

EXECUTIVE FORWARD

The US marketplace in 2023 presents some very unique challenges and signs of opportunity and recovery in the AEC industry.

The following presentation contains a selection of market trend analysis, insights and editorials from WT's roster of experts across our P3 Advisory, Project Management, Project Controls, Real Estate Advisory and Cost Consulting practices, based on observations in the field on active, relevant projects.

On behalf of the entire North American leadership team, it is our hope that you, the reader, find this material timely and enlightening and also see it as a formal invitation for further discourse with our experts across the company.

On the last page is a contact sheet with details on engaging several of WT's construction professionals.

Thanks for your time and your interest, and lets continue to build, collaborate and be successful in our endeavors as we move through 2023.

Mohneymings



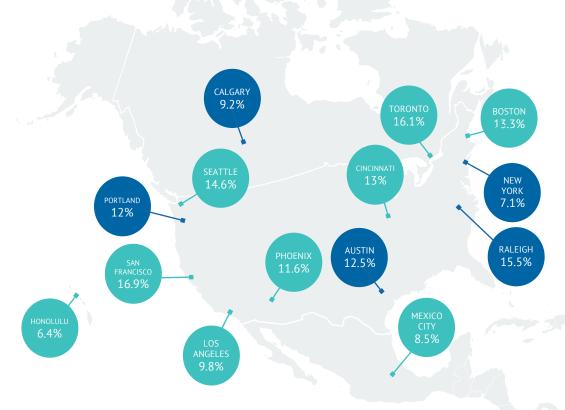
ANDREW SUMMER

COO QS/PM

Andrew is the US Chief Operating Officer for QS/PM based in WT's NYC office. Andrew has established himself as a thought leader in the industry, regularly speaking on panels and seminars and providing detailed economic analysis to clients through a myriad of mediums.

During Andrew's career in the US over the last 20 years, he has witnessed the growth and advancement of cost management services domestically, developing working relationships with some of the world's largest companies and portfolios, transforming their operations and performance.

WT VIEW ON CURRENT MARKET COST ESCALATION - BUILDING¹



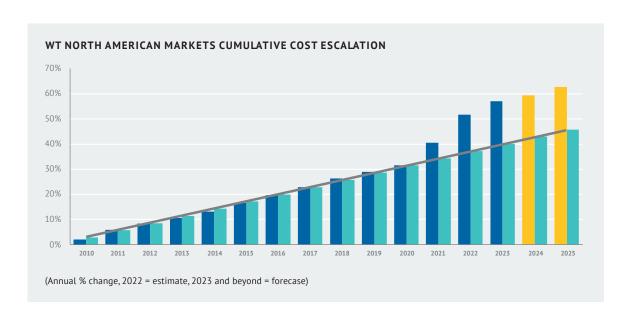
CITY	2023	2024	2025	3 YEAR AVG
AUSTIN				2.9%
BOSTON				3.9%
CINCINNATI				3.2%
HONOLULU				4.8%
LOS ANGELES				3.5%
NEW YORK				3.5%
PHOENIX				3.7%
PORTLAND				3.5%
RALEIGH				3.5%
SAN FRANCISCO				3.6%
SEATTLE				4.7%
CALGARY				2.4%
TORONTO				3.6%
MEXICO CITY				4.2%
+/- HISTORICAL AVERAGE	SIGNIFICANT PRICE INFLATION	MARKET STABLE	MARKET ESCALATION DIMINISH	IING MARKET STABL

INTRODUCTION

THE CONSTRUCTION INDUSTRY POST PANDEMIC HAS SEEN RECORD HIGH CONSTRUCTION COST ESCALATION DUE TO A PERFECT STORM OF FACTORS, SOME OF WHICH WERE DECADES IN THE MAKING. HOWEVER, INCREASING SIGNS OF COOLING ESCALATION ARE NOW VISIBLE. HOW AND WHEN WILL ESCALATION REVERT TO MORE NORMAL LEVELS?

When looking at the reasoning for the recent record highs in construction costs and the abnormal escalation that has swept through the industry, the culprits are numerous both macro and micro, familiar and new.

Many blame excessive stimulus spend, or central bankers putting their foot down for too long, or ongoing trade barriers. These factors played a part, but it is unwise to ignore the role of decades past. The early 1990s recession completed the rise of neoliberal orthodoxy and the idolatry of the surplus Budget. The early 2000s saw big interest rate cuts, with escalation at two-decade highs. Then, post-Great Financial Crisis (GFC), austerity built upon the 1990s cuts to drive a stake through sector capability.









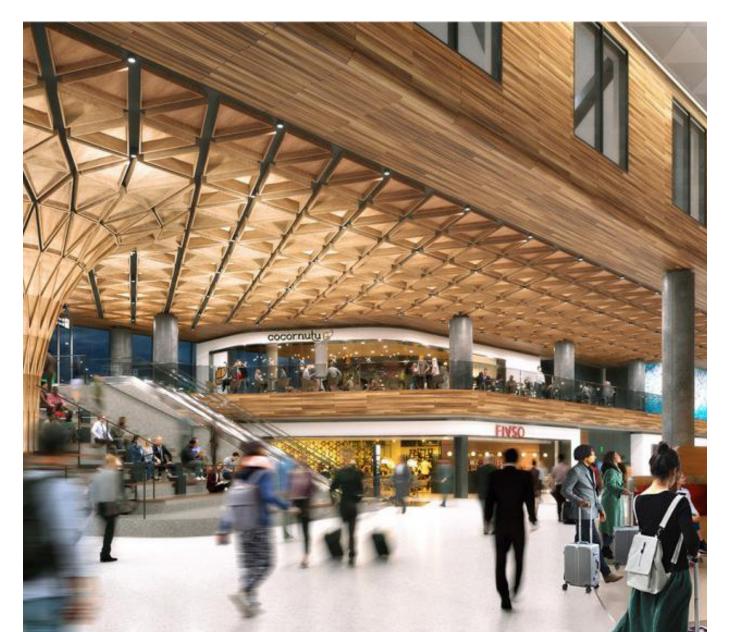


Largely benign conditions meant that many of these escalations did not begin to fully emerge until early 2021. This was after a short, sharp recession (with aforementioned economic stimulus and rock-bottom borrowing costs) but more importantly, many years of underinvestment in sector capacity and capability and even more importantly, major supply chain disruption.

Additionally, with the global impact of the Russian – Ukrainian War geopolitical conflict, it is hardly surprising that cost escalation exceeded 11% on average across WT's North American markets in 2022. This perfect storm of factors took escalation beyond levels seen in the early 1980s (after the second oil shock), producing a near five-decade high in 2022.

However, signs of slowing momentum in escalation have begun and should strengthen, although this timing is unclear. Within this document, we will aim to identify key escalation drivers and highlight their likely moves over a three-year view.

Port of Seattle SeaTac International Airport, WA





KEY POINTS TO ESCALATION OUTLOOK: BY YEAR

2022 and 2023

- Average escalation exceeded 11% (building) across WT markets in 2022, a long-term high.
- Through 2023 we expect to see these pressures easing, with average escalation forecast to fall to an estimated average of 5-6%.
- We predict escalation easing across most categories, led by materials and plant, but expect labor costs to stay elevated.

2024

- We anticipate continuing normalization with our escalation forecast falling back to between 2-3% on average across WT markets in 2024.
- While a softer construction outlook and initial additions from COVID-led sector investment will be important, the economic outlook (and risk of recession v. risk of soft/no landing) may see risks both to the upside or downside for escalation.

2025 and Beyond (medium/long-term)

- Early signs of recovery, which usually see escalation bounce (as activity responds sooner than sector capacity), should see average escalation back above 3% across the majority of WT markets.
- The Infrastructure sector is set to see a higher escalation profile into the medium-term (putting upward pressure on building escalation) via major (US) Federal programs, push for Net Zero and demand for greater 'resilience' and spend to augment widespread digital connectivity.

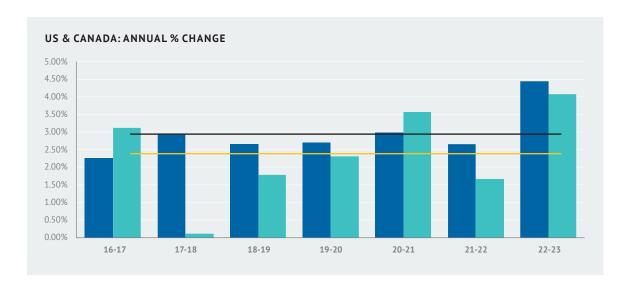
Clackamas County Courthouse, OR



ESCALATION COMPONENT ANALYSIS

LABOR²





2.95%

US HISTORICAL

AVG POINT FROM

2016-2022

2.38%

CAN HISTORICAL AVG POINT FROM 2016-2022

2022-2023
US ALL TIME
HIGH

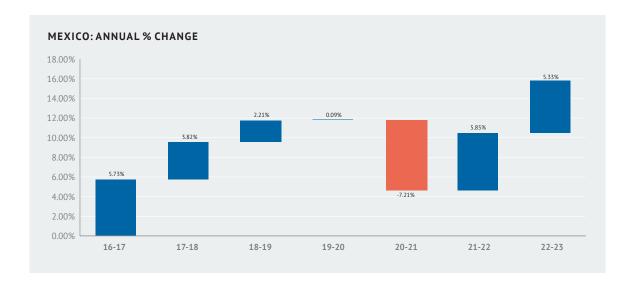
2022-2023
CAN ALL TIME
HIGH

UTSA School of Data Science and National Security Collaboration Center, TX



LABOR (CONT.)3

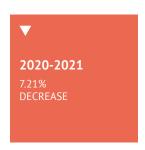












It is no surprise that in 2022 construction labor costs are at all-time highs across key North American markets. In Canada, wages reached a 13-year high, while in Mexico, construction employment's move back above pre-COVID marks (followed by continued growth through 2022) saw wages rebound and move to elevated levels.

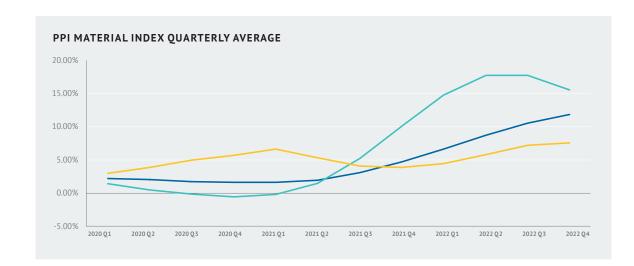
Post Pandemic, in the US, year over year increases in labor costs crept over 4% for the first time since the top of the previous cycle fueled by excessive demands in residential and other hot sectors. This period saw single-family housing build numbers at post-Great Financial Crisis (GFC) highs due to record-low interest rates and the trend for detached housing. These peaks and high labor demand could be felt in smaller/mid-market cities and suburbs as demographics shifted significantly.

Labor productivity in construction has been in decline over many years, despite a correction in the mid-2010s. In addition, the severity of the GFC on construction saw major capability depart the sector. Hence, the size of the construction labor force (i.e., those employed and unemployed) is still (just) below the pre-GFC peak (2007). As such, the sector unemployment rate is approaching the 2019 record low and suggests tightness will persist well into 2023, with less people entering the trades and significant challenges ahead.

However, even with looming increases and taking into account labor material ratios, contrasted with double digit escalation, it is easy to conclude that increases in labor costs are not the major contributor to the abnormal escalation in 2022.

MATERIALS⁴









CAN
17.76% HIGH IN
2022 Q3



Given construction materials can fall into one of several buckets based on their (general) location and whether their pricing is locally or internationally determined, volatility in some prices would typically be negated by steady prices elsewhere. However, the post-COVID, supply chain disruptionled spike of 2021 and 2022, was unique in that most materials, local or internationally priced, saw large increases.



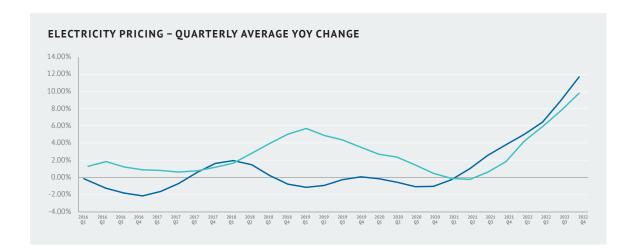
MATERIALS (CONT.)



Even allowing for the continued beneficial environment for passing on higher costs, escalation of materials should see increasing momentum ease in 2023. Fundamentals (e.g., commodity spot prices) weakened through late 2022. This should continue with the boost from China's "reopening" but is unlikely to be sustained, while energy and (especially) freight escalation should also soften. Beyond 2023, as the current wave of construction activity wanes and the risk of an economic downturn increases, the completion of capacity-building investment in the manufacture and transport of materials will also aid in easing escalation pressures.

ENERGY⁵













While the US, Canada and Mexico all enjoy degrees of energy independence, a combination of long-term weakness in investment in new capacity and geopolitical volatility saw electricity prices increase at or near record levels during 2022.

Despite some cost pressures having eased of late, lead times may see higher energy costs continue to flow through the system (i.e., from energy-intensive materials manufacturers, to those who make plant and equipment (especially those in energy-hungry Europe)). More importantly, the general energy price climate remains delicate and prone to jumps.

Relatedly, diesel, an indirect but important input, saw costs rise even more sharply than oil or most other oil products through 2022. While costs have eased of late, they remain elevated versus historic norms. Aforementioned fragility may see Diesel costs spike again in coming years.

FREIGHT⁶











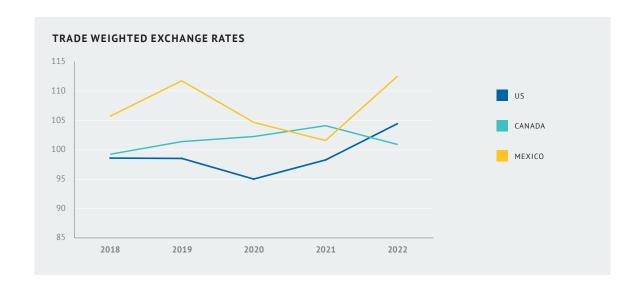
Freight and logistics were the hot topic during the pandemic and while much has been made about the stratospheric climb and recent crash in global seaborne freight costs due to COVID, less attention has been given to developments in other modes of freight. For North America, where relatively more materials and equipment is sourced by non-seaborne means vs. many other major markets, it makes sense to examine these other modes.

Unsurprisingly, given common drivers, trucking costs soared across much of North America through 2022. The post pandemic boom of delivery on demand of many consumer goods saw a significant shortage in drivers, exacerbating costs. Cost growth should slow in 2023 and perhaps beyond, but it is unlikely to see the same spectacular fall as in seaborne freight, as there was less significant disruption in trucking. In contrast, we have seen a recent, significant return to normal in shipping costs. The FBX index that tracks Global Container Freight costs shows the index now under \$2000, down from over \$10,000 in September 2021.



EXCHANGE RATES7

\$

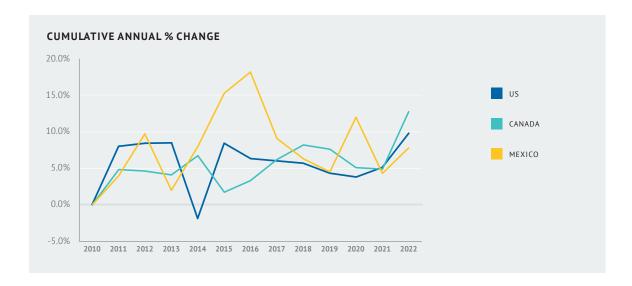


Given less reliance on offshore materials and plants in North America versus many other major international markets, there is somewhat less of an impact from exchange rate movements in the US, Canada and Mexico. Furthermore, exchange rates (weighted by exchange rates versus main trading partner countries) moved in positive directions (i.e., escalation-dampening) in all markets during 2022. For the US, their trade-weighted exchange rate hit a long-term high in late 2022, providing a welcome relief to sky-high escalation elsewhere.

While forecasting exchange rates is nigh on impossible at the best of times, the fall in the USD in late 2022 will flow through to the annual averages for early 2023 and begin to put some upward pressure (all else equal) on US imported materials costs. Canada has seen similar downward pressure on the Canadian Dollar, with the recent announcement by the Bank of Canada that their phase of interest rate increases is now on hold. Despite the potential for further reversion to the mean among trade-weighted exchange rates, unless this reversion overshoots wildly (as can be the case), this is unlikely to have a major impact on escalation.

PLANT & EQUIPMENT⁸





The Plant and Equipment sector was not immune to the overarching COVID narrative, which saw disruption and costs increase markedly. Fears of a forthcoming depression in early/mid-2020 instead manifested as massive economic stimulus-led increases in sectors such as construction and manufacturing. In other words, battening down the hatches and curtailing production to prepare for a period of extreme weakness, was met instead by a period of bountiful growth, followed by shortages and other supply chain disruption. In the US, plant and equipment hire costs rose to their highest level in a decade, while in Canada, costs were at their highest level since the mid-00s.

While disruption has largely passed and hiring costs growth should ease through 2023, this slowing could be negated by the impact of very high energy costs in Europe through mid to late 2022 and lower exchange rates. The prospects for 2024 and beyond, with the likelihood of major new capacity-building investment complete, is better for lower escalation levels.

Scarborough Subway Extension, ON



LEADING INDICATORS9

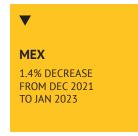












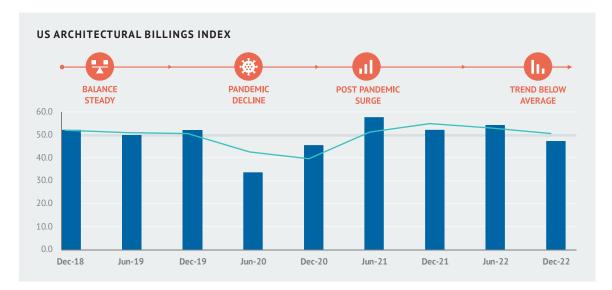
In North American (especially in the US) there are many construction and economic metrics that can be used as leading market indicators. The OECD's Composite Leading Indicator provides a timely, broad overview, summarizing consumer confidence, production, new orders, order books, inflation and imports from Germany into an overall index. For the US and Canada, where the index currently sits at 1.6% and 2.4% respectively below the long-term series average, these are levels are historically synonymous with heading into a period of recession. For the US, the now well-known Yield Curve inversion indicator is another which, at current (negative) levels, also points to a period of recession approaching.

However, recent economic developments have seen 'soft landing' (or even the 'no landing' i.e., a restrengthening of key metrics) scenarios for the US gain greater support. These include inflation likely to slow through 2023, easing fears of a wage-price spiral, broadly supportive metrics for business / consumer spending, and signs of a bottom to housing market weakness.

Several leading indicators on the construction side point to construction activity slowing from mid to late 2023. These include the Federal Reserve's construction loan standards metric - which is currently suggesting loan standards tightened considerably during 2022 - and the American Institute of Architects' Architectural Billings Index - which weakened markedly through 2022, to a level which typically portends much slower commercial construction levels.

LEADING INDICATORS (CONT.)10,11

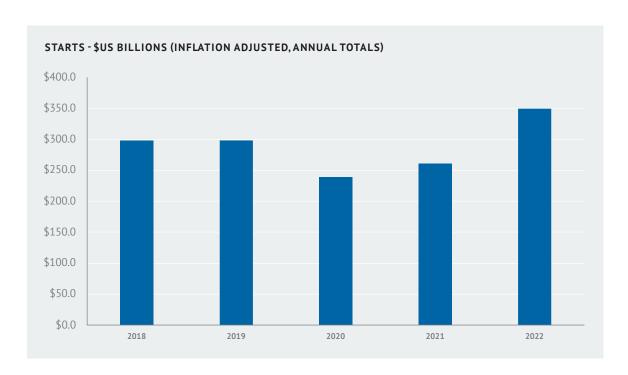




50 = BALANCE BETWEEN PLANS OF MORE OR LESS ACTIVITY

NORTH AMERICAN MARKET CONDITIONS REPORT

However, construction starts (in the US) in 2022 surged by over a third (even allowing for inflation). Assuming these projects proceed through to completion, this will mean elevated levels of construction, with ongoing escalation pressures, through 2023 and into 2024, still higher than the 10-year average.

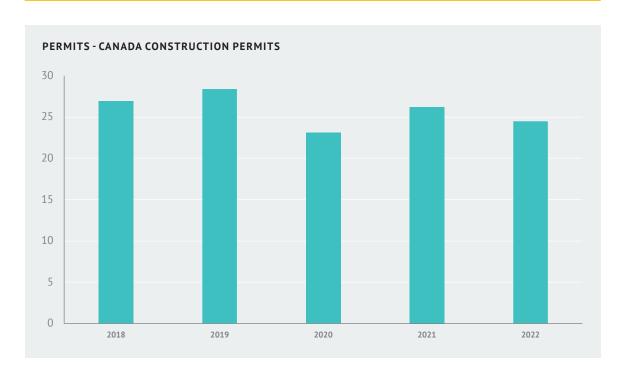




WT 04 2023

STARTS & PERMITS (CONT.)11





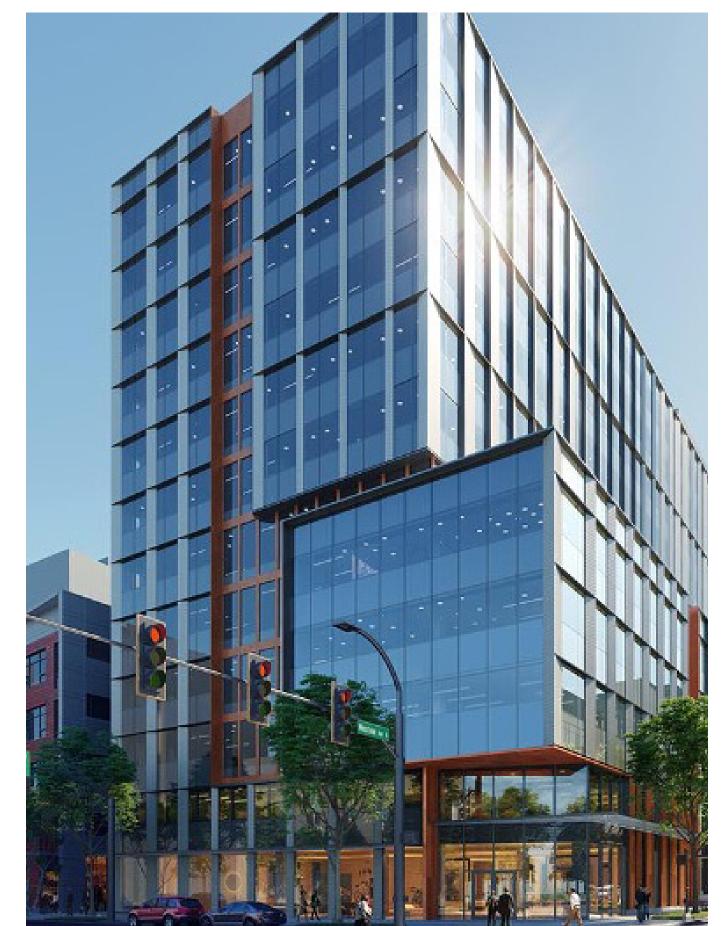
IMPLICATIONS FOR ESCALATION



The symbiotic relationship over time between economic activity and building construction (residential and non-residential) means the recession/no (or soft) recession dynamic through 2023 and 2024 is an important one for the escalation outlook to mid-decade. Recent recessions (2001, 2007-2009 and 2020), while of varying severities, all impacted building construction well beyond the duration of the recession (given established lags/lead times between economic information dissemination and the commencement of new construction projects). However, periods of weakness which were not recessionary (such as 2004, 2012 and 2016) had far less collateral damage to construction activity, which meant higher escalation (all else equal).

By extension, the aforementioned construction leading indicators also enjoy a close relationship with broader economic developments. A worsening or deterioration in economic growth should see these indicators move more solidly into negative territory in coming months or quarters. However, ongoing amelioration in the economic state of play should become apparent in loan standards and architects' forward view, improving the activity outlook, but putting a higher floor under escalation in coming years.

520 Westlake Ave, Seattle, WA



SUMMARY POINTS

WHAT DOES THIS OUTLOOK MEAN AND WHAT SHOULD YOU MONITOR GOING FORWARD?

2022

11% **ESCALATION** 5 DECADE HIGH A perfect storm of factors (some of which were decades in the making) saw average escalation across WT markets exceed 11% in 2022, a near five-decade high.

2023

5-6% AVG **ESCALATION** FALL

Signs of cooling to become more apparent through 2023, with average escalation forecast to fall to 5-6%. These will be seen in all categories but mostly in materials and plant. Labor costs should ease but capability concerns and elevated construction will minimize falls.

2024

2-3% AVG

ESCALATION

Average escalation is set to fall to the lower end of historic norms (2-3%) in 2024. Easing construction activity and the first wave of capacity-building investments coming onstream will be important but the economic outlook (and chance of (major) recession or not) may see risks both to the upside or downside.

2025

3-4% AVG **ESCALATION** By mid-decade, early signs of economic recovery, which typically result in construction recovering faster than sector capacity/capability, should result in average escalation bouncing back above 3-4% across WT markets.

2026

ESCALATION IN SECONDARY CITIES HOLDS

By market, it was the secondary and tertiary cities which led the way and drove the peak in escalation in 2022. Those cities more dependent on high-end Manufacturing, Life Sciences or Tourism should see escalation hold up over the period to 2025. In contrast, for cities more reliant on Tech., population growth (COVID-led) or Oil, a softer escalation outlook is more likely.

IMPLICATIONS & RISKS

NET ZERO

The shift towards less carbon-intensive materials and types of construction could put upward pressure on escalation in two ways: greater use of more expensive materials/methods but also that external pressure to begin this shift by a greater share of the sector.

External to construction but also quite significant, is what the push for Net Zero will mean to power costs and electrification of trucking and highintensity plant. These issues are high-hanging fruit; near-term progress looks unlikely but could be inflationary if it happens.

GEOPOLITICS

The impact to escalation from the onset of the Russia-Ukraine War was significant. While it has receded largely, for some materials and sectors, it persists and will do so even if the War ends promptly.

The potential for Russia to remain exiled (in large part) from commodity trade with key western markets, in addition to the non-trivial risks (over a multiple-year window) of a China invasion of Taiwan, highlights justification for elevated geopolitical concerns on escalation.

CHINA

After ending COVID Zero and then 'reopening' their economy, the market swiftly priced in a marked boost to the Chinese economy, with construction set to see an accompanying lift. A key impact of this was a jump in key commodity prices (e.g., steel, copper and aluminum). While prices here have a quite high base (record prices in early 2022), should this optimism be matched by sustained demand, materials escalation may be higher than expected in 2023 and 2024.

However, China's growth drivers remain in doubt, making an escalation jump less likely. While the risk of a property sector-led financial crisis has reduced, the potential for large economic and/ or infrastructure stimulus is quite unlikely to be

like those of 2007-2015. Furthermore, negatives from worsening demographics (e.g., the long-term decline in birth rate, which saw a shock population fall in 2022, and a much lower pool of rural population able to move to cities and underpin property investment) are only going to worsen in coming years.

INFRASTRUCTURE AS A MEDIUM-TERM WINNER OF PUSH FOR RESILIENCE

While not typically an impactful sector, the very strong outlook for civil infrastructure construction figures to play a more important role in driving building cost escalation. This will be especially so in the US, where the enaction of massive Federal infrastructure programs (across transport and utilities, especially renewables) will have a much greater drag on shared resources than normal. Projects like Ohio and Kentucky's Brent Spence Bridge are high profile reminders of the growing need for revitalized civil development.

For Canada and Mexico, the infrastructure impetus is less significant. However, both countries, like many others, are overcoming long-term civil underspend in a time where demands for resilience, connectivity and linked spend (e.g., data centers) are growing.

Hence, we expect infrastructure construction to have stronger medium-term drivers vs. that of building activity. To the extent this greater and likely more complex work requires new and more specific trades, this could greater labor escalation.

ECONOMY BORROWING COSTS

The importance of the near-term economic outlook in terms of recession risks cannot be overstated. However, an additional risk of a soft or no landing scenario is one where borrowing costs remain elevated for many years to come.

This may be seen via ongoing economic growth, the need for sustained infra spend and/or higher Federal spending. This constraint on construction could mean less need for some sector capability, sowing the seeds of the next escalation surge.





METHODOLOGY

CONSTRUCTION COST ESCALATION IN THIS DOCUMENT IS BASED UPON THE INPUT (TENDER) COST APPROACH BY CITY FROM A VARIETY OF TRUSTED SOURCES

While our view is based on a variety of sources (including 'on-the-ground' insight from all WT offices), the approach used in this document draws upon the best escalation data sources for each city covered. For most US cities, this is the Building Cost Index (BCI) by Engineering News Record (ENR) but also contractor Mortenson's Construction Cost Index, the Hawaii Department of Business, Economic Development and Tourism, as well as ENR BCI series for nearby cities (adjusted by construction employment and building permits for the city in question). For Canada and Mexico, the main data source is the lead Government statistical body (Statistics Canada and INEGI respectively). All data sources are based on the input (tender) cost approach.

The construction cost escalation considered in this document is for building sectors (in this case, a combination of attached (high-rise) residential and non-residential construction). However, the impact of significant developments in adjacent construction sectors (single family residential and civil infrastructure) has been considered where relevant.

Points to note:

- All escalation shown is on a calendar year basis and is the % change between the full-year average vs. the previous year's full-year average.
- Escalation contribution by input is on a general, country-wide basis, while city figures are general across sub-sectors, project types and project value ranges. For more information on escalation relative to your project or sub-sector, please discuss with your regular contact or call your local WT office.
- In addition, escalation contribution by input assumes no other major drivers of escalation (e.g., large productivity increases, significant regulation changes re: approvals ('red tape')).

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NORTH AMERICAN MARKET LEADS



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Footnote References

- 1 ENR, Mortenson, Hawaii DBEDT, Statistics Canada and INEGI
- 2 Bureau of Labor Statistics (BLS), Statistics Canada
- 3 INEGI
- 4/5 BLS, Statistics Canada, INEGI
- 6 BLS, Statistics Canada, (US) Energy Information Administration and Freightos 11 Dodge Data and Analytics, Statistics Canada
- 7 The Bank for International Settlements
- 8 BLS, Statistics Canada, INEGI
- 9 The Organization for Economic Co-operation and Development (OECD)
- 10 The American Institute of Architects

Calgary Event Center, AB



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WT was founded in Australia back in 1949 and has been a force in North America since 2010. A trusted advisor to Owners, Developers, Government and Private sector clients, WT currently manages \$6.5 billion dollars of active mega projects across North America.

WT draws on the collective experience, knowledge and capability of our professional staff in locations across North America and globally to provide our clients with the right advice on all aspects of cost, value and risk to assist in achieving optimum commercial outcomes.

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