2022 Annual Infrastructure Construction Cost Inflation Estimate

December 13th, 2021

Annual Infrastructure Construction Cost Inflation Estimate (AICCIE)

- Today's action item: **Discuss AICCIE methodology** and **adopt rate** for CY 2022

- AICCIE: **projected rate of construction cost escalation** for the upcoming calendar year, used to:
  - Forecast costs for the **2-Year Capital Budget** & **10-Year Capital Plan**
  - Annually adjust **developer impact fees**
  - Update **Facility Resource Renewal Model (FRRM)** and other city forecasting tools
  - Adjusts property tax baseline for Transbay properties
  - Departments will use this for next calendar year estimates, unless they provide evidence of a different escalation rate

Methodology Alternatives Considered

1. Historic AICCIE methodology – 6% ← Staff Recommendation

- Pro: Uses an **average of multiple indices**, **expert input** and **internal and external trend** data to determine *prospective* rate
- Con: Does not fully address **feedback from CPC membership**
- Con: Prospective approach introduces **uncertainty**
- Con: **Significant staff time to develop**

2. Lookback using most recent Construction Cost Index – 9.5%

- Pro: **Many other cities use lookbacks** for developer impact fees
  - Los Angeles, San Diego, Portland, Millbrae, and Fairfield all use ENR Construction Cost Index for impact fees
- Pro: **Lower administrative burden** to update escalation rate
- Con: May result in **increased volatility in rate** (e.g. varies 0.3 – 9.5%)
- Con: **Only provides snapshot of four components** (steel, cement, lumber, and labor)
- Con: **No flexibility to incorporate SF specific considerations** (bid environment or impact of public delivery)

AICCIE Summary

- **Construction activity increasing rapidly** due to pent up construction demand
  - **Large increases in raw material prices**, **labor shortages** increase costs of projects overall
- These trends reflected in bidding environment
  - Contractors concerned about accepting **materials cost risk**
  - Bids anticipated to begin coming in **30-40% over estimate**
- Local experts are using **2021 escalation rates of 4% to 10%**
- ORCP's recommendation of **6.0%** is in line with experts' predictions

ENR CCI standard for impact fees, but uncommon for capital budget

City	Impact Fees Methodology
Los Angeles	▪ Transportation and other Impact Fees updated based on ENR CCI
San Diego	▪ Impact fees adjusted every March, ENR CCI
Portland	▪ Adjusted July 1st, ENR CCI
Millbrae	▪ Millbrae Station Area Specific Plan DIF – July 1st, ENR CCI ▪ Citywide DIF – January 1st, ENR CCI
Fairfield	▪ Fees updated January 1st, ENR CCI

Decision for Capital Planning Committee: Endorse Methodology and Rate

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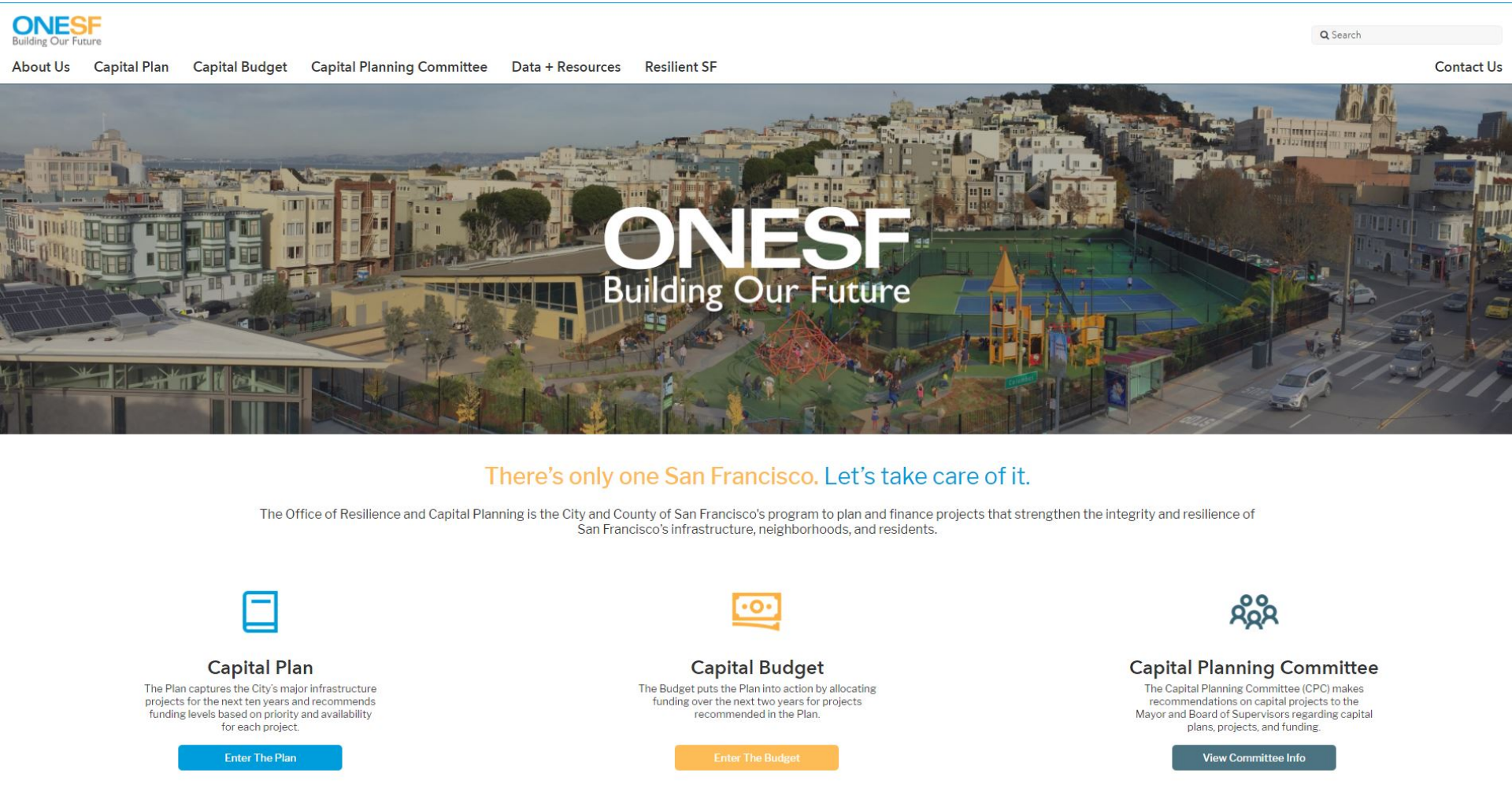
Questions or Comments?



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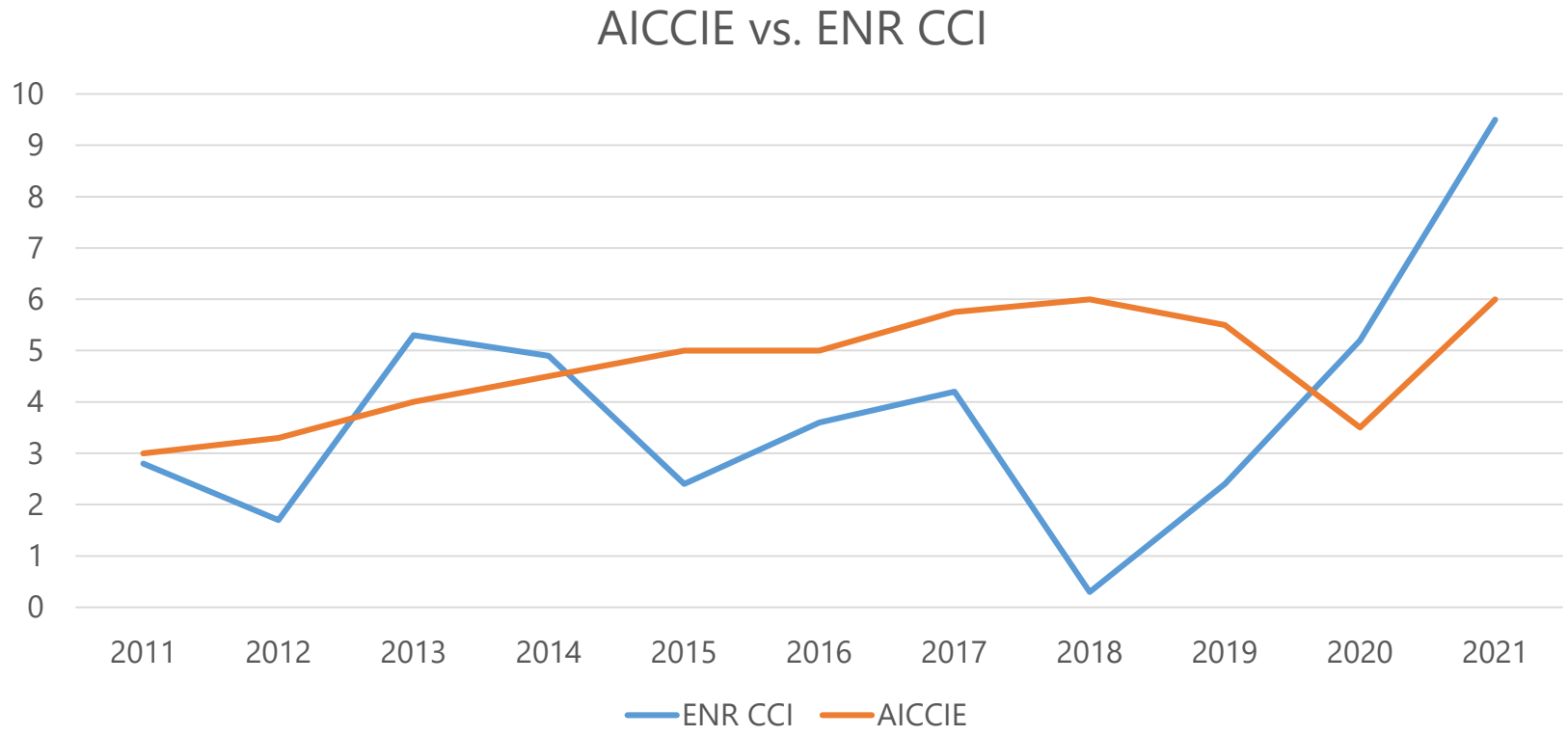
ENR CCI Deep-Dive

- November ENR CCI rate: 9.5%
- **Transparent, respected methodology** in use for almost 100 years
- Calculated using **weighted average prices** for:
  - 200 hours of **common construction labor**
  - 25 cwt **standard structural steel shapes**
  - 1.128 **tons of cement**
  - 1,088 **2x4 lumber**
- Prices gathered from actual materials producers each month, so **reflects real-time changes**

Source: Engineering News Record

CCI has been more volatile than AICCIE

- AICCIE has historically been higher than ENR CCI numbers, with some variance
- .92% difference between 10 year average of AICCIE vs. CCI



** AICCIE rate determined for next fiscal year (e.g. 2021 number prospective for 2022)*

** 2022 AICCIE pending CPC acceptance*

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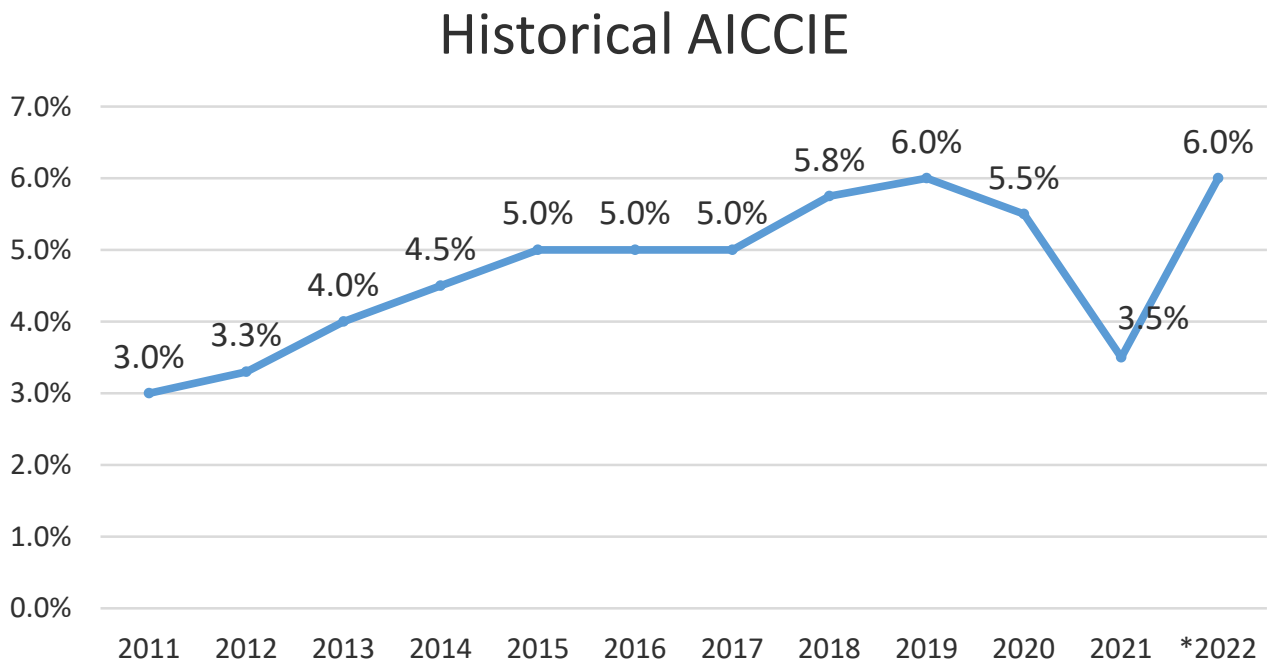
AICCIE Recommendation (using current methodology) CY2022

- Recommend AICCIE Rate of 6.0% for CY 2022
- Construction costs rapidly rising (materials and labor), unfavorable bid environment for public projects



*2022 rate pending CPC acceptance

Current AICCIE Methodology

Understand SF public construction market
- Bid competition & validity of engineer's estimate
- Materials costs
- Local labor considerations

Interview local experts
- SF Gov departments (e.g. Chief economist, SFO, REC, DPW)
- Construction companies, other private experts

Review indices and update rate
- BLS
- ENR
- Turner building cost
- TBD Bid index

Contextualize with state, national and global market trends

Resources Used:

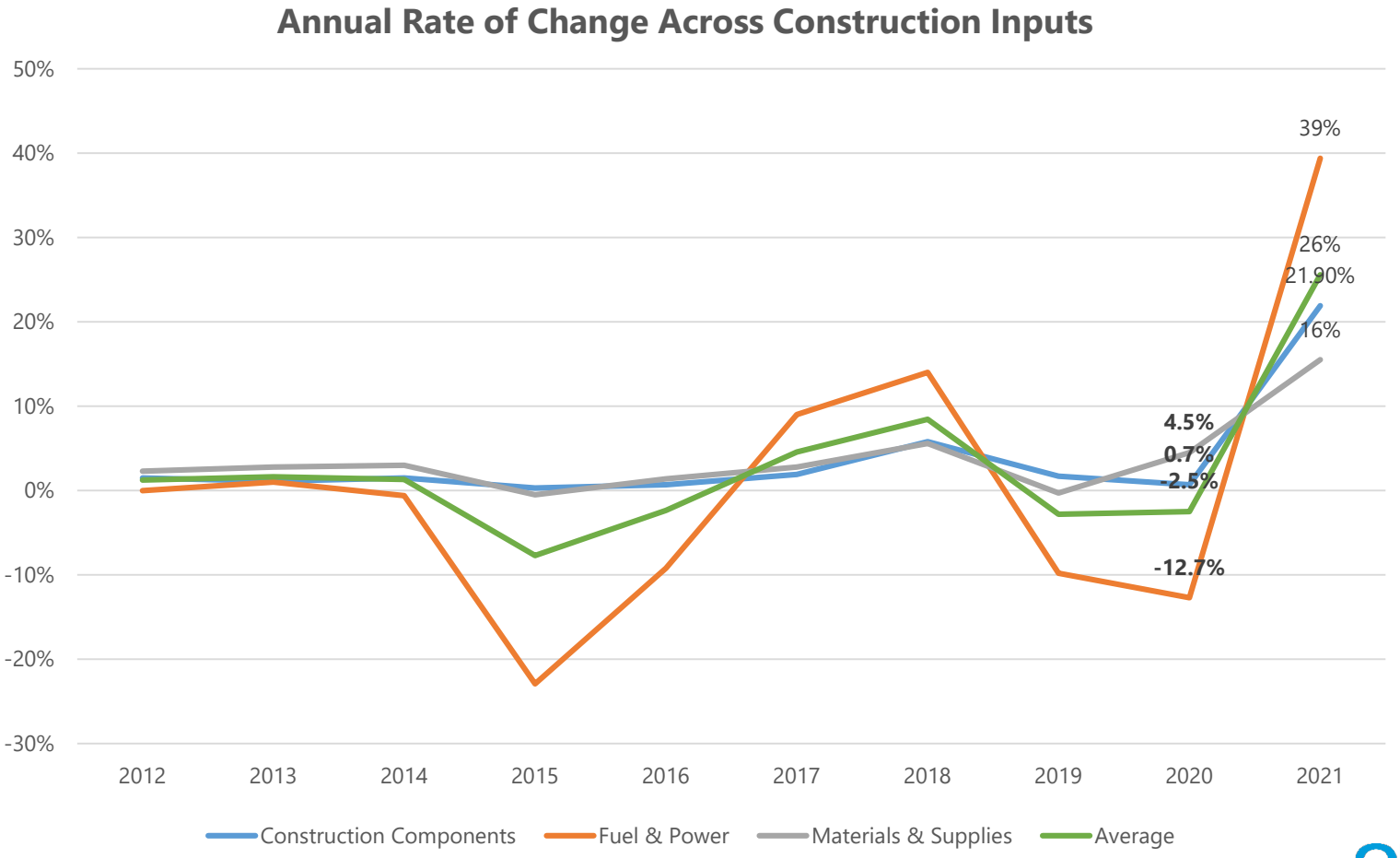
- Major construction and construction-related cost indices
- Bureau of Labor Statistics (BLS) data
- Market reports from industry experts
- Conversations with project managers, construction consultants/economists, and those working in the field
- Public reports of local construction activity

Contractor/Project Manager Perspective

- Market competition is moderate to average, with contractors bidding to fill their backlogs as the market rebounds
- Average accepted bid for Public Works projects 11% over-estimate (first half of 2021)
- Material supply chain interruptions due to global manufacturing shutdowns and transportation limitations
- Soaring materials costs are raising risk levels for contractors in bidding environment
- Construction labor competition is getting more fierce, with wages rising 3-4%

Materials Costs – Combined Categories

- **Large, double digit increases in materials costs** across all inputs
- Global supply chain disruption has continued longer than expected



Source: Bureau of Labor Statistics http://data.bls.gov/data, Industry and Commodity Data

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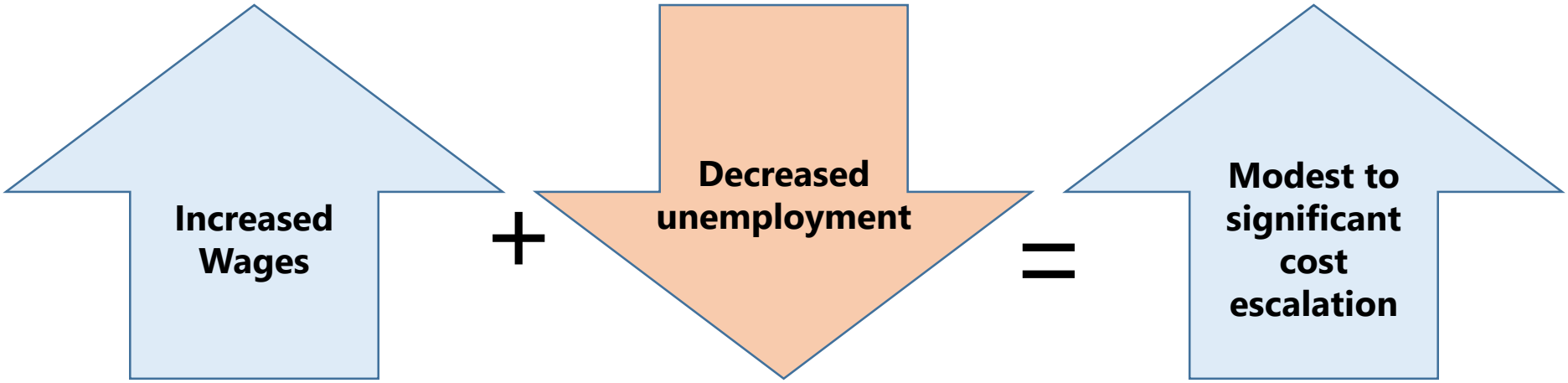
Local Labor Considerations



- SF unemployment: 5% (August 2021)
- SF area construction employment numbers up ~1% from last year.
  - Construction wages have increased 4.1% in 2021 (43% higher than US average per BLS)
- Escalation has been steadily rising from Jan-August

Sources: Clark Construction Q3 2021 Construction Market Insight, BLS SF Area Economic Summary, BLS Employment Cost Index by Area, California Employment Development Department *and BLS Labor Force Statistics from the Current Population Survey*

Impact of # of Bids on Costs

- Slight increase in the last year to 4.75 average bids per construction project, which has remained consistent since last summer

Journal of Construction Engineering & Management (National, 2005)	
# of Bids	Low Bid Deviation From Estimate
1	1.15
2	1.11
3	1.07
4	1.01
5	0.95
6	0.91
7	0.89
8	0.88

Saylor Consulting (Bay Area, 2015)	
# of Bids	% Differential (estimate vs. bid)
1	+25% to 50%
2-3	+10% to 25%
4-5	0% to 10%
6-7	0% to -10%
8 – 10	-10% to -20%

Current SF Market

- One project rejected this year with bids 29% over estimate
- Estimators have been increasing estimates due to cost increases

Source: Cumming Construction Economic Forecast; from: Carr, Paul G., P.E., M.ASCE, "Investigation of Bid Price Competition Measured through Prebid Project Estimates, Actual Bid Prices, and Number of Bidders", Journal of Construction Engineering and Management, 2005 , Saylor Consulting Market Trends 2015 Construction Forecast

2022 SF Experts Projected Escalation

Organization	2021 Estimate	2022 Estimate	2021 vs. 2022
SFO	2-3	6-9	5
SFPUC	4-5	6	1.5
Sightlines (academic institutions)	3.6	3.8	.2
Pankow	3-4	5-10	4
Cumming Construction	3	5.6	2.6
Clark	3-4	4.5-5.5	1.5
Jacobs	5	6-10	3
TBD Construction Consultants	3.5-4	4-5	0.75
Saylor Consulting Group	4	5	1
M. Lee Corporation	5	8	3
Average	***3.8***	***6.0***	***2.2***

Industry experts are estimating SF 2022 escalation in the range of 4% to 10%

Historical Retrospective Escalation Indices

Construction Index	Description	2015	2016	2017	2018	2019	2020	2021
Turner Building Cost Index	Change in costs of non-residential building construction nationwide	4.5%	4.8%	4.2%	5.6%	5.5%	1.8%	1.5%
BLS New Construction PPI	Change in output price of new non-residential construction	1.7%	0.6%	3.5%	3.3%	5.6%	2.1%	5.0%
BLS Maintenance Contractor PPI	Change in costs of price for work done to maintain and repair non-residential buildings	2.0%	1.3%	3.1%	2.7%	5.0%	1.3%	5.1%
BLS SF Metro CPI	Change in cost of local consumer goods	2.6%	3.1%	3.4%	4.3%	2.7%	1.6%	3.7%
BLS SF Metro Employment Cost Index	Change in employment cost (averages Total Compensation and Wages/Salaries)	2.2%	2.2%	5.8%	6.2%	2.6%	2.9%	3.1%
ENR CCI – San Francisco	Change in SF *common* labor and materials	2.4%	3.6%	4.2%	0.3%	2.4%	5.2%	6.9%
ENR BCI – San Francisco	Change in SF *skilled* labor and materials	2.6%	3.7%	4.8%	0.5%	4.2%	6.0%	11.8%
TBD Consultants Bid Index	Change in construction bid cost for an indexed simple new construction project in SF	12.5%	11.9%	2.7%	0.2%	9.8%	2.8%	3.5%
AICCIE	City of SF projected estimate for escalation in the calendar year listed (prepared the previous October)	5.0%	5.0%	5.75%	6.0%	5.5%	3.5%	6.0%

- 2021 average across all listed indices: 5.1% (3.4% in 2020)
- 2021 average across all local indices in shaded rows: 5.8% (3.7% in 2020)

** AICCIE rate determined for next fiscal year (e.g. 2020 number prospective for 2021)*

** 2021 AICCIE pending CPC acceptance*

Contractor/Project Manager Perspective

"The construction industry is in the midst of a period of exceptionally steep and fast-rising costs for a variety of materials"

Source: Association of General Contractors of America – Q1 2021

"All indicators denote a large amount of work coming to market in the next 12 months and beyond"

Source: Clark Construction Construction Market Insight – Q3 2021

"It's not a favorable bidding environment for the city right now. There's a lot of uncertainty for contractors because of material and labor"

Source: PUC Project Manager

Local Sector Forecast

CURRENT MAJOR BAY AREA PROJECTS ($2+B)

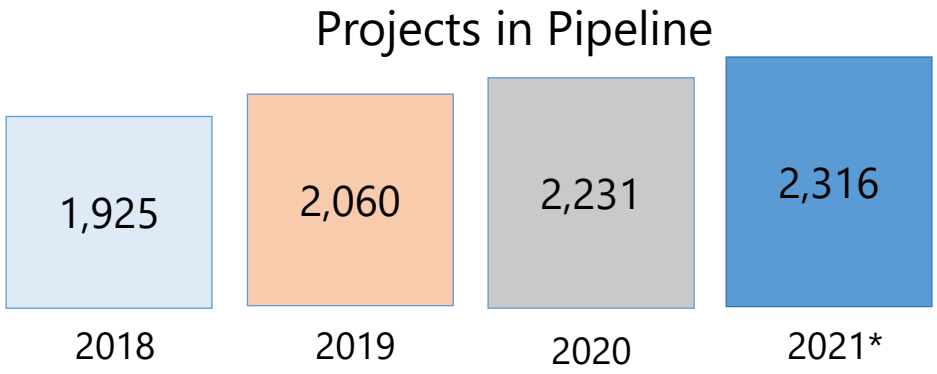
Delta Water Tunnel
Related Santa Clara (formerly City Place Mixed-Use Development)
San Jose BART Extension
Google North Bayshore Master Planned Development
Vallco Town Shopping Center
Market Park – South Village
Mission Point Mixed-Use
Pacheco Reservoir Enlargement
Potrero Power Plant

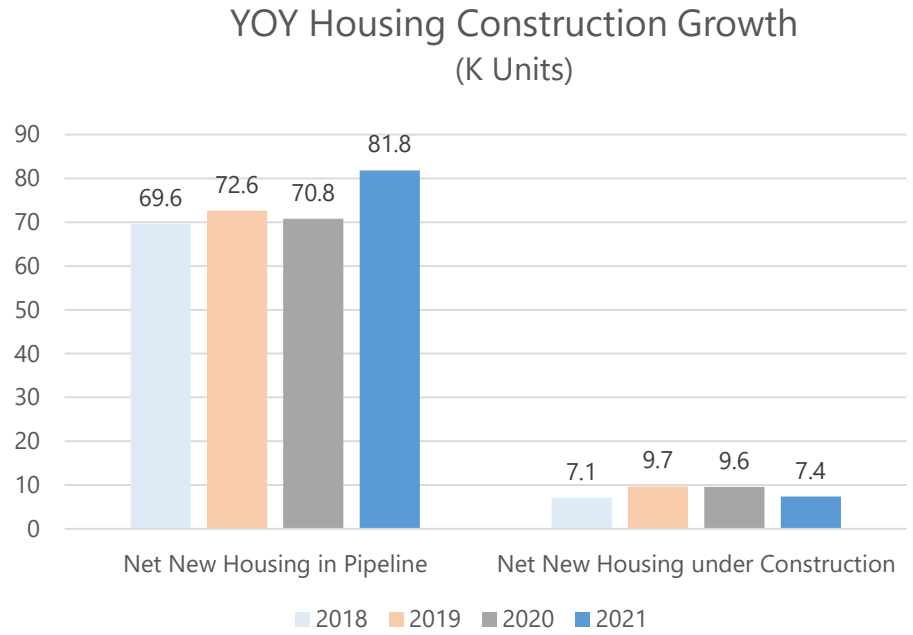
- Most expensive city in US for construction
- Largest projects over $2B this year, compared to $1B last year
- Uncertainty in office development
  - Companies increasingly adopting fully remote work policy
  - Empty offices in the short-term, speculative long-term impacts
- Residential construction ~65% of total construction

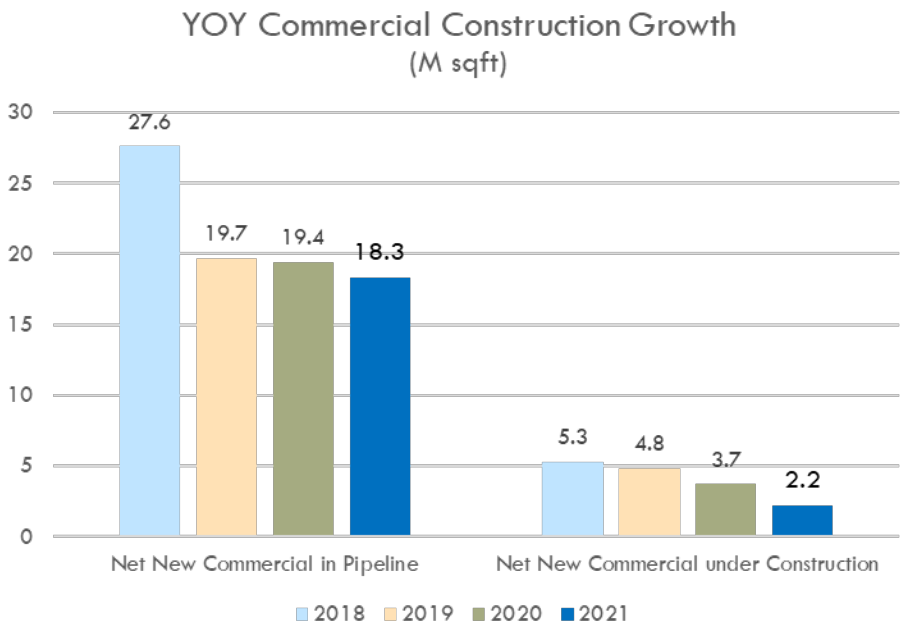
  Rent about ~15% from pre-pandemic levels
- Construction spending still far above national average, top 10 projects valued over $2B

Source: Cumming Quarterly Construction Market Report Q3 2021

SF Planning Pipeline Statistics







Source: SF Planning Department Statistics, Q1 2021, received 10/15/21

2021 planning pipeline data from Q1, rather than usual Q2 comparison data

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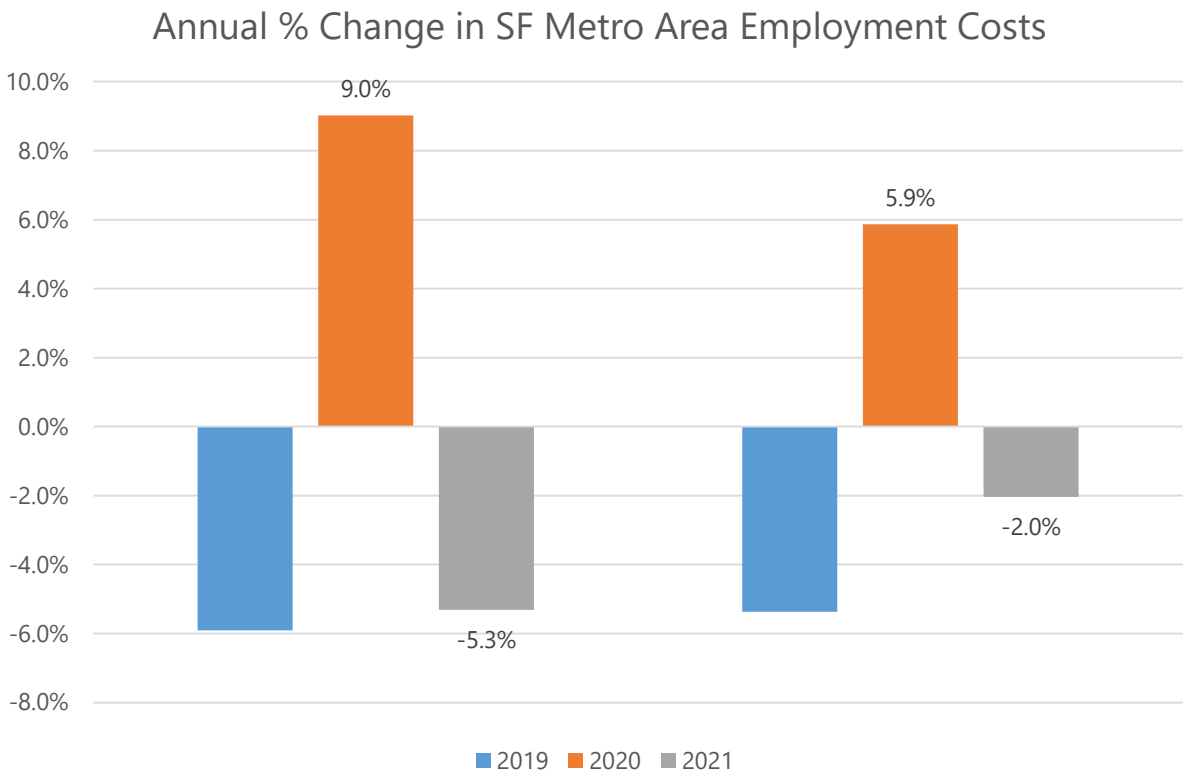
AICCIE Legislation

- Legislative text:
  - The AICCIE "shall be updated on an annual basis… in order to establish a **reasonable estimate of construction cost inflation** for the next calendar year for a mix of **public infrastructure and facilities** in San Francisco.
  - "The Controller shall review the amount of each development fee established in this Article and **shall adjust the dollar amount of any development fee** on an annual basis every January **based solely on the AICCIE**…"

Local Private Industry Employment Cost Index

- Wages and benefits declined from last year, but are still higher than 2019



Source: Bureau of Labor Statistics Employer Costs for Employee Compensation San Jose-San Francisco-Oakland, CA

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SF Debt Program and Enterprise Fund Projects

Enterprise Fund Projects
Central Subway
Transit Optimization Program
Pier 70
Sewer System Improvement Program
SFO On-Site Hotel and Terminal 1
Hope SF
Treasure Island Development
Hunters Point Shipyard and Candlestick Point Redevelopment
Seawall Project

Active GO Bond Programs
2012 Neighborhood Parks & Open Space
2014 Transportation
2014 and 2020 ESER
2015 Affordable Housing
2016 Public Health & Safety
2018 Seawall Bond

Other Major Public Building Projects
Animal Care & Control
49 South Van Ness
Hall of Justice
India Basin Park

Relevant Legislation for San Francisco construction market

- Infrastructure Investment and Jobs Act (Passed Senate, currently in House)
- 2022 Transportation Bond (June 2022 ballot)
- Health and Recovery Bond (approved November 2020 ballot)
- Earthquake Safety & Emergency Response Bond (approved March 2020)
- SF Affordable Housing Bond (approved November 2019)
- Central SOMA Plan (approved December 2018)
- Seawall Bond (approved November 2018)
- State Affordable Housing Bond (approved November 2018)

State Economy

- State budget surplus ($76B + $27B in federal aid)
- COVID-19 pandemic and wildfires continue to challenge state economy
- "From sizzling to ho-hum" – UCLA
  - Economy rebounding from pandemic, but challenged by delta variant
- 7.5% unemployment rate (August 2021)
- State budget included $50B+ in funding for infrastructure over next 5 years

National Economic and Sector Growth

- **Economy begins to recover from the pandemic recession**
  - **6.7% GDP increase in Q2 2021**
  - **Expectation that third quarter GDP will be lower**
  - **Overall US unemployment: 4.8% in September 2021**
- **Accelerating recovery in construction after steep declines**
- 4.5% construction unemployment in Sept 2021 (7.1% last year)
- National construction activity expected to more than double in value in 2022
  - $179.5B in 2022 vs. $87.5B in 2021 per Clark Construction Q3 2021 estimates
- **Heightened volatility**
- Global supply chain disruptions continue
- Demand volatility – unsure how many people will return to in person work
- Infrastructure bill expected to add $550B in new spending over the next 5 years
- Concerns over global construction/debt market due to Chinese market
- Impacts from climate change (e.g. severe fire season, continued drought)

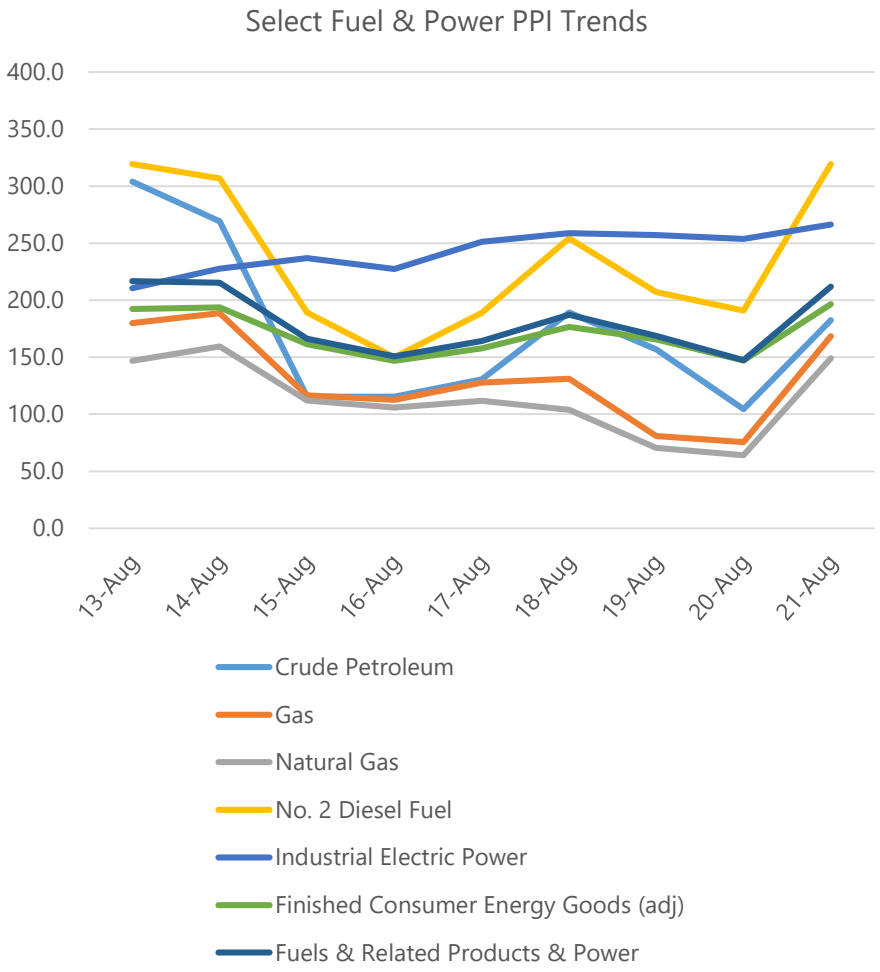
Materials and Trades – Special Concerns

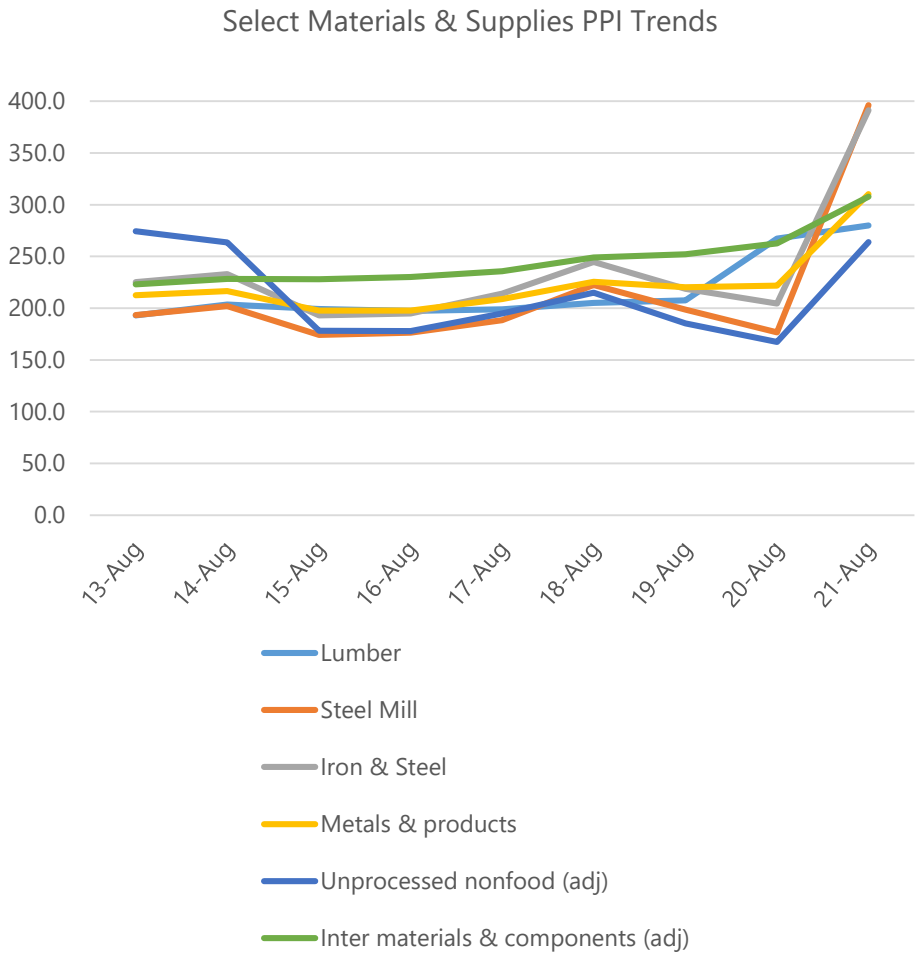
Volatile Materials
Lumber
Steel
Aluminum
Copper
Concrete
Glass
Asphalt
Gypsum

Subtrade Shortages
Mechanical
Electrical
Plumbing
Concrete
Glazing
Drywall

Source: Jacobs BIAF Estimating Cost Impact Webcor Tariff Increase Impacts, May 2018

Materials Costs – Individual Commodities





Source: Bureau of Labor Statistics http://data.bls.gov/data, Industry and Commodity Data

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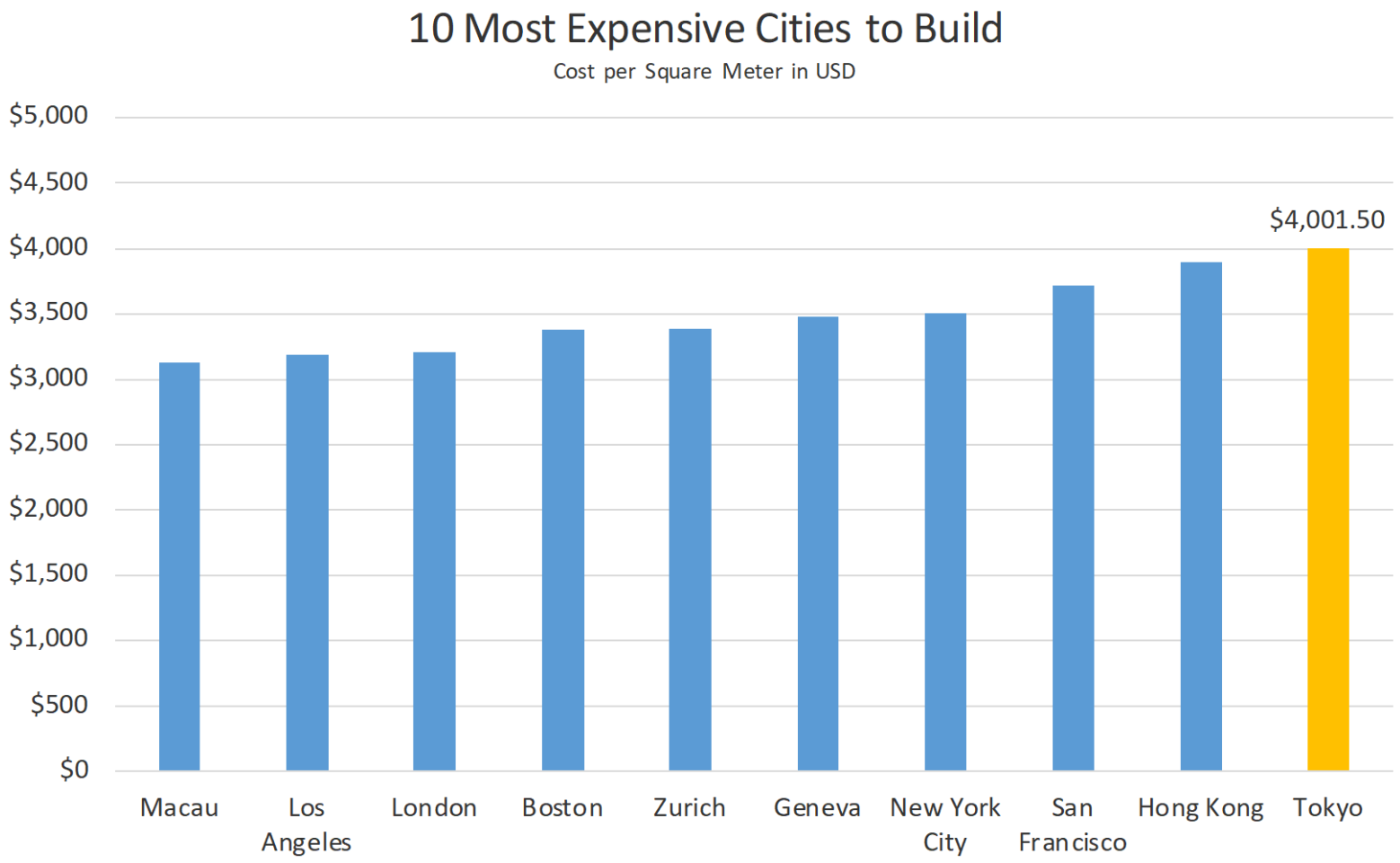
Economic Trends—Global

- **Growth in global construction growth expected as part of anticipated long recovery from COVID-19 recession**
  - IMF projecting 6% GDP growth for 2021, led by India, China and the United States
  - ~9% overall increase in global construction market, as part of overall recovery from COVID-19 recession

- **Ongoing uncertainty**
  - Delta variant continues to spread worldwide, and vaccines not universally available
  - Global supply chain issues worsened throughout 2020 and 2021, despite initial expectation that the market would right itself
  - Uncertainty around Chinese construction market (e.g. Evergrande)
  - Ongoing geopolitical tensions and concerns about the economic outlook

Global Construction Costs



Source: Turner & Townsend International Construction Market Survey 2021

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