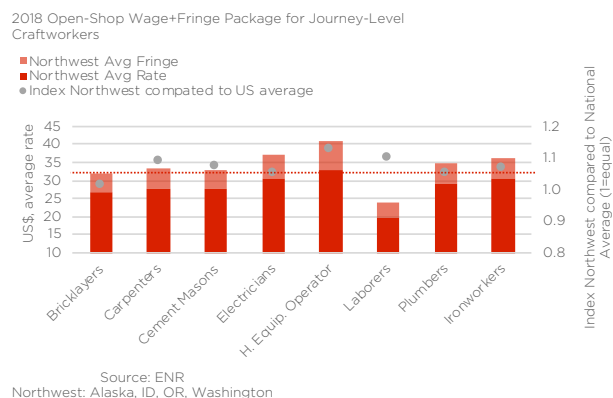
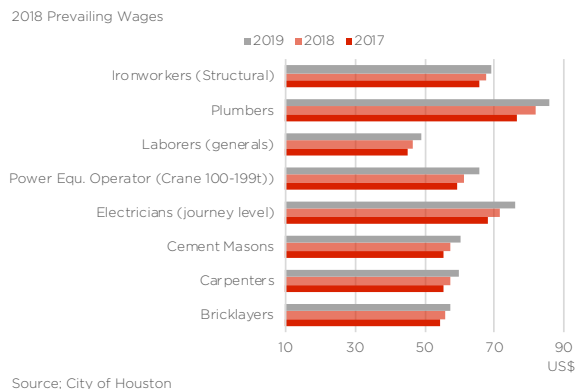


FIG. 5: SEATTLE PREVAILING WAGES



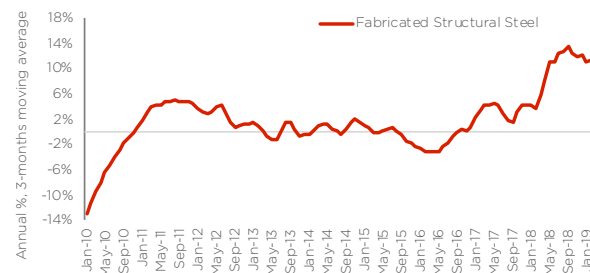
The import tariffs levied by the U.S. on a number of countries and the reciprocal actions by those affected countries aggravated the fluctuation in commodity prices which were already fluctuating amid growing trade tensions, increased sanctions, and growth concerns. Volatile market conditions are widely expected to continue amid uncertainty over a further escalation of trade-restrictive measures and associated spillovers on economic growth, confidence, financial and commodity markets.

On average, material prices nationally increased by 4% in 2018. In the first three months of this year, the material price index stood 1.5% up on the same period in 2018.

FIG. 6: PRICE CHANGES OF SELECTED MATERIALS

Fabricated structural metal

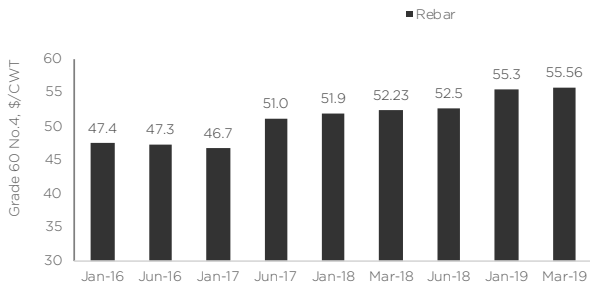
Q1 2019 vs Q1 2018 (1 year) ▲ 8.8%



Source: ENR, BLS

Rebar

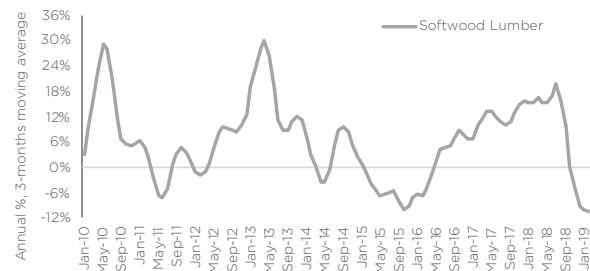
Mar-19 vs Mar-18 (1 year) ▲ 6.4%



Source: ENR,

Softwood Lumber

Q1 2019 vs Q1 2018 (1 year) ▼ 12.9%



Source: ENR, BLS

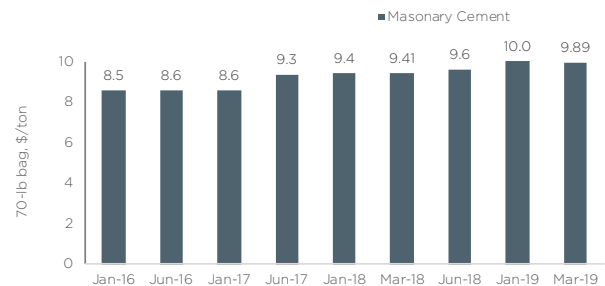
Material prices in Seattle rose 3.7% in 2018. In Q1 2019, regional material price inflation rose more significantly than the national average, up 4.4% year-on-year.

Material prices are expected to increase moderately on average in 2019, as the impact of tariffs wears off and the market cools.

Selected materials are shown in Figure 6.

Masonry Cement

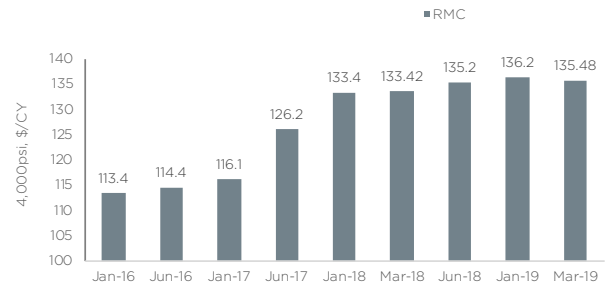
Mar-19 vs Mar-18 (1 year) ▲ 5.1%



Source: ENR,

RMC

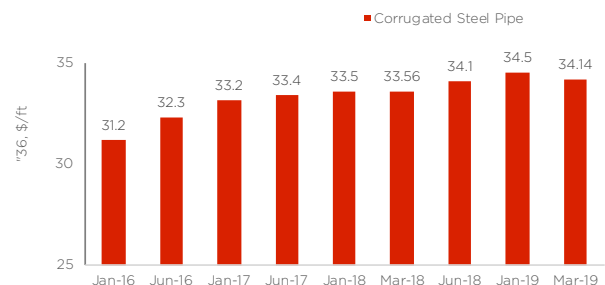
Mar-19 vs Mar-18 (1 year) ▲ 1.5%



Source: ENR,

Corrugated Steel Pipe

Mar-19 vs Mar-18 (1 year) ▲ 1.7%



Source: ENR,

CURRENT CONSTRUCTION PIPELINE

Our major projects (project value > \$100 million) pipeline contains 71 active projects with an estimated project value of \$35 billion (table 1). The projects list focusses on residential and non-residential buildings, as well as transportation investments by Sound Transit. It excludes other transportation, chemical, heavy industrial and energy related projects. Project costs are estimates only.

Eight major projects were completed in 2018. This includes the Stratus (9th & Lenora) and The Mark towers, as well as the \$470 million Hyatt Regency Seattle.

Based on the current projects in the pipeline, estimated construction times, and the assumption that most projects proceed as planned, we expect a modest easing in workload levels from the second half of 2019, as projects that commenced in 2016 and 2017 – the current peak of the cycle – proceed through construction.

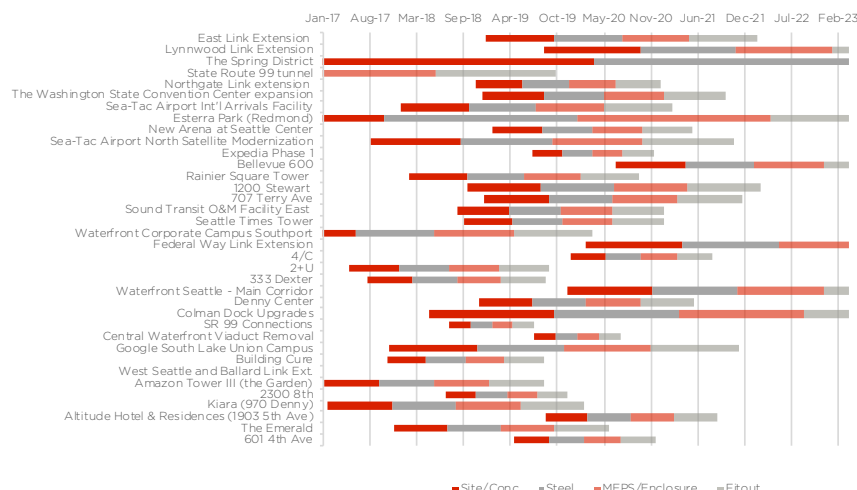
TABLE 1: SEATTLE LARGE PROJECTS PIPELINE

LARGE-SCALE PROJECTS UNDERWAY					
PROJECT	Sector	Project Cost US\$, million	Start	Completion	Developer/ Owner
East Link Extension	Transportation	3,677	Q3 2018	Q4 2021	Sound Transit
Lynnwood Link Extension	Transportation	2,772	Q1 2019	Q3 2023	Sound Transit
The Spring District	Mixed-use	2,300	Q2 2015	2028	Wright Runstad & Co., Shorenstein Properties
State Route 99 tunnel	Infra	2,100	2013	Q1 2019	WSDOT
Northgate Link extension	Transportation	1,900	Q3 2018	Q4 2020	Sound Transit
The Washington State Convention Center expansion	Hospitality	1,600	Q3 2018	2021	Washington State Convention Center
Sea-Tac Airport Int'l Arrivals Facility	Infra	968	Q3 2017	Q4 2020	Port of Seattle
Esterra Park (Redmond)	Mixed-use	900	2014	2023	Capstone Partners
New Arena at Seattle Center	Hospitality+Leisure	850	Q4 2018	Q1 2021	Oak View Group
Sea-Tac Airport North Satellite Modernization	Infra	739	Q1 2017	Q2 2021	Port of Seattle, Alaska Airlines
Expedia Phase I	Commercial MU	640	Q2 2019	Q4 2020	Seneca
Bellevue 600	Mixed-use	600	Q1 2020	Q2 2023	Equity Commonwealth, Touchstone
Rainier Square Tower	Mixed-use	570	Q4 2017	2020	Wright Runstad & Co
1200 Stewart	Residential MU	516	Q2 2018	Q4 2021	Project Stewart LLC
707 Terry Ave	Residential MU	500	Q3 2018	Q3 2021	Westbank
Sound Transit O&M Facility East	Transportation	450	Q2 2018	Q4 2020	Sound Transit
Seattle Times Tower	Residential MU	450	2018	2020	
Waterfront Corporate Campus Southport	Commercial	420	Q1 2016	Q4 2019	Seco Developments
Federal Way Link Extension	Transportation	413	Q3 2019	Q1 2024	Sound Transit
4/C	Mixed-use	400	Q4 2019	2021	Crescent Heights
2+U	Commercial	392	Q1 2017	2019	Skanska
333 Dexter	Mixed use	385	Q2 2017	2019	Kilroy Realty Corp.
Waterfront Seattle - Main Corridor	Infra	363	2019	2023	City of Seattle
Denny Center	Residential MU	350	Q3 2018	Q1 2021	Bosa
Colman Dock Upgrades	Transportation	350	Q3 2017	2023	Washington State Ferries
SR 99 Connections	Infra	348	2018	2019	WSDOT
Central Waterfront Viaduct Removal	Infra	329	2019	2020	WSDOT
Google South Lake Union Campus	Mixed use	328	Q2 2017	2021	Vulcan Real Estate
Building Cure	Lab	300	Q3 2017	2019	Seattle Children's Research Institute
West Seattle and Ballard Link Ext.	Transportation	286	Q3 2023	Q2 2032	Sound Transit
Amazon Tower III (the Garden)	Commercial	275	Q4 2016	Q2 2019	Amazon.com
Westbank Frye Highrise	Residential MU	245	Q2 2018	Q3 2020	Frye Art Museum
Amazon Tower IV	Commercial	244	2018	2020	Amazon.com
West Edge (2nd & Pike Tower)	Residential	220	2018	2020	Urban Visions
The Emerald	Residential MU	218	Q3 2017	Q1 2020	Wood Partners
Tacoma Link Extension	Transportation	217	Q3 2018	Q4 2020	Sound Transit
Woodin Creek Village I-III	Residential MU	200	2014	2019	Dean Weidner
The Village at Totem Lake	Retail MU	200	Q4 2016	2019	CenterCal Properties and PCCP
Nexus	Residential MU	200	2017	2019	Burrard Group
Spire (600 Wall)	Residential MU	200	Q2 2018	2020	China Vanke; Laconia Development
620 Terry Ave	Residential MU	200	Q4 2016	Q3 2019	Columbia Pacific Advisors
1120 Denny Way	Residential MU	191	2018	2020	Onni Group
Arrive	Mixed-use	190	Q2 2015	Q1 2019	Seattle Tower I LLC
Waterfront Seattle - Overlook Walk and East/West Connections	Infra	181	2020	2022	City of Seattle
Downtown Redmond Link Extension	Transportation	178	Q3 2019	Q4 2023	Sound Transit
T-Mobile Newport Corporate Center	Commercial	160	2018	2020	
Nexus	Residential	152	2017	2019	Burrard Group
Third & Lenora (WeWork, WeLive)	Residential MU	150	Q1 2018	2020	Martin Selig Real Estate
UW Medicine 3.2	Healthcare, Biotech	143	2018	2020	UW
Tacoma Dome Link Extension	Transportation	126	Q4 2024	Q3 2028	Sound Transit
Madison Street Bus Rapid Transit	Infra	121	2020	2020	City of Seattle
Arbor Blocks	Commercial	103	2017	2019	Vulcan Real Estate
S Lander St Bridge	Infra	100	2017	Q1 2020	
Dexter Yard	Commercial MU	100	Q4 2018	Q4 2020	BioMed Realty
Legacy Capitol Hill	Commercial	N/A	Q4 2017	Q2 2019	Legacy Commercial
Summit III	Commercial	N/A	2019	2021	Hines
One88	Residential	N/A	2018	2020	Bosa Development
3031 Western	Residential	N/A	Q1 2019	Q4 2020	Martin Selig Real Estate
2300 8th	Residential MU	N/A	Q2 2018	Q4 2019	North American Asset Management Group
Kiara (970 Denny)	Residential MU	N/A	Q4 2016	Q4 2019	Holland Partner Group
Altitude Hotel & Residences (1903 5th Ave)	Hospitality	N/A	2019	2021	Stanford Hotels Group
The Emerald	Residential MU	N/A	Q3 2017	Q1 2020	Daniels Create World Seattle, LLC
800 Columbia St	Residential MU	N/A	Q2 2019	Q4 2021	Daniels Real Estate
601 4th Ave	Residential MU	N/A	Q1 2019	Q4 2020	Bosa Development
Federal Reserve Bank	Commercial	N/A	Q4 2018	Q2 2020	Martin Selig Real Estate
Elev8	Residential MU	600	tbc	tbc	Plus Investment USA, Stanford Hotels Group
1901 Minor Ave.	Residential MU	N/A	tbc	tbc	Crescent Heights
1020 John Street	Commercial	N/A	tbc	tbc	Onni Group
820 John	Residential	N/A	tbc	tbc	Pillar Properties and Rich Reel
1800 Terry	Residential	N/A	tbc	tbc	Seawest Investments
8th & Cherry	Residential	N/A	tbc	tbc	Caydon Property Group
2300 6th Ave	Mixed use	N/A	tbc	tbc	HB Management

Source: BLDUP, Bisnews, Seattle Times, Downtown Seattle Association, Dharam Consulting

FIG. 7: TRADE RESOURCE OUTLOOK - TOP 35 PROJECTS UNDERWAY

Current pipeline of major projects
excludes projects completed in 2018



Source: BLDUP, Bisnews, Downtown Seattle Association, Dharam Consulting

TABLE 2: TRADE RESOURCES PEAK DEMAND OF TOP 15 PROJECTS

Trade Resource	Top 35
Peak Site Concrete	Q4 2018
Peak Steel	Q2 2019
Peak MEPS/Enclosure	Q2 2020
Peak FITOUT	Q1 2021



Some major projects have already completed or are scheduled for completion this year, including the State Route 99 tunnel, the \$420 million Waterfront Corporate Campus Southport, the 2+U commercial tower, or the \$385 million 333 Dexter mixed-use tower, to name just a few.

Six projects with a project value of +\$1 billion are currently underway, of which four are transportation/ infrastructure projects. The \$2.3 billion Spring District is a masterplan project that is being rolled out over a +10-year horizon. The project most tying up resources in the current market is the \$1.6 billion Washington State Convention Center expansion, which commenced construction in 2018 and is planned to be completed towards the end of 2021.

There are some major project starts scheduled for 2019. On the transport side, the \$2.77 billion Lynnwood Link Extension and the \$413 Federal Way Link Extension are the largest projects to commence this year. Elsewhere in the sector, business growth is leading the expansion of corporate space, with major companies extending their footprint in the city. Expedia is scheduled to commence constructing its headquarters with the \$640 million Phase 1 planned to start on site in Q2 2019.

Some major high-rise projects are also planned to commence construction this year, including the 93-story 4/C tower by Crescent Heights, the 58-story 601 4th Ave tower and the 54-story Altitude Hotel & Residences on 1903 5th Ave. In addition, more developments are planned around the \$850 million New Arena at Seattle Center, which commenced construction in the final quarter of 2018, which should work levels strong, though not overly buoyant over the next few years.

Our analysis of the flow of trade resources within the current pipeline for the top 35 projects by value is summarized in figure 7, while peak demand for trade resources for current projects are shown in table 2. The analysis includes only active projects and excludes any projects completed in 2018.

BID SUBMISSION PRICES

The Turner Cost Index recorded a 5.6% rise in average bid submission prices nationally. Turner expects US outturn cost inflation to slow only moderately in 2019, on expectations of a turn in the construction growth cycle at a measured pace. Bid submission prices in Seattle outpaced the national average consistently in the past five years (fig. 8).

The above average increases in bid submission price inflation are due to:

Labor capacity. Despite the strong growth in construction employment, labor shortages are evident in the market. In particular large, complicated schemes, demanding specialist labor and experienced contractors, are likely to continue to face difficulties attracting sufficiently competitive resources, which may lead to higher average cost.

Sub-contractor pricing. Opportunistic pricing by sub-contractor have pushed up project costs considerably, as general contractors compete for skilled resources.

Material cost. Material costs have increased considerably in the past two years, due to strong construction demand, as well as import tariffs on key products.

A record pipeline coupled with capacity constraints and rising material prices caused bid submission prices in Seattle to increase in the range of 4-6% in recent years.

Based on our analysis of current data and the local pipeline, we expect that the pace of construction work will slow moderately from peak levels seen in 2017/18. We see construction volumes slowing faster than the value of work, as price pressures persist.

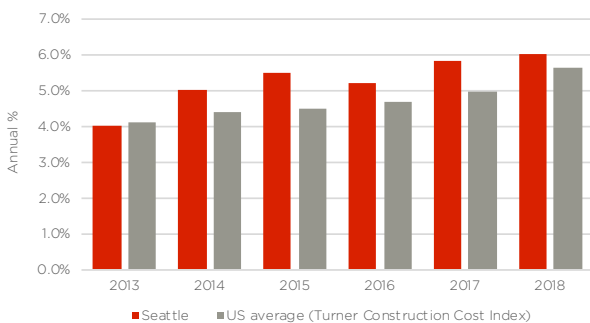
Despite a moderation in workload, we expect that persisting labor shortages, especially on the sub-contractor side will continue to place upward pressure on prices this year. We anticipate an easing in bid submission price inflation over the next two years, but we do not anticipate prices to decrease.

Schemes currently underway in the Seattle 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 are forecast to increase by 5% in 2019. After that, our central scenario foresees price escalation to slow to 3% in 2020 and 2% 2021 (fig. 9).

FIG. 8: SEATTLE BID SUBMISSION PRICES

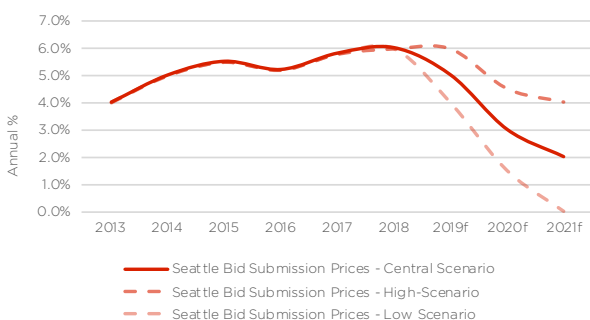
Seattle vs US national average



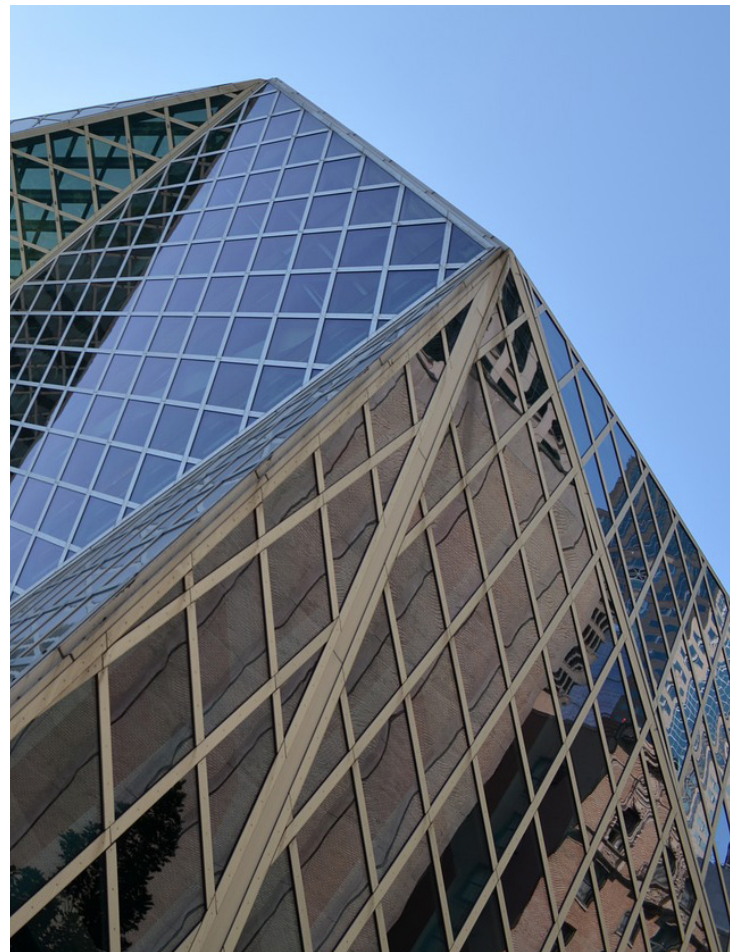
Source: Turner Construction, Dharam Consulting

FIG. 9: BID SUBMISSION PRICE FORECAST

Bid Submission Price Forecast



Source: Dharam Consulting



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