FOURTH QUARTER 2018

NORTH AMERICA

QUARTERLY CONSTRUCTION COST REPORT

RLB Rider Levett Bucknall

ON THE COVER

CHANDLER PUBLIC SAFETY TRAINING CENTER

CHANDLER, ARIZONA

The City of Chandler's Public Safety Training Center was designed and constructed to serve as an important shared resource facility for the Chandler Police Department and Chandler Fire Department. This newly constructed 29,130 SF, two-story masonry building is the first phase of a two phase training center project, that includes: a 250-seat auditorium, high volume lobby space, various sized technology rich classrooms, fitness center, defense tactics room, firearms simulator room, locker-rooms, and break-spaces for staff and trainees.

The centrally located building provides a prominent and welcoming destination for police and fire visitors, and was designed to integrate a future indoor police firing range complex and fire multipurpose support facility, seamlessly into the training campus. This facility allows for effective shared use and joint-instruction opportunities, enhancing Chandler police and fire personnel's ability to work together when responding to emergency situations. The training center will reduce long-term training costs while allowing Chandler Police and Fire Departments to host world class training.

RLB provided cost consulting services to McClaren, Wilson & Lawrie, Inc for this project.

NORTH AMERICA

Speaking about the variety of causes of the wildfires that scorched his state in 2018, California Governor Jerry Brown called the situation "the new abnormal." While few would dispute that climate change plays a key role in this (in the west, the length of the average fire season is now 84 days longer than it was in the 1970s), the increasing trend of people moving into communities that are in close proximity to undeveloped areas—termed the "wildland-urban interface" (WUI)—is another part of the equation. Of California's eight million houses, approximately three million are located in WUIs. Of these, 1.7 million are deemed at high-risk for fires.

Of course, numbers put events in perspective. A year after the 2017 Tubbs Fire destroyed more than 5,600 structures in the northern California city of Santa Rosa, the costs of rebuilding are coming into focus on several levels. The state's department of insurance reports that claims totaled $1.5 billion in direct incurred losses. Many homeowners are grappling with the reality that their coverage doesn't come close to replacing their homes, and are scaling back or abandoning their plans to do so. For those committed to building anew, it's suddenly a more expensive process.

A tariff-triggered jump in the cost of construction materials is adding to the challenges faced by property owners. The California Building Industry Association reports lumber tariffs alone could add $8,000 to $10,000 to the costs of a typical single-family home and about the same amount for steel products such as nails, other fasteners, and wire mesh. The tariffs also are raising the prices of appliances, drywall, and solar panels, which will be required for all new homes built in California starting in 2020.

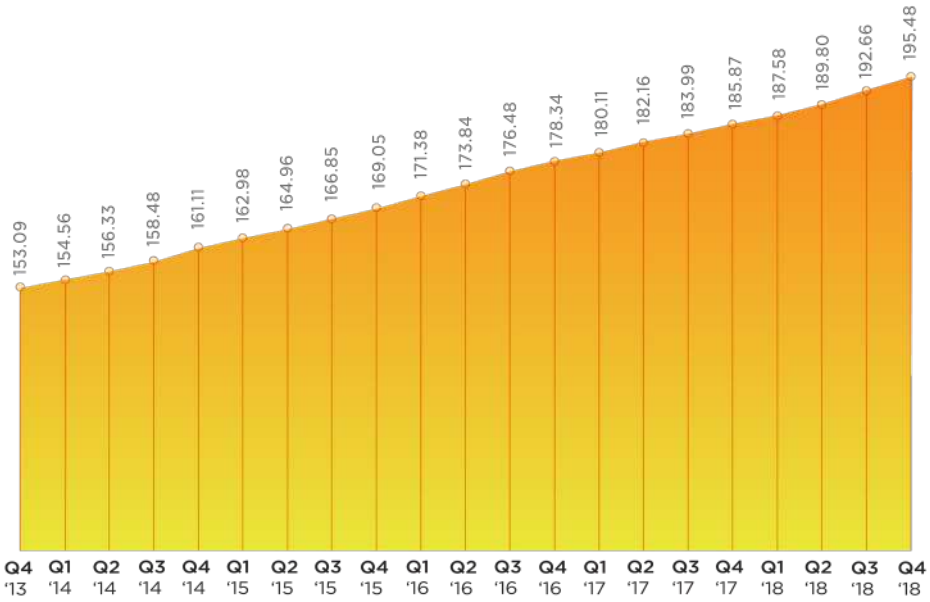
We know that fires (and floods and hurricanes) are escalating in frequency and severity. A host of government agencies, as well as the architecture, construction, and insurance industries are exploring appropriate responses to the problem. Are multi-family buildings a workable model for managing density in areas that have previously been zoned for single family dwellings? Will strategically pre-positioning fire-fighting resources in anticipation of a wildfire prove effective? Can municipal fire-mitigation programs—using a formal process of safety inspections, compliance, and ultimately certification—make a difference? And could advances in building science and materials provide solutions that not only protect life and property, but also promote resiliency?

Rider Levett Bucknall recognizes that managing risk is more than a financial concern; at its core, it's about the long-term goals of creating stability and building trust. As we begin a new year, we look forward to continuing to deliver exceptional services to the AEC community.

Julian Anderson FRICS
President,
North America

UNITED STATES

NATIONAL CONSTRUCTION COST INDEX



Welcome to the fourth quarter 2018 issue of the Rider Levett Bucknall Quarterly Cost Report! This issue contains data current to October 1, 2018.

$1,308.8 Billion

According to the U.S. Department of Commerce, Construction-Put-In-Place during October 2018 was estimated at a seasonally adjusted annual rate of $1,308.8 billion, which is

0.1% below

the revised September 2018 estimate of $1,310.8 billion, and

4.9% above

the October 2017 estimate of $1,247.5 billion.

The National Construction Cost Index shows the changing cost of construction between July 2013 and July 2018, relative to a base of 100 in April 2001. Index recalibrated as of April 2011.

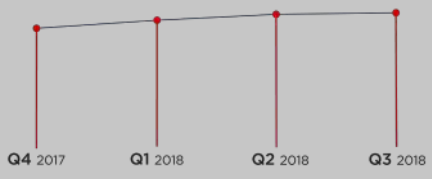
KEY UNITED STATES STATISTICS

Gross Domestic Product* (GDP)

GDP experienced a strong gain mid-year, balancing out in the third quarter at 3.5%; a nearly identical rate from this time last year.

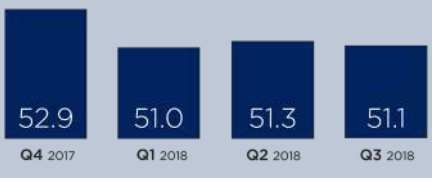
Consumer Price Index (CPI)

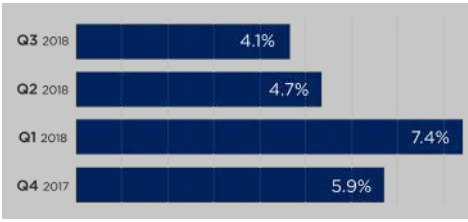
Despite CPI leveling-out during the third quarter of 2018, inflation has risen 2.27% since this time last year.



Architectural Billings Index (ABI)

Architectural billings remain steady and strong, indicating positive conditions at firms across the country.





Construction Unemployment

The national construction unemployment rate continues to drop as new projects break ground and the demand for labor grows.

National Unemployment

The national unemployment reaches its lowest rate in nearly five decades.

GDP represented in percent change from the preceding quarter, seasonally adjusted at annual rates. CPI quarterly figures represent the monthly value at the end of the quarter. Inflation rates represent the total price of inflation from the previous quarter, based on the change in the Consumer Price Index. ABI is derived from a monthly American Institute of Architects survey of architectural firms of their work on the boards, reported at the end of the period. Construction Put-in-Place figures represent total value of construction dollars in billions spent at a seasonally adjusted annual rate taken at the end of each quarter. General Unemployment rates are based on the total population 16 years and older. Construction Unemployment rates represent only the percent of experienced private wage and salary workers in the construction industry 16 years and older. Unemployment rates are seasonally adjusted, reported at the end of the period.

* Adjustments made to GDP based on amended changes from the Bureau of Economic Analysis.

Sources: U.S. Bureau of Labor Statistics, Bureau of Economic Analysis, American Institute of Architects.

UNITED STATES

INDICATIVE CONSTRUCTION COSTS

The data in the chart below represents estimates of current building costs in each respective market. Costs may vary as a consequence of factors such as site conditions, climatic conditions, standards of specification, market conditions, etc. Values of U.S. locations represent hard construction costs based on U.S. dollars per square foot of gross floor area, while values of Canadian locations represent hard construction costs based on Canadian dollars per square foot.

	OFFICES				RETAIL SHOPPING				HOTELS				HOSPITAL		INDUSTRIAL		PARKING				RESIDENTIAL				EDUCATION					
	PRIME		SECONDARY		CENTER		STRIP		5 STAR		3 STAR		GENERAL		WAREHOUSE		GROUND		BASEMENT		MULTI-FAMILY		SINGLE-FAMILY		ELEMENTARY		HIGH SCHOOL		UNIVERSITY	
LOCATION	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
USA																														
Boston	300	475	200	300	175	275	125	200	375	550	250	375	400	650	100	175	75	125	90	150	175	300	250	350	280	380	290	405	330	480
Chicago	280	450	175	280	185	290	135	220	400	660	290	410	380	720	110	185	80	125	125	170	165	400	220	420	265	380	300	405	350	600
Denver	170	260	120	185	95	150	80	175	285	370	175	250	390	480	90	150	60	80	95	125	90	200	90	410	250	315	275	320	305	420
Honolulu	285	525	240	395	210	490	175	430	510	735	320	540	470	755	145	230	100	145	140	260	195	440	280	750	335	470	400	605	440	715
Las Vegas	140	295	105	190	115	480	75	145	350	500	150	300	285	455	50	100	50	85	60	150	90	405	90	350	180	315	200	455	235	455
Los Angeles	230	350	170	255	155	340	125	185	365	530	275	355	520	780	115	180	105	125	130	175	200	315	190	335	360	470	380	495	410	575
New York	375	575	300	400	275	425	175	300	400	600	300	400	475	700	115	200	95	175	125	200	200	375	275	400	295	405	305	455	330	480
Phoenix	170	275	120	175	120	200	80	150	350	520	170	250	400	525	60	100	45	70	70	110	90	210	100	450	170	250	250	350	300	450
Portland	200	270	150	200	160	260	150	210	205	295	165	200	405	540	100	160	105	135	120	195	160	250	140	295	290	360	305	365	330	465
San Francisco	220	350	200	340	230	400	230	350	400	610	350	515	450	675	150	200	120	150	200	275	350	480	225	425	340	425	340	450	350	500
Seattle	215	260	140	200	135	305	110	155	245	360	225	240	380	530	95	125	90	105	135	160	160	270	170	290	250	305	275	465	320	465
Washington, D.C.	275	425	200	300	150	275	125	175	350	525	250	350	400	650	90	150	70	125	80	125	175	300	250	350	280	355	280	380	330	480
CANADA																														
Calgary	235	295	190	285	220	310	110	160	300	450	190	245	550	720	85	145	75	90	75	120	140	215	125	315	185	260	220	310	300	450
Toronto	195	260	175	250	200	250	105	160	300	355	195	260	500	645	115	150	70	90	115	150	130	205	190	330	170	195	200	230	200	295

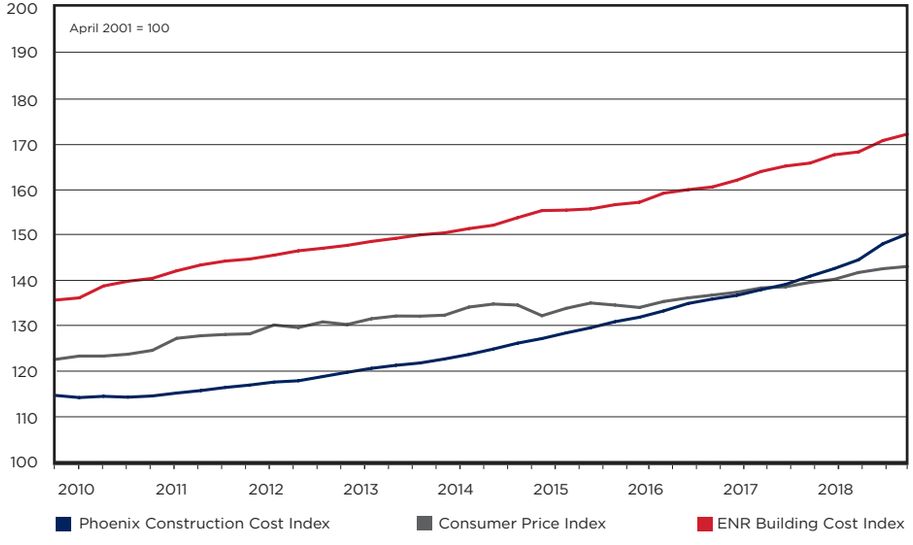
CITY FOCUS: PHOENIX, ARIZONA

The construction market in Phoenix is on the rise with construction costs over 6.5% from this time last year, exceeding the national average growth of 5.17%. The Phoenix Metropolitan area is a unique market, with construction spread out across a 9,000 square-mile valley; that's enough space to comprise the metro areas of New York and Los Angeles combined. With this in mind, the city's growth isn't measured in tower cranes or skyscrapers, rather, it is made up by an abundant number of low- to mid-rise developments, mostly comprised of mixed-use and residential projects.

Akin to national trends, Phoenix is challenged with significant labor shortages. While the number of projects in the pipeline are plentiful, this leads to a concern of general and subcontracts being more selective about their projects, which in turn pushes owners to adopt a proactive approach to finding potential solutions.

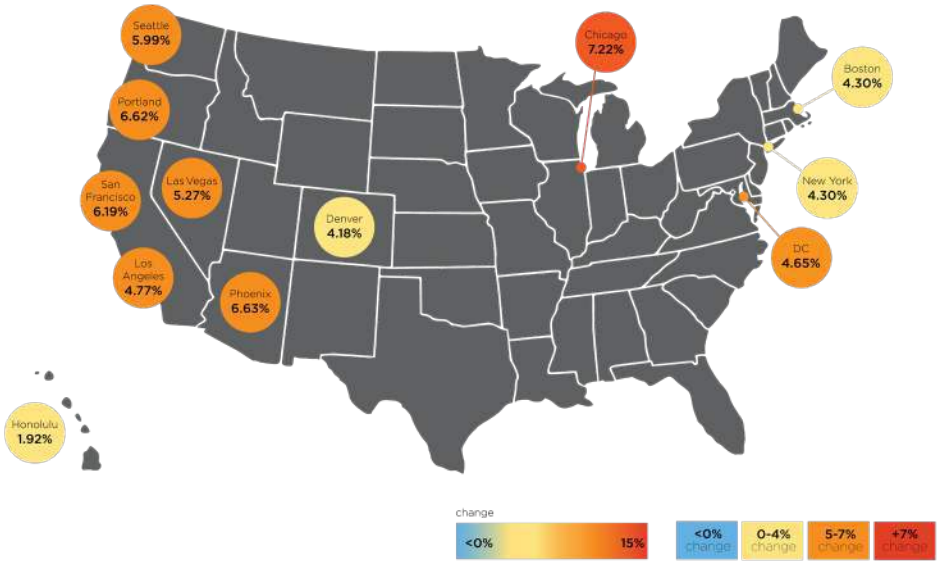
The market doesn't appear to be slowing down in 2019. The Phoenix economy is anticipated to remain fairly robust, with new projects continuing to fill the pipeline and the metro valley continuing to thrive.

INFLATION INDEX COMPARISON



UNITED STATES

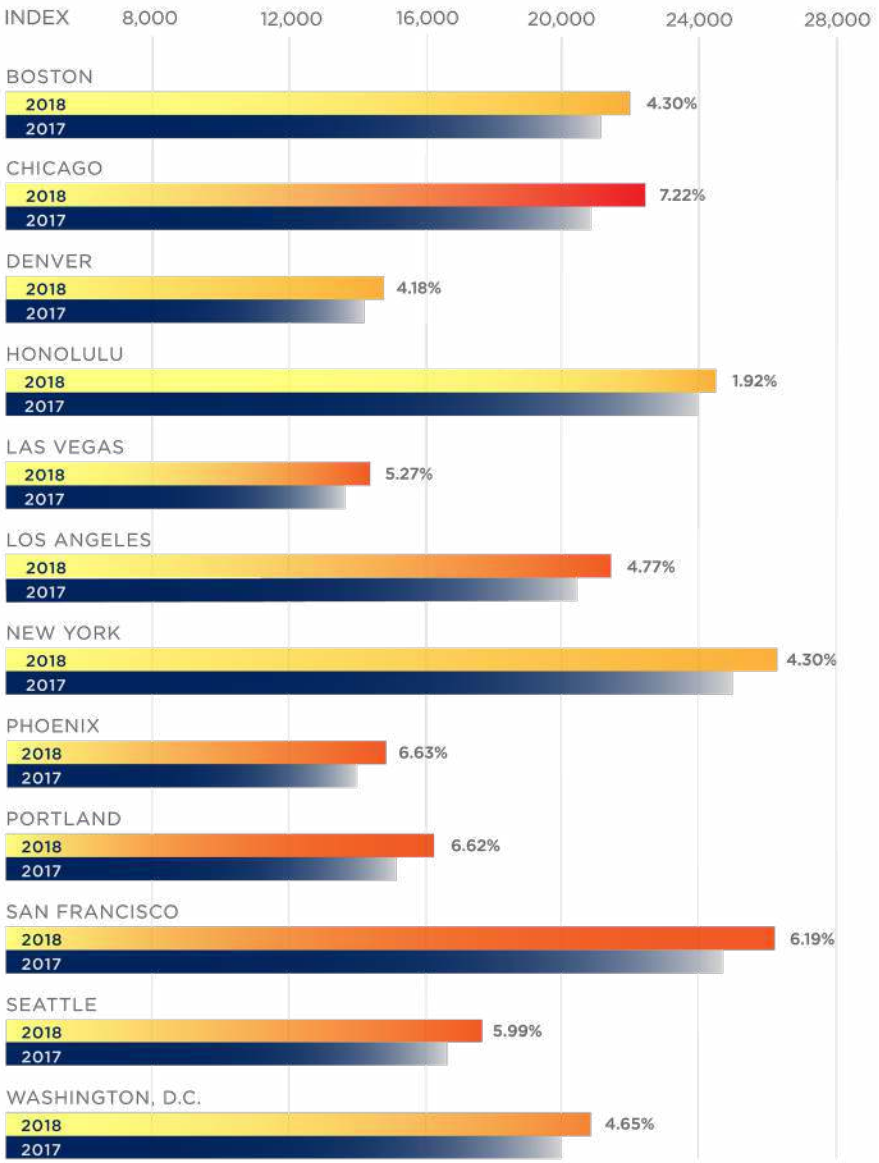
COMPARATIVE COST INDEX



COST AND CHANGE SUMMARY

City	October 2017	January 2018	April 2018	July 2018	October 2018	Annual % Change
Boston	21,176	21,325	21,563	21,789	22,086	4.30%
Chicago	20,905	21,177	21,394	22,055	22,416	7.22%
Denver	14,337	14,513	14,649	14,819	14,937	4.18%
Honolulu	24,058	23,663	23,804	24,048	24,520	1.92%
Las Vegas	13,777	13,922	14,081	14,299	14,503	5.27%
Los Angeles	20,586	20,874	21,010	21,266	21,567	4.77%
New York	24,927	25,104	25,387	25,628	26,000	4.30%
Phoenix	14,080	14,248	14,442	14,795	15,013	6.63%
Portland	15,302	15,524	15,768	16,023	16,315	6.62%
San Francisco	24,760	25,151	25,704	26,038	26,294	6.19%
Seattle	16,804	17,017	17,250	17,525	17,810	5.99%
Washington, D.C.	20,054	20,212	20,437	20,660	20,987	4.65%

Comparative Cost Map and Bar Graph Indicate percentage change between October 2017 and October 2018.



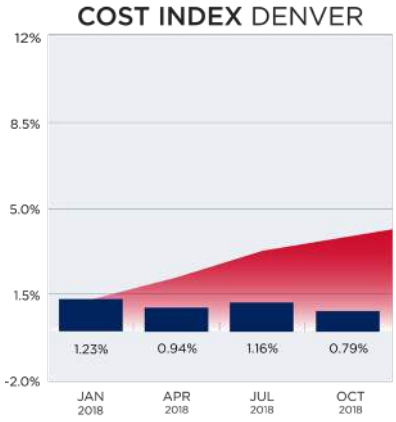
Each quarter we look at the comparative cost of construction in 12 US cities, indexing them to show how costs are changing in each city in particular, and against the costs in the other 11 locations. You will be able to find this information in the map titled Comparative Cost Index (left, top) and in the Cost and Change Summary (left, bottom).

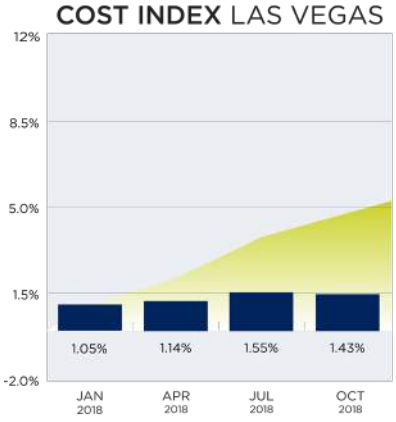
Our Comparative Cost Index tracks the 'true' bid cost of construction, which includes, in addition to costs of labor and materials, general contractor and sub-contractor overhead costs and fees (profit). The index also includes applicable sales/use taxes that 'standard' construction contracts attract. In a 'boom,' construction costs typically increase more rapidly than the net cost of labor and materials. This happens as the overhead levels and profit margins are increased in response to the increasing demand. Similarly, in a 'bust', construction cost increases are dampened (or may even be reversed) due to reductions in overheads and profit margins.

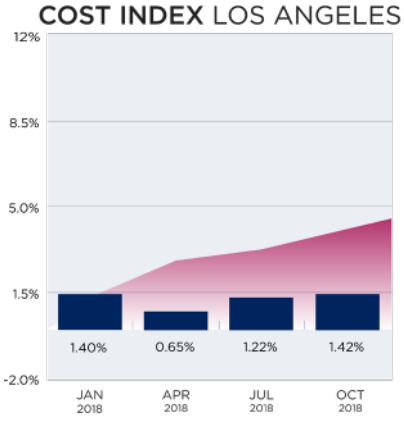
UNITED STATES

The following escalation charts track changes in the cost of construction each quarter in many of the cities where RLB offices are located. Each chart illustrates the percentage change per period and the cumulative percentage change throughout the charted timeline.

Percentage change per quarter — Cumulative percentage change for the period shown

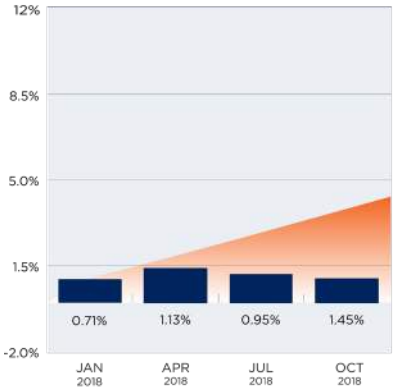






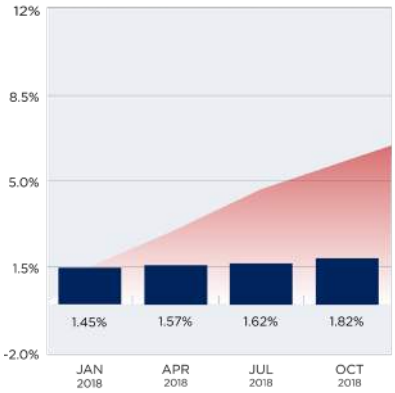
Our research suggests that between July 1 2018 and October 1, 2018 the national average increase in construction cost was approximately 1.46%. Several locations saw increases over this average, including Chicago, Honolulu, Phoenix, Portland, Seattle, and Washington, D.C. However, Boston, Denver, Las Vegas, Los Angeles, New York, and San Francisco experienced increases less than the average.

COST INDEX NEW YORK



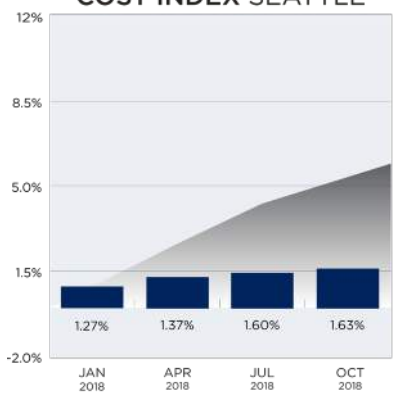
COST INDEX PHOENIX

COST INDEX PORTLAND

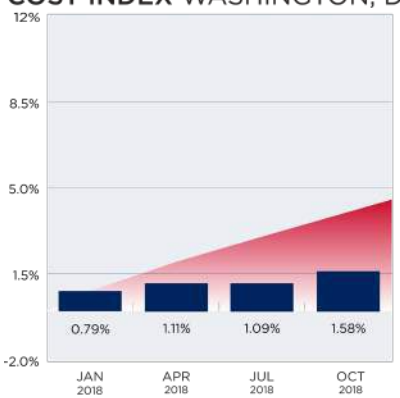


COST INDEX SAN FRANCISCO

COST INDEX SEATTLE

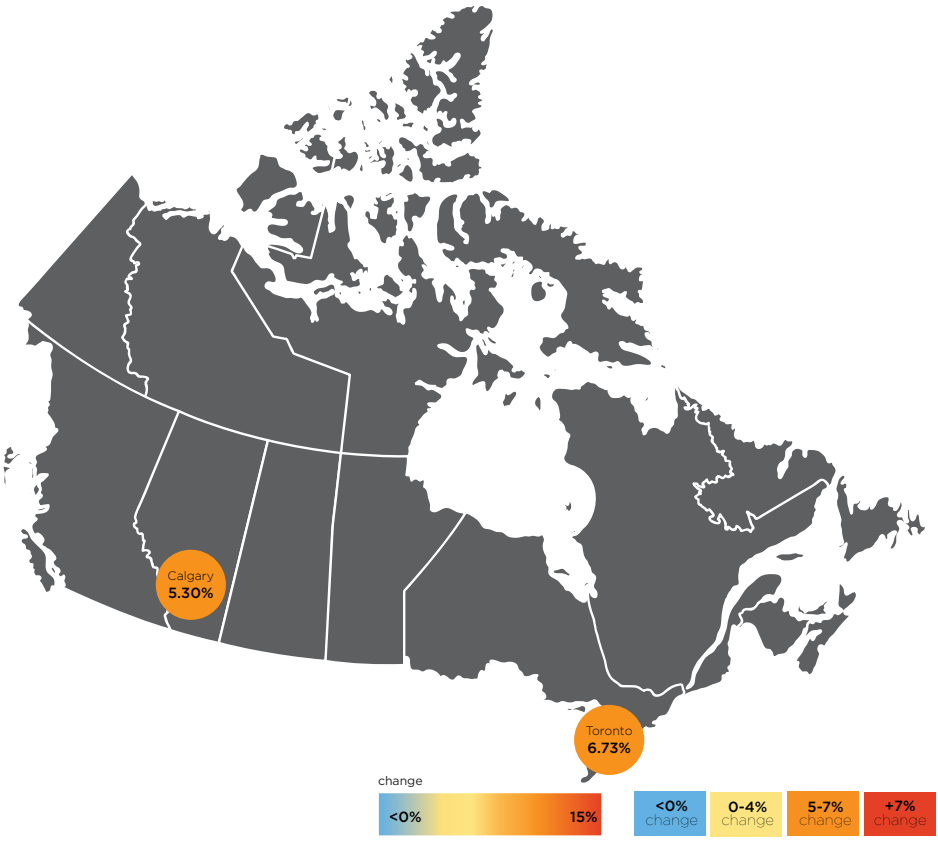


COST INDEX WASHINGTON, D.C.



CANADA

COMPARATIVE COST INDEX



City	October 2017	January 2018	April 2018	July 2018	October 2018	Annual % Change
• Calgary	18,279	18,252	18,292	18,833	19,247	5.30%
• Toronto	18,956	18,999	18,978	19,555	20,232	6.73%

Canada's economy grew better than expected late in 2018. Despite economic slack and a slower pace in most provinces relative to rapid growth rates in 2017, the provinces of Alberta, British Columbia, Saskatchewan, and Ontario are projected to be above a 2.5% growth for 2018.

Toronto is experiencing a peak in the construction of small- to mid-size projects, especially for agencies such as school boards, where projects are receiving minimal bidders, with some projects receiving no bids. This has pushed pricing on some projects up 30% over bids received less than a year ago. The larger projects have also experienced sharp increases in pricing in the last quarter, due in part to USA Tariffs, but also due to lack of tradespeople, and the number of large projects on the market.

KEY CANADIAN STATISTICS

Gross Domestic Product (GDP)

Despite it's increase of 2% from this time last year, Canadian GDP has seen a dip since the second quarter, down 0.50%.

Consumer Price Index (CPI)

Canada's Consumer Price Index grows steadily every quarter, with a variance of 2.22% from this time last year.

Housing Starts

Housing starts balance out from their 30% increase during the second quarter of 2018; down 13.06% from this time last year.

Unemployment

Canada's unemployment sees nominal change throughout 2018, sitting at 5.9% during Q3.

GDP represented in percent change from the preceding quarter, seasonally adjusted at annual rates. CPI quarterly figures represent the monthly value at the end of the quarter. Inflation rates represent the total price of inflation from the previous quarter, based on the change in the Consumer Price Index. General Unemployment rates are based on the total population 16 years and older. Construction Unemployment rates represent only the percent of experienced private wage and salary workers in the construction industry 15 years and older. Unemployment rates are seasonally adjusted, reported at the end of the period.

Sources: Statistics Canada

ABOUT RIDER LEVETT BUCKNALL

Rider Levett Bucknall is an award-winning international firm known for providing project management, construction cost consulting, and related property and construction advisory services – at all stages of the design and construction process.

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MAGAZINE 2016-2019

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