

2023 Annual Infrastructure Construction Cost Inflation Estimate



October 24, 2022

Overview

The Annual Infrastructure Construction Cost Inflation Estimate is the projected rate of construction cost escalation for the upcoming calendar year.

The rate is used to:

- Forecast costs for the 2-Year Capital Budget & 10-Year Capital Plan
- Update Facility Resource Renewal Model (FRRM) and other city forecasting tools
- Departments will use this for next calendar year estimates, unless they provide evidence of a different escalation rate
- Adjust developer impact fees
- Adjust property tax baseline for Transbay properties

Today's action item: Adopt rate for CY 2023

AICCIE Legislation 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.”

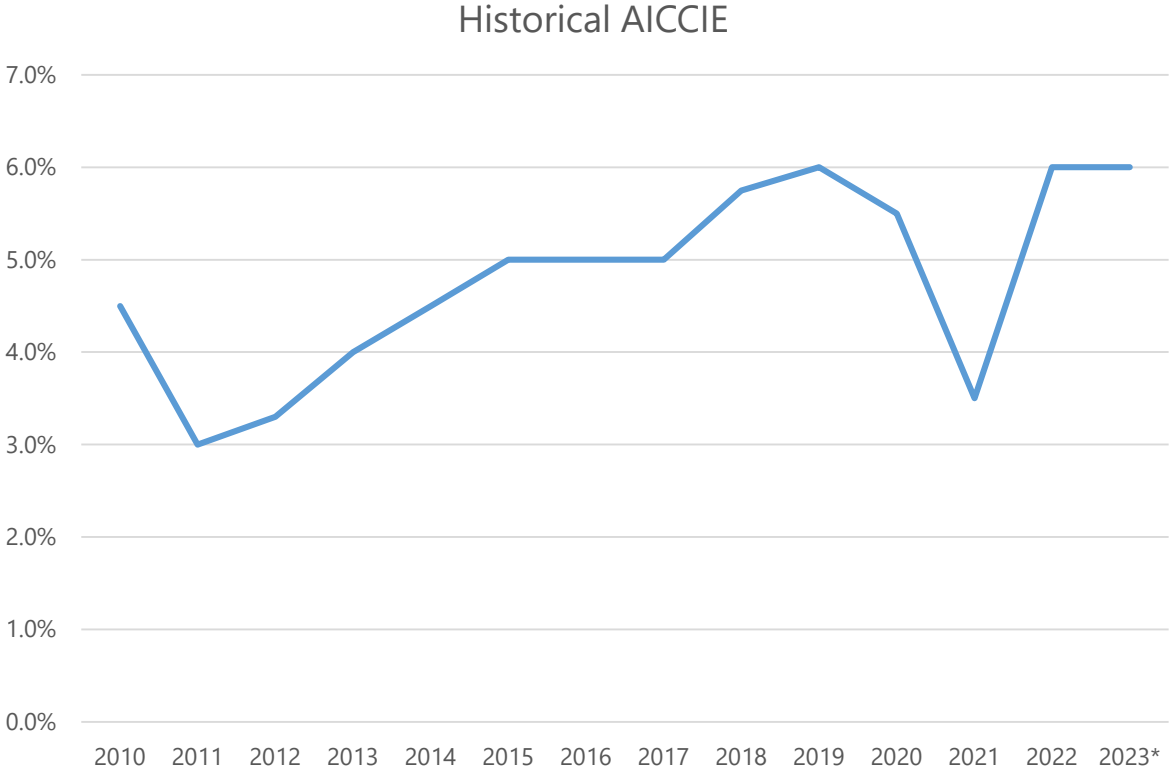
“The Controller shall review the amount of each development fee established in this Article and shall adjust the dollar amount of any development fee on an annual basis every January based solely on the AICCIE...”

Contents

- ❑ Rate recommendation
- ❑ Review of methodology
- ❑ Industry indices
- ❑ Fuel and construction materials
- ❑ Labor
- ❑ Bid Market
- ❑ Local construction market

AICCIE Recommendation

- ❑ **6.0%** for CY 2023
 - ❑ Inflation impacts on materials and fuels; supply chain challenges
 - ❑ Active construction market and good bid market competition



*2023 rate pending CPC acceptance

Methodology

Review indices and update rate

- Bureau of Labor Statistics
- Engineering News-Record
- Turner Index
- TBD Bid index

Interview local experts

- SF Gov departments
- Construction companies, other private experts

Understand SF public construction market

- Bid competition & validity of engineer's estimate
- Materials costs
- Local labor considerations

Contextualize with state, national and global market trends

- Resources:
 - 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

Retrospective Industry Indices

	Description	2018	2019	2020	2021	2022	
National Indices							
Turner Building Cost Index	Change in costs of non-residential building construction nationwide	5.6%	5.5%	2.4%	0.9%	8.1%	
BLS New Construction PPI	Change in output price of new non-residential construction	4.3%	5.5%	2.5%	3.2%	18.8%	
BLS Maintenance Contractor PPI	Change in costs of price for work done to maintain and repair non-residential buildings	3.4%	4.3%	2.0%	4.1%	15.6%	
Local Indices							
BLS SF Metro CPI	Change in cost of local consumer goods	3.9%	3.2%	1.6%	3.2%	6.8%	
BLS SF Metro Employment Cost Index	Change in employment cost (averages total compensation and wages)	4.0%	2.6%	2.9%	3.1%	4.5%	
ENR CCI – San Francisco	Change in SF <i>common</i> labor and materials	2.5%	2.8%	5.4%	3.4%	14.4%	
ENR BCI – San Francisco	Change in SF <i>skilled</i> labor and materials	1.9%	4.9%	6.5%	5.7%	23.2%	
TBD Consultants Bid Index	Change in construction bid for a simple new construction project in SF	0.54%	10.4%	2.6%	3.6%	17.2%	
AICCIE Rate		5.8%	6.0%	5.5%	3.5%	6.0%	6.0%*

BLS = Bureau of Labor Statistics

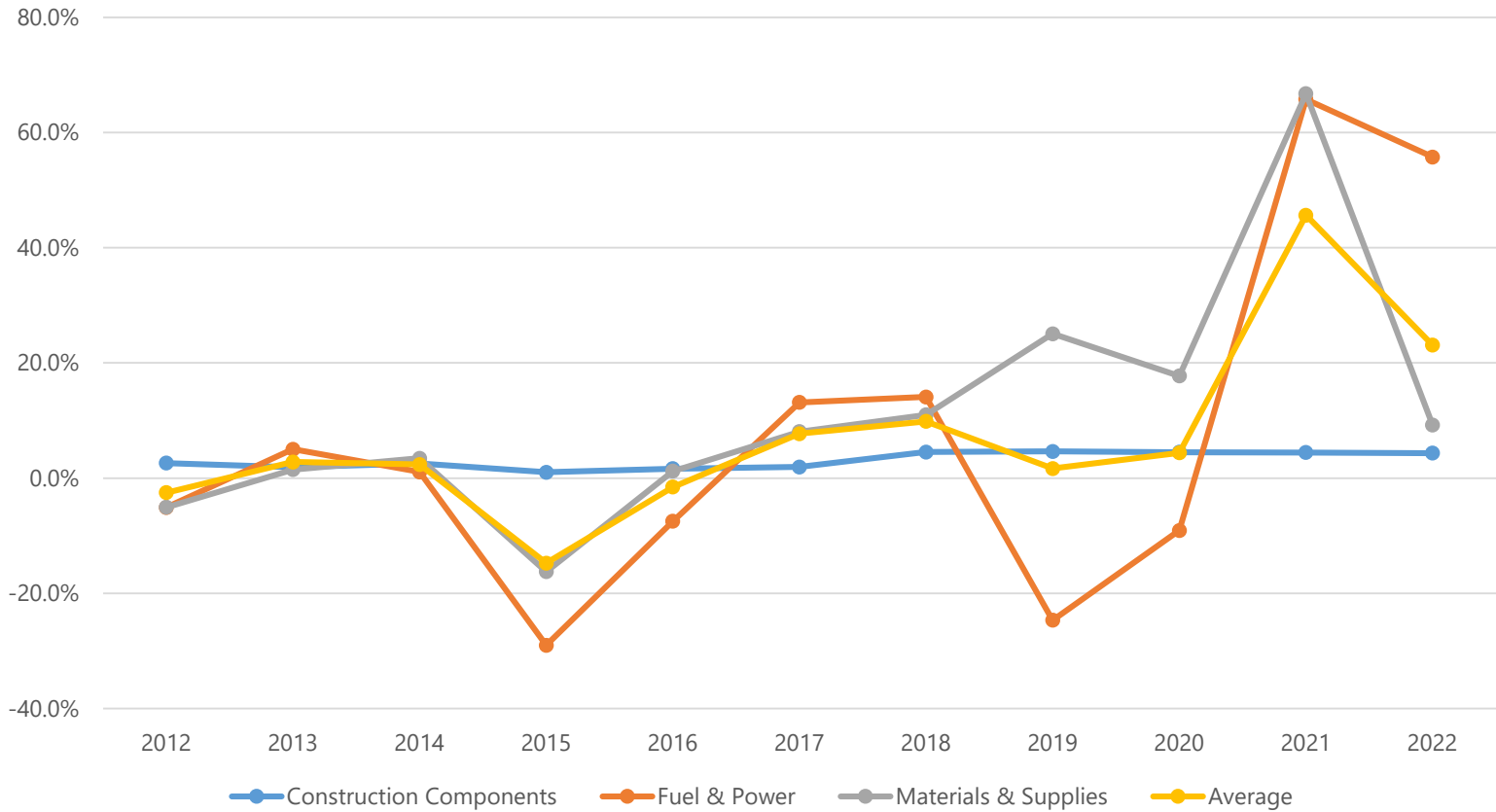
PPI = Product Price Index, measures the average change of selling prices

CPI = Consumer Price Index

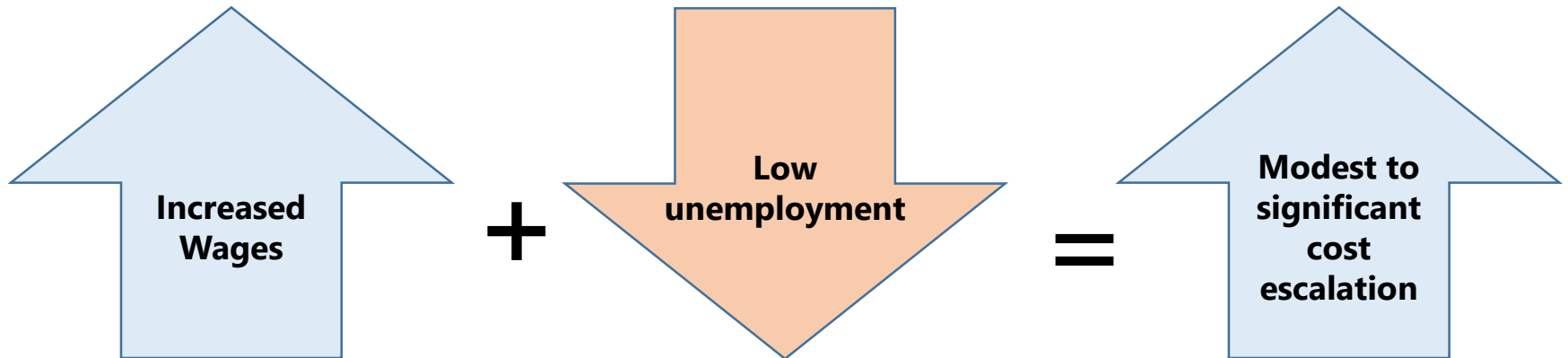
Materials Costs – Combined Categories

- Materials and fuel prices changes have come down since last year

Annual Rate of Change in Construction Input Categories



Local Labor Considerations



- ❑ SF unemployment: 2.3%; Bay Area unemployment: 2.8% (August 2022)
- ❑ Construction labor shortage persists
- ❑ Multi-year contracts provide stability; local construction labor costs increasing 3 - 5% per year

Impact of # of Bids on Costs

- DPW received an average of 4.25 bids per project (out of 29 projects)

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%

Perspectives from City Project Managers

- ❑ Better bid environment
 - ❑ Average accepted bid for Public Works projects 4.7% under the engineer's estimate
- ❑ Material delays
- ❑ Scarcity of skilled trades and general labor shortage; some subcontractors went out of business
- ❑ COVID safety protocols impacts productivity

"We continue to get multiple bidders; costs are higher, but [bids] have remained for the most part within our estimated ranges."

Market Conditions

- Total construction market volume increased 1.2% in CY 2021 and is projected to increase 9.3% by end of CY 2022
 - Office, multifamily development and healthcare construction returned in 2021
- Supply chains causing construction delays
- Inflation and possible dampening demand for new construction

“...the potential for a recession in 2023 is a consistent topic of conversation in the contracting community.”

2023 SF Experts Projected Escalation

Organization	2020 Estimate	2021 Estimate	2022 Estimate	2023 Estimate
Public Institutions				
SFO	6	2-3	6-9	5
SFPUC	6	4-5	6	6
Stanford University				3
Builders				
Pankow	5	3-4	5-10	5
Cumming Construction	4.5	3	5.6	4.8
Clark Construction	6.5	3-4	4.5-5.5	5.5
Jacobs	6	5	6-10	8
Market Consultants				
TBD Construction Consultants	5-6	3.5-4	4-5	6-7
Saylor Consulting Group	4.5	4	5	7
Martin Lee Corporation	5	5	8	8
Sightlines/Gordian	5.47	3.6	3.8	5.88
Average	5.75	3.8	6.0	6.3

Industry experts are estimating SF 2023 escalation in the range of 3% to 8%

Summary

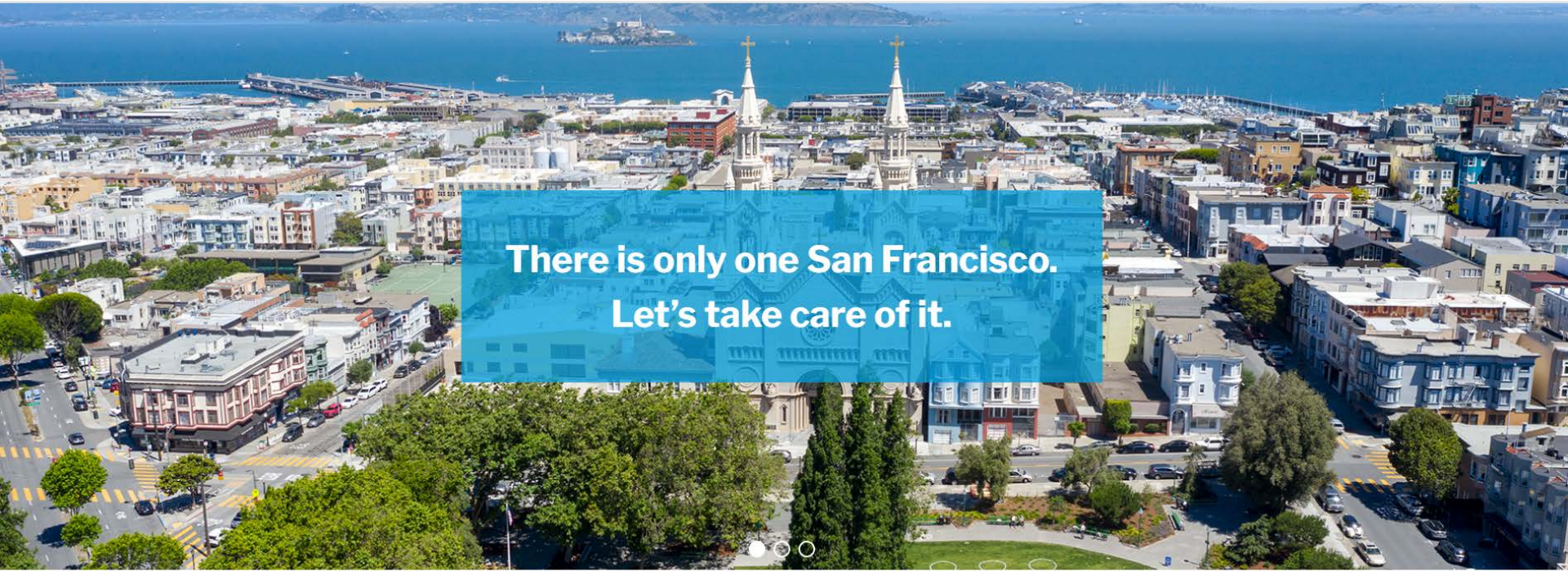
- ❑ ORCP recommends 6.0%
- ❑ Local experts estimating rates 3% - 8%
 - Tight labor market
 - Materials delays
 - Good bid competition

Questions or Comments?

An official website of the City and County of San Francisco



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The Office of Resilience and Capital Planning is the City and County of San Francisco's program to plan and finance projects that strengthen the integrity and resilience of San Francisco's infrastructure, neighborhoods, and residents.

www.onesanfrancisco.org

Appendix



Perspectives from the Field

“Broadly speaking, there is less material volatility than in the recent past, and the potential for a recession in 2023 is a consistent topic of conversation in the contracting community.”

Source: Email Response from Cumming

“Competition for projects has been dependent on how complex the contracts/projects are.”

Source: PUC Project Manager

“We get multiple bidders; costs are higher, although they have remained for the most part within our estimated ranges.”

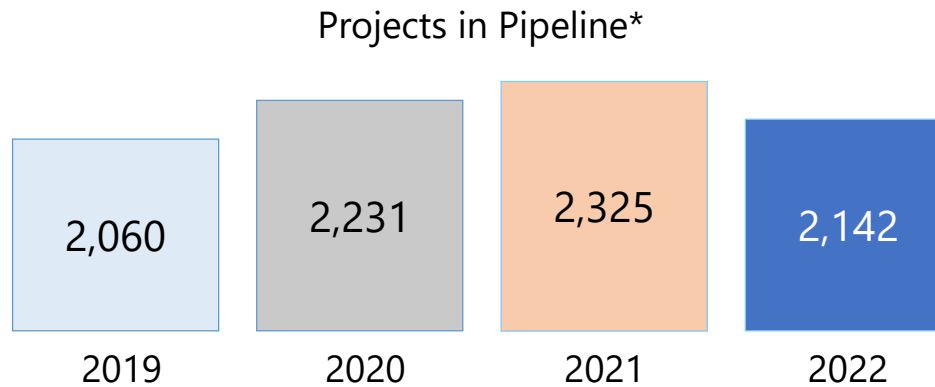
Source: SFO Project Manager

Bay Area Market Conditions

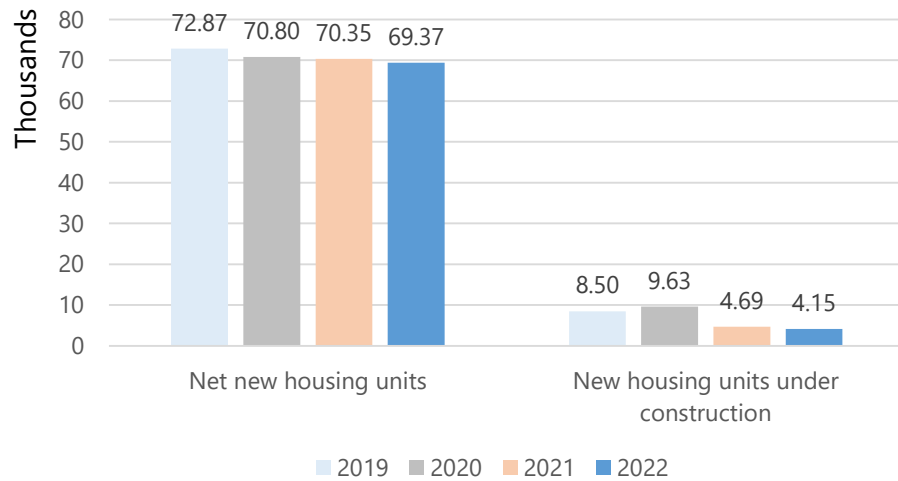
CURRENT MAJOR BAY AREA PROJECTS OVER \$2B

Related Santa Clara
San Jose BART Extension
High Speed Rail
Google North
The Rise Mixed Use
Pacheco Reservoir Enlargement
Mission Point Mixed Use
UCSF Parnassus Heights Hospital
Potrero Power Plant
Dumbarton Rail Bridge

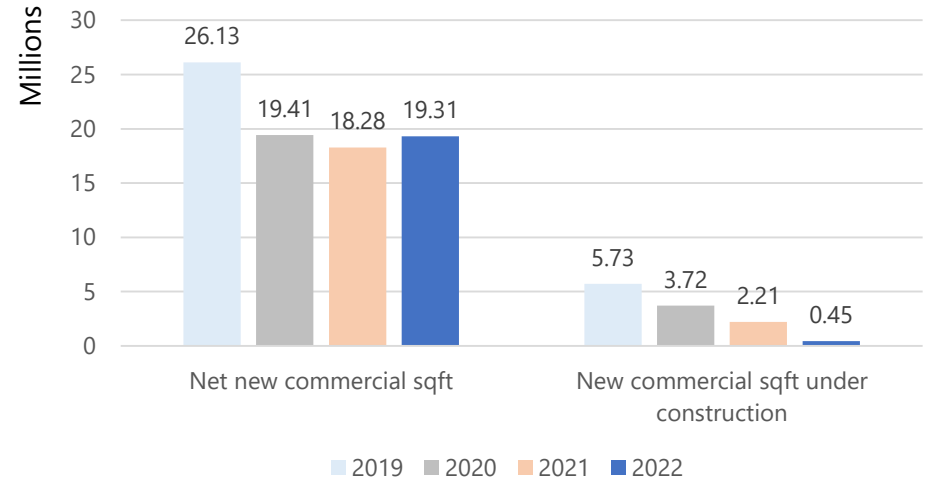
Projects in Pipeline



Housing Construction in Pipeline



Commercial Construction in Pipeline



Major SF Public Spend 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

Legislation Impacting San Francisco Construction Market

- ❑ Bipartisan Infrastructure Law
- ❑ Transportation Bond (failed June 2022 ballot)
- ❑ \$487M Health and Recovery Bond (approved November 2020 ballot)
- ❑ \$628M Earthquake Safety & Emergency Response Bond (approved March 2020)
- ❑ Prop E Amendment to Prop M
- ❑ \$600M Affordable Housing Bond (approved November 2019)
- ❑ Central SOMA Plan (approved December 2018)
- ❑ \$425M Seawall Bond (approved November 2018)
- ❑ State Affordable Housing Bond (approved November 2018)

State Economy

- ❑ State GDP shrank 1.5% in 2020, but increased 11.6% in 2021.
- ❑ 4.1% unemployment rate in August 2022; similar to the level before the pandemic
- ❑ Tax receipts were strong through 2020 and 2021
- ❑ FY23 budget included \$1.4 billion for CA Ports to support supply chain improvements, \$13.8 billion for housing and homelessness programs, \$9.5 billion for transportation projects over four years

Possible Recession

“The recession will eventually temper [construction] prices in late 2023 / early 2024. The data issued today argues lower inflation than originally forecasted for 2024 [...] the Fed will not be able to manage a soft landing.

The construction market in SF may contract faster [...] because office construction will likely not rebound soon and housing starts will remain depressed with the higher interest rates in 2023.”

Source: Saylor Consulting Email Survey Response

National Construction Sector Outlook

- ❑ Continuing recovery in construction
 - ❑ 3.9% construction unemployment in August 2022 (4.5% last year)
 - ❑ National construction volume projected to increase 9.3% by 2022
 - ❑ Re-opening of Chinese manufacturing could ease construction material supply chain impacts

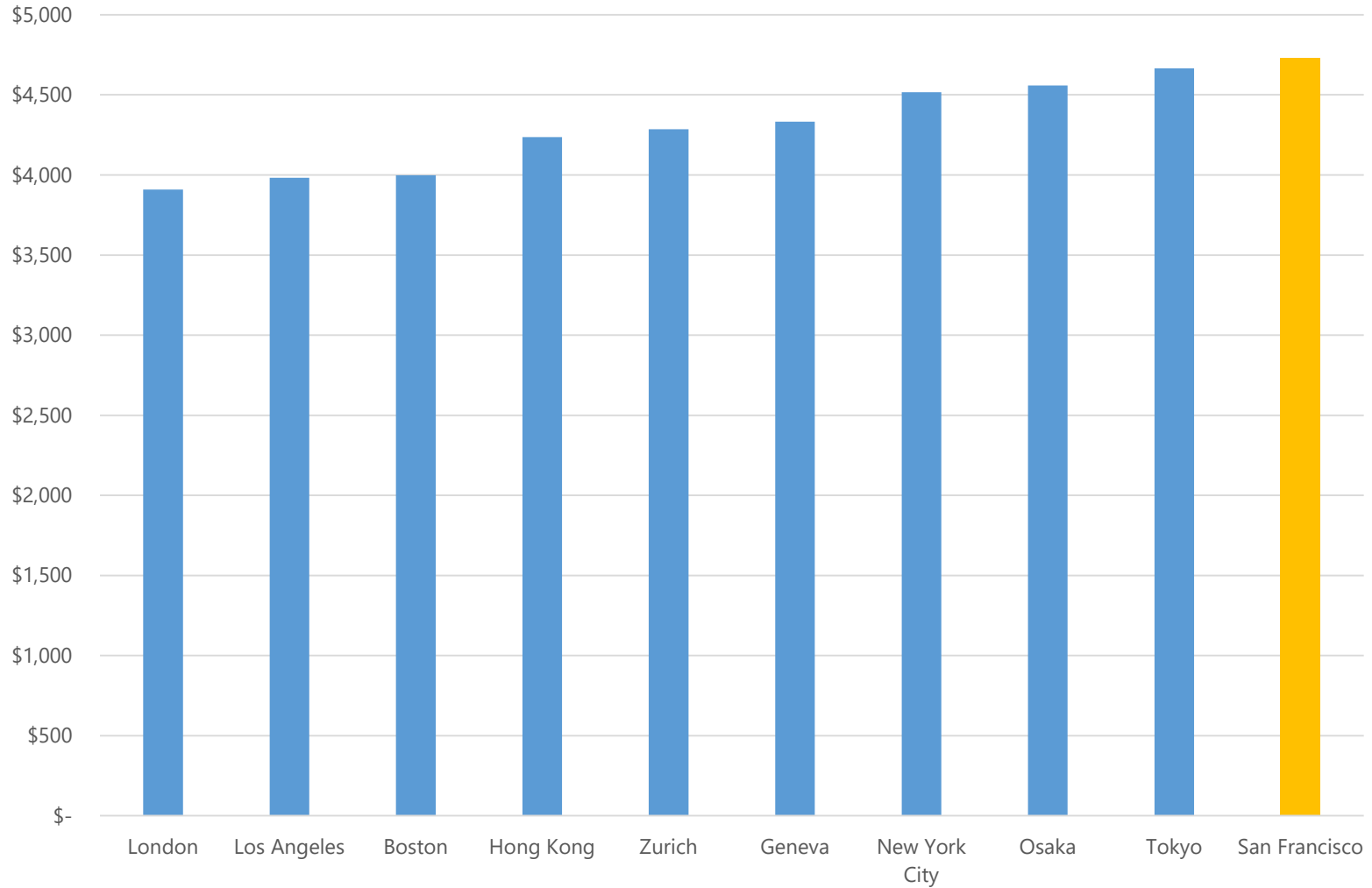
- ❑ Stronger push on infrastructure construction
 - ❑ \$550 billion of new spending on U.S. infrastructure over the next 5 years

Global Economic Trends

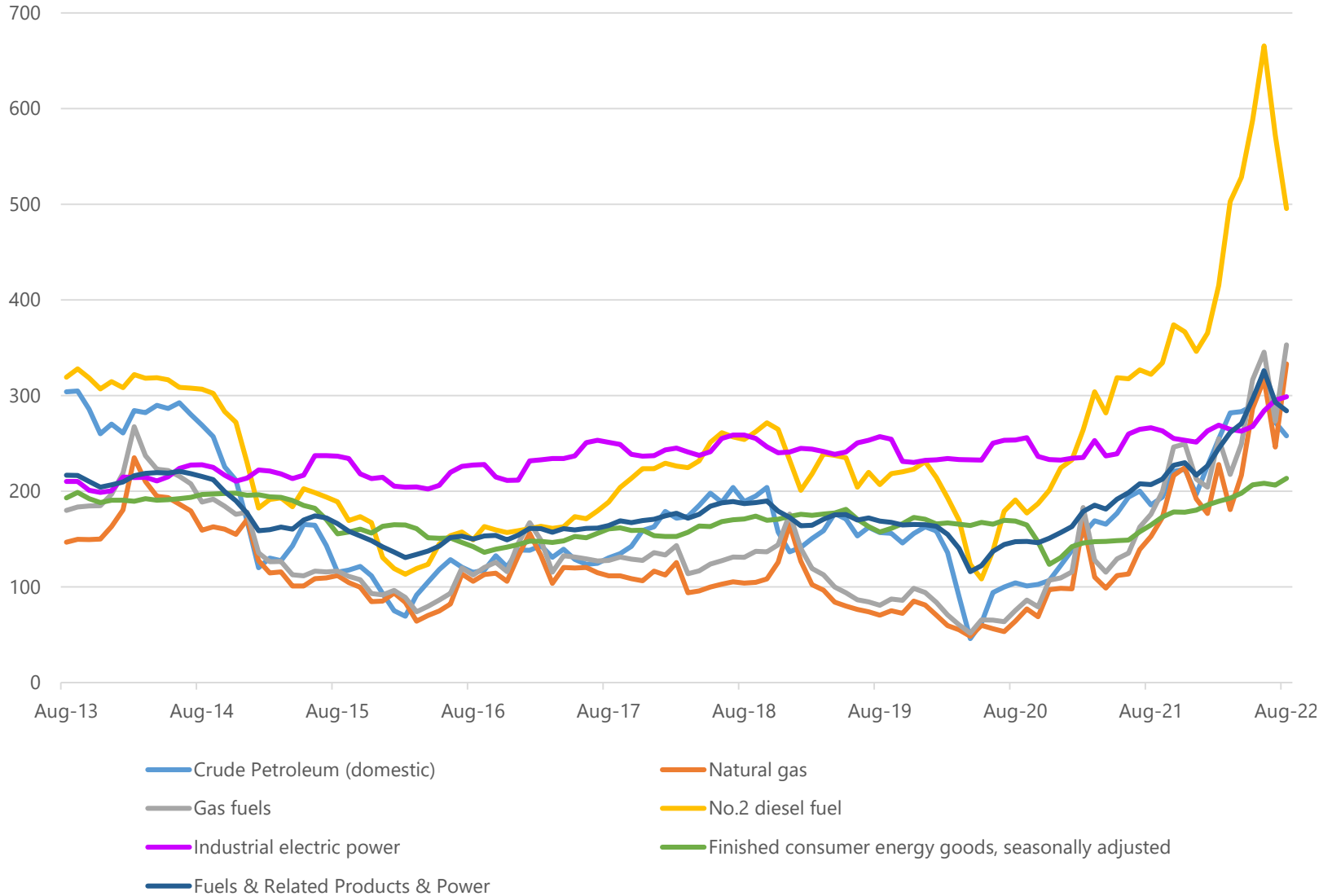
- ❑ Growth in global construction growth expected as part of anticipated long recovery from COVID-19 recession
- ❑ Ongoing uncertainty
 - ❑ Tentative global growth recovery in 2021 slowed with rising inflation and slowed outputs from China in 2022
 - ❑ Oil price volatility
 - ❑ Russian-Ukraine conflict
 - ❑ Possibility of economic recession beyond 8 – 12 months

10 Most Expensive Cities to Build

Cost per square meter

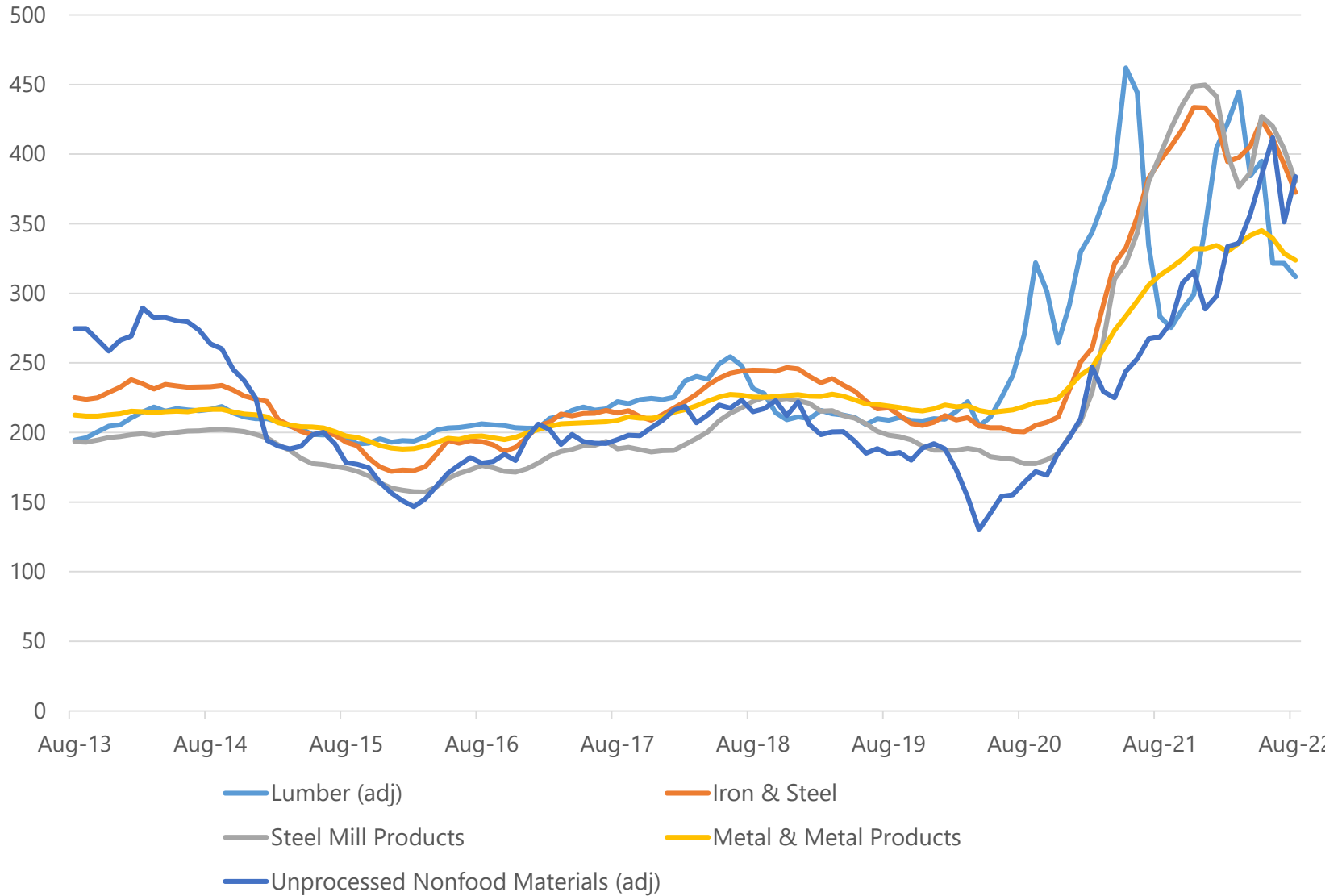


Select Fuel & Power PPI Trends



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

Select Materials & Supplies PPI Trends



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

Construction materials impacted by tariffs

Volatile Materials
Lumber
Steel
Aluminum
Copper
Concrete
Glass
Asphalt
Gypsum

Subtrade Shortages
Mechanical
Electrical
Plumbing
Concrete
Glazing
Drywall