

# **2022 Annual Infrastructure Construction Cost Inflation Estimate**



November 15<sup>th</sup>, 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)

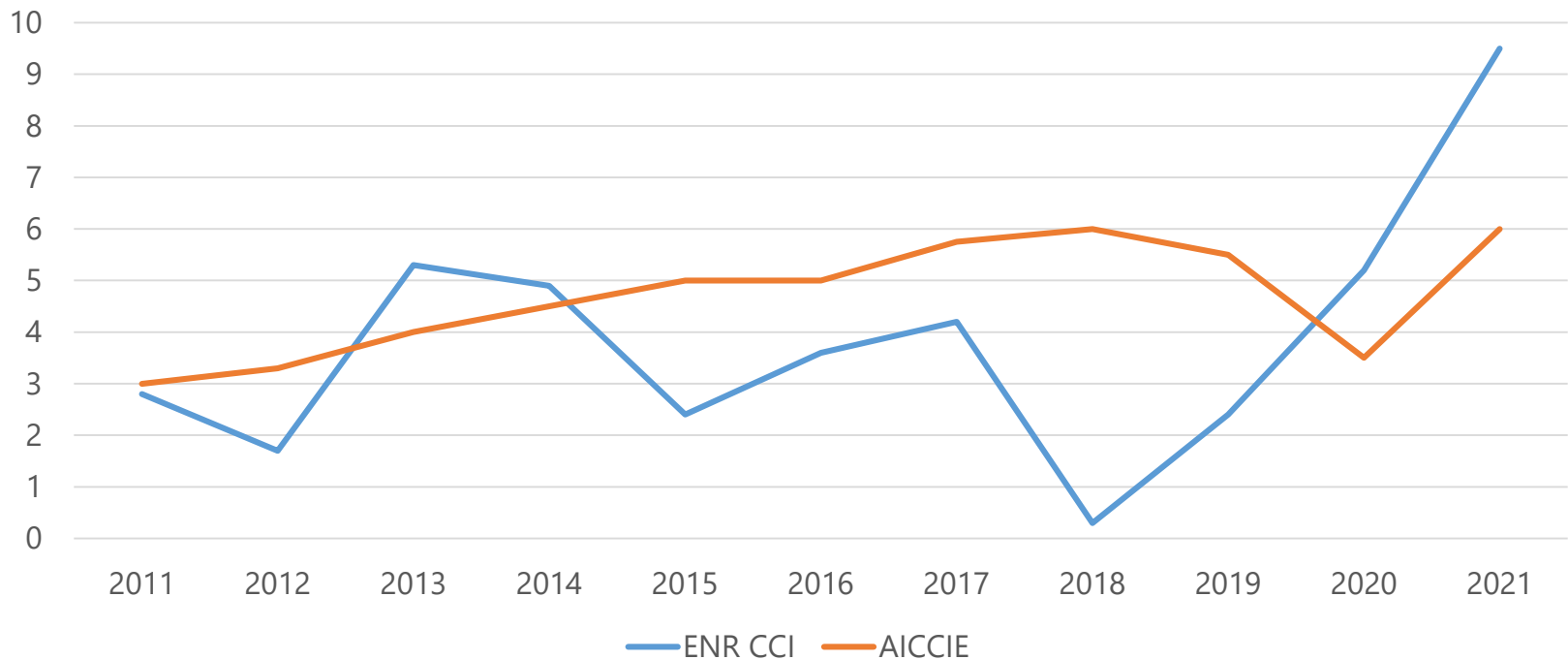
# ENR CCI Deep-Dive

- ❑ 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**

# 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 vs. ENR CCI



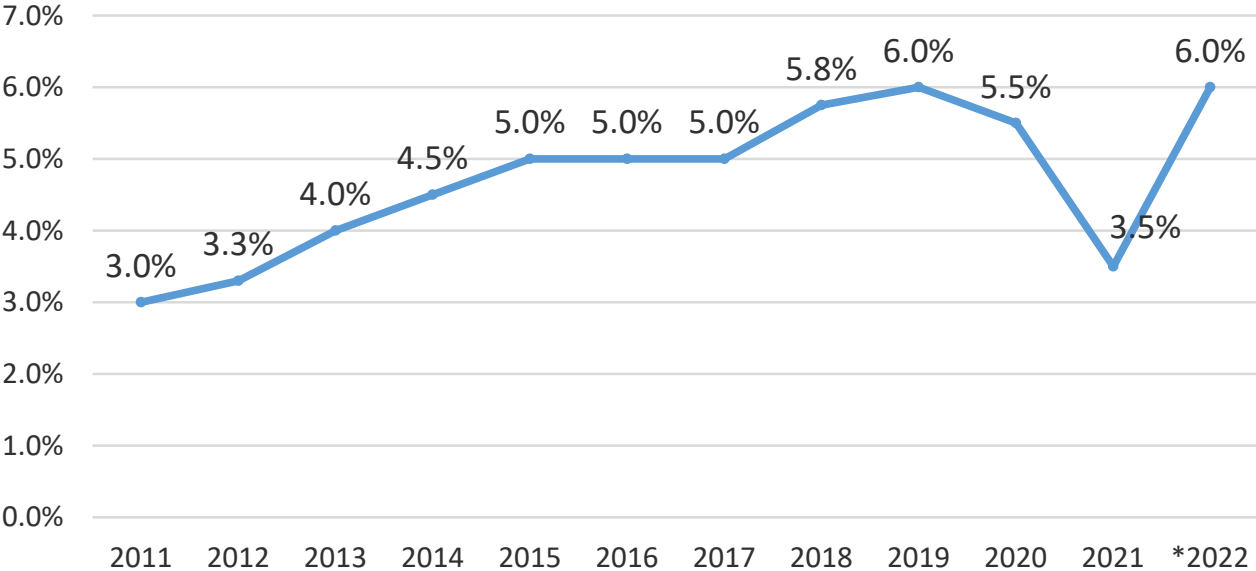
\* AICCIE rate determined for next fiscal year (e.g. 2021 number prospective for 2022)

\* 2022 AICCIE pending CPC acceptance

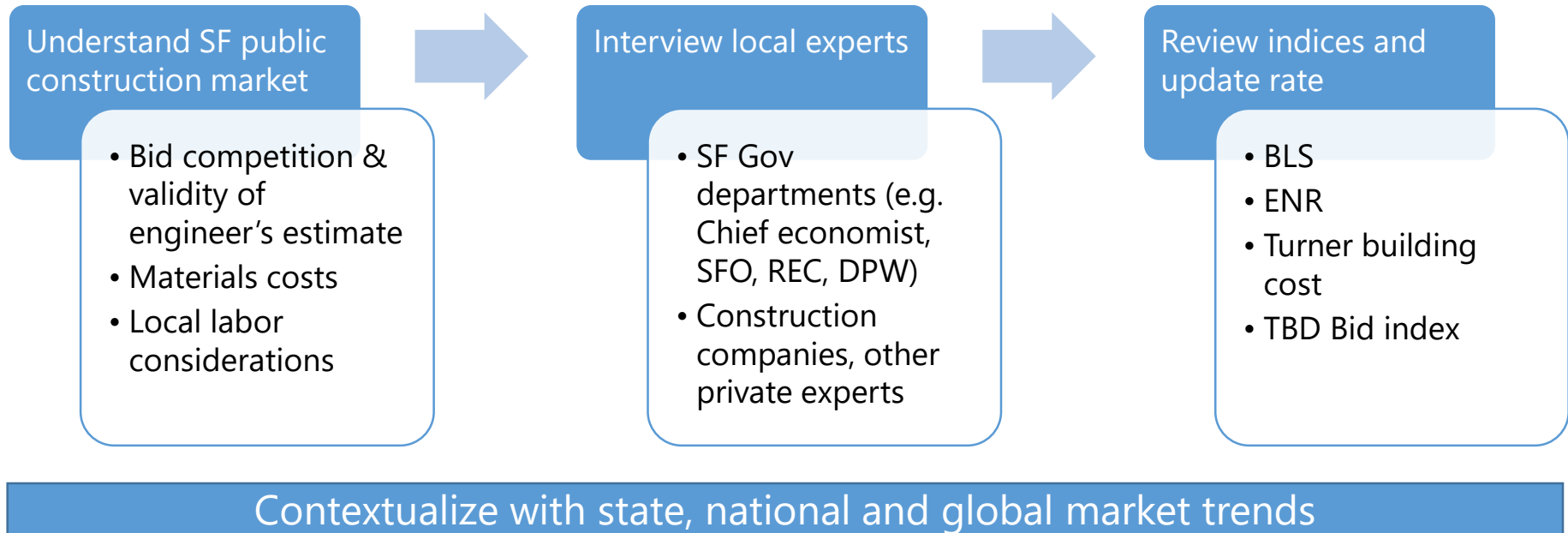
# AICCIE Recommendation (using current methodology) CY2022

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

Historical AICCIE



# Current AICCIE Methodology



## □ 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

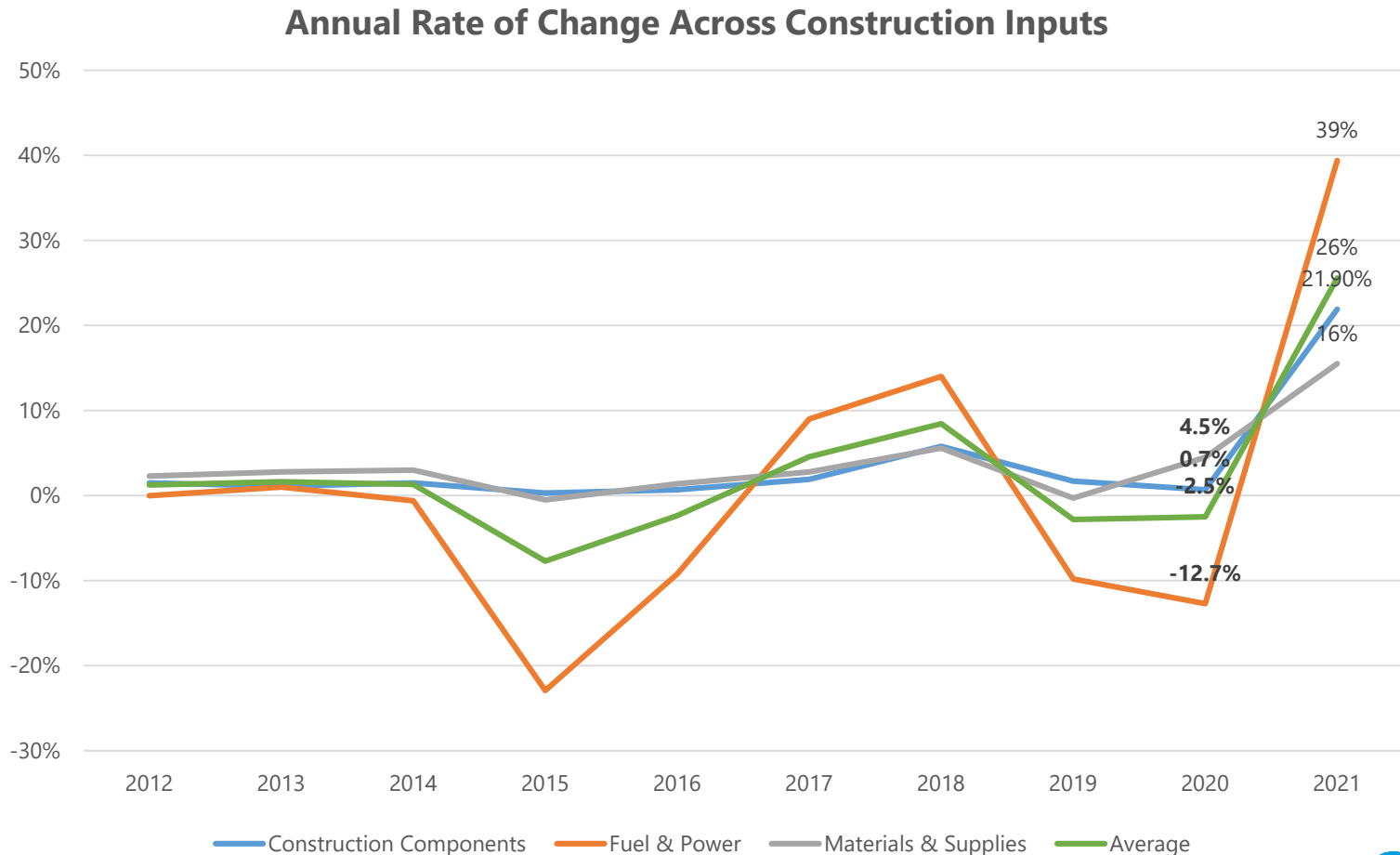
# Contractor/Project Manager Perspective

- 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%



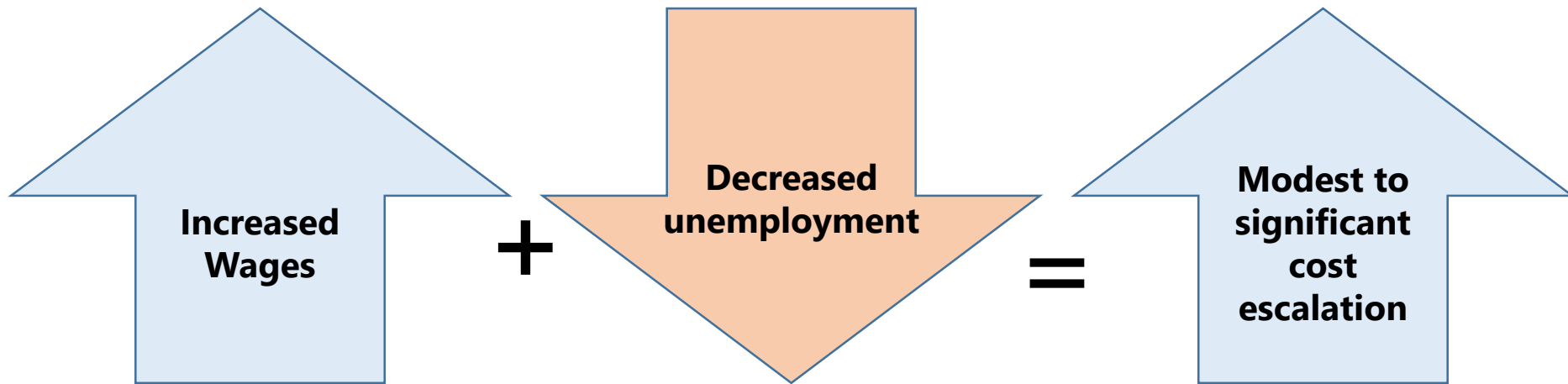
# Materials Costs – Combined Categories

- 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

# 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

# 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

# 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

# Decision for Capital Planning Committee: Endorse Methodology and Rate

## 1. **Historic AICCIE methodology – 6%** ← **Staff Recommendation**

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# Questions or Comments?



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## ONESF Building Our Future

There's only one San Francisco. Let's take care of it.

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.



### Capital Plan

The Plan captures the City's major infrastructure projects for the next ten years and recommends funding levels based on priority and availability for each project.

[Enter The Plan](#)



### Capital Budget

The Budget puts the Plan into action by allocating funding over the next two years for projects recommended in the Plan.

[Enter The Budget](#)



### Capital Planning Committee

The Capital Planning Committee (CPC) makes recommendations on capital projects to the Mayor and Board of Supervisors regarding capital plans, projects, and funding.

[View Committee Info](#)

# 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...**”

# 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
<b>Average</b>	<b>3.8</b>	<b>6.0</b>	<b>2.2</b>

**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
<b>Turner Building Cost Index</b>	Change in costs of non-residential building construction nationwide	4.5%	4.8%	4.2%	5.6%	5.5%	1.8%	1.5%
<b>BLS New Construction PPI</b>	Change in output price of new non-residential construction	1.7%	0.6%	3.5%	3.3%	5.6%	2.1%	5.0%
<b>BLS Maintenance Contractor PPI</b>	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%
<b>BLS SF Metro CPI</b>	Change in cost of local consumer goods	2.6%	3.1%	3.4%	4.3%	2.7%	1.6%	3.7%
<b>BLS SF Metro Employment Cost Index</b>	Change in employment cost (averages Total Compensation and Wages/Salaries)	2.2%	2.2%	5.8%	6.2%	2.6%	2.9%	3.1%
<b>ENR CCI – San Francisco</b>	Change in SF <i>common</i> labor and materials	2.4%	3.6%	4.2%	0.3%	2.4%	5.2%	6.9%
<b>ENR BCI – San Francisco</b>	Change in SF <i>skilled</i> labor and materials	2.6%	3.7%	4.8%	0.5%	4.2%	6.0%	11.8%
<b>TBD Consultants Bid Index</b>	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%
<b>AICCIE</b>	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)

# 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

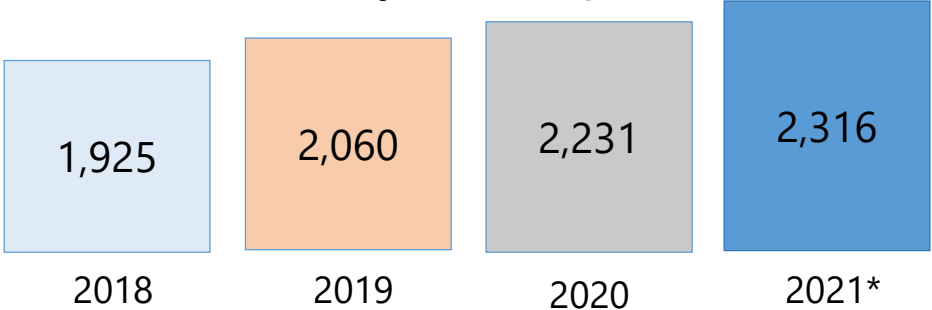
## CURRENT MAJOR BAY AREA PROJECTS (\$2+ B)

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

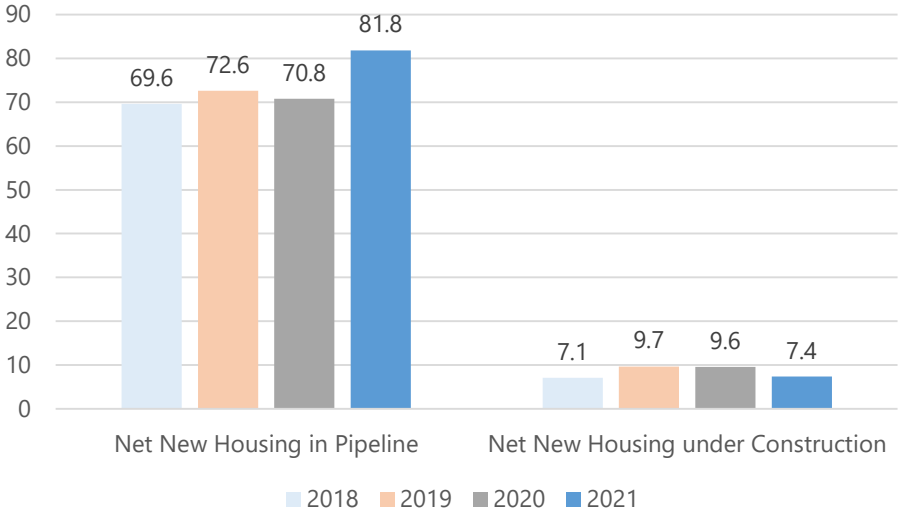
- Most expensive city in US for construction
- Largest projects over \$2B this year, compared to \$1B last year
- Uncertainty in office development
  - Companies increasingly adopting fully remote work policy
  - Empty offices in the short-term, speculative long-term impacts
- Residential construction ~65% of total construction
  - Rent about ~15% from pre-pandemic levels
- Construction spending still far above national average, top 10 projects valued over \$2B

# SF Planning Pipeline Statistics

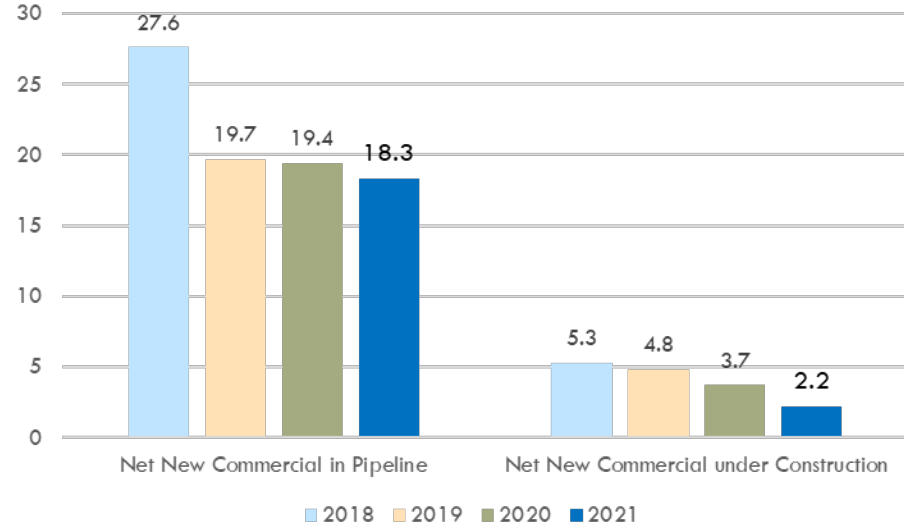
Projects in Pipeline



YOY Housing Construction Growth (K Units)



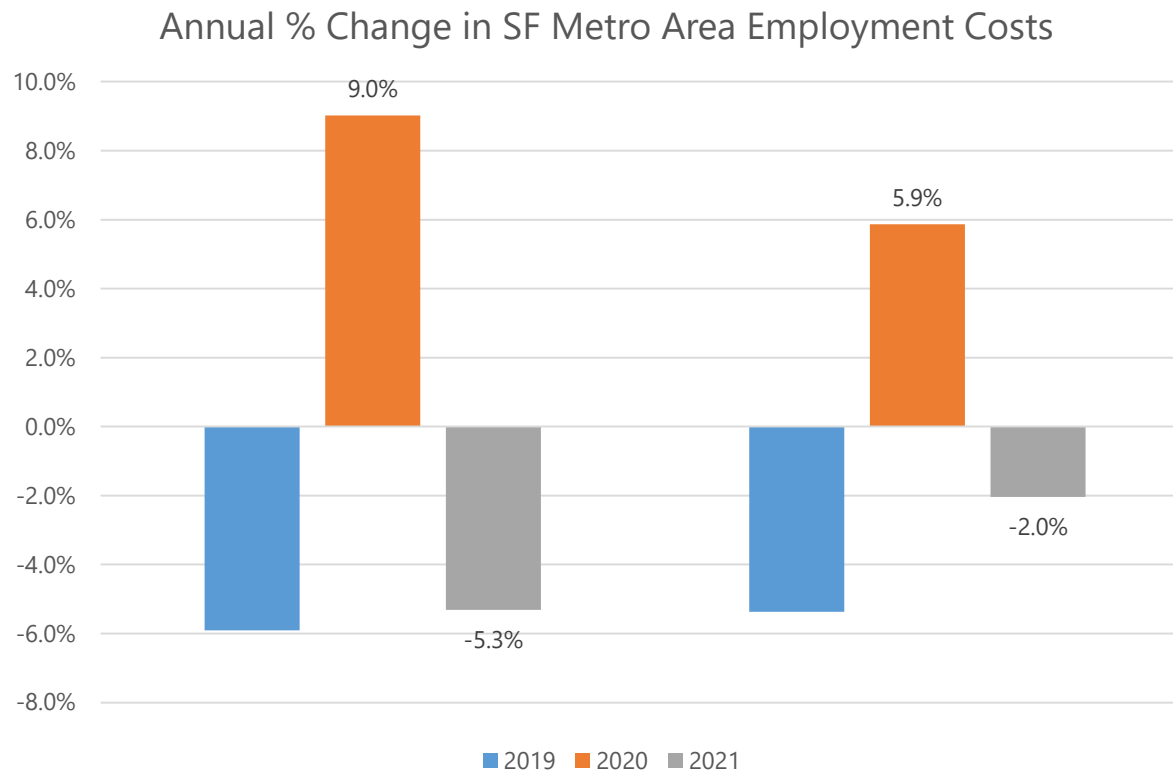
YOY Commercial Construction Growth (M sqft)



Source: SF Planning Department Statistics, Q1 2021, received 10/15/21  
 \*\*2021 planning pipeline data from Q1, rather than usual Q2 comparison data\*\*

# 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

# 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)

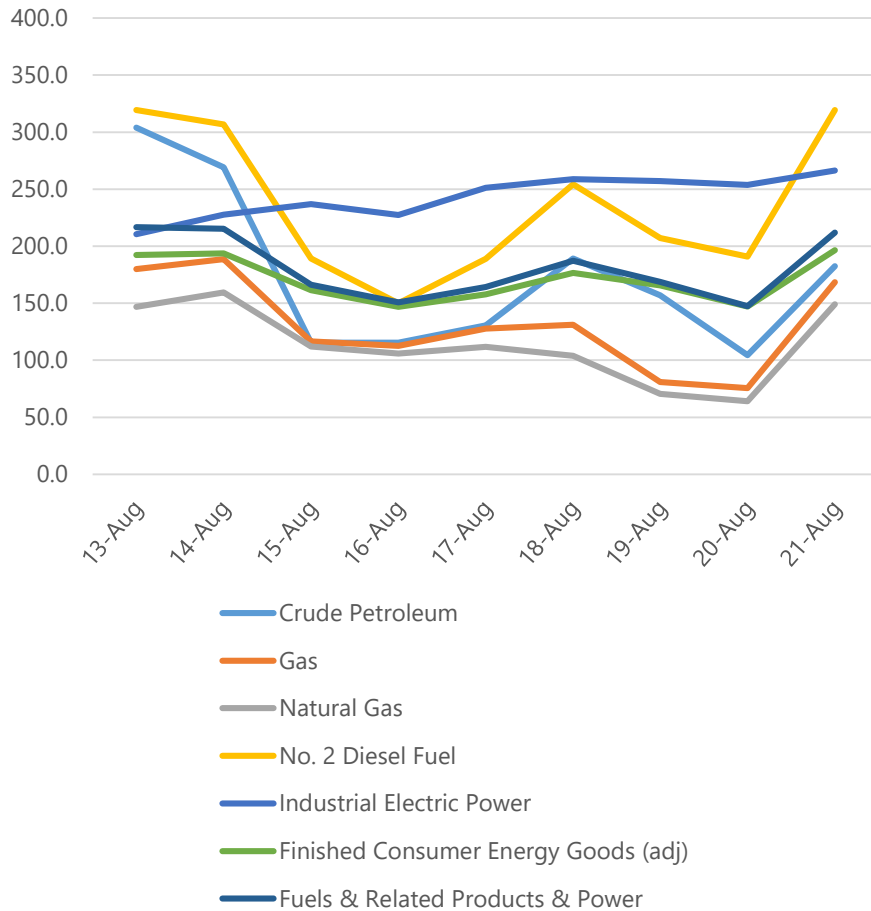
# Materials and Trades – Special Concerns

Volatile Materials
Lumber
Steel
Aluminum
Copper
Concrete
Glass
Asphalt
Gypsum

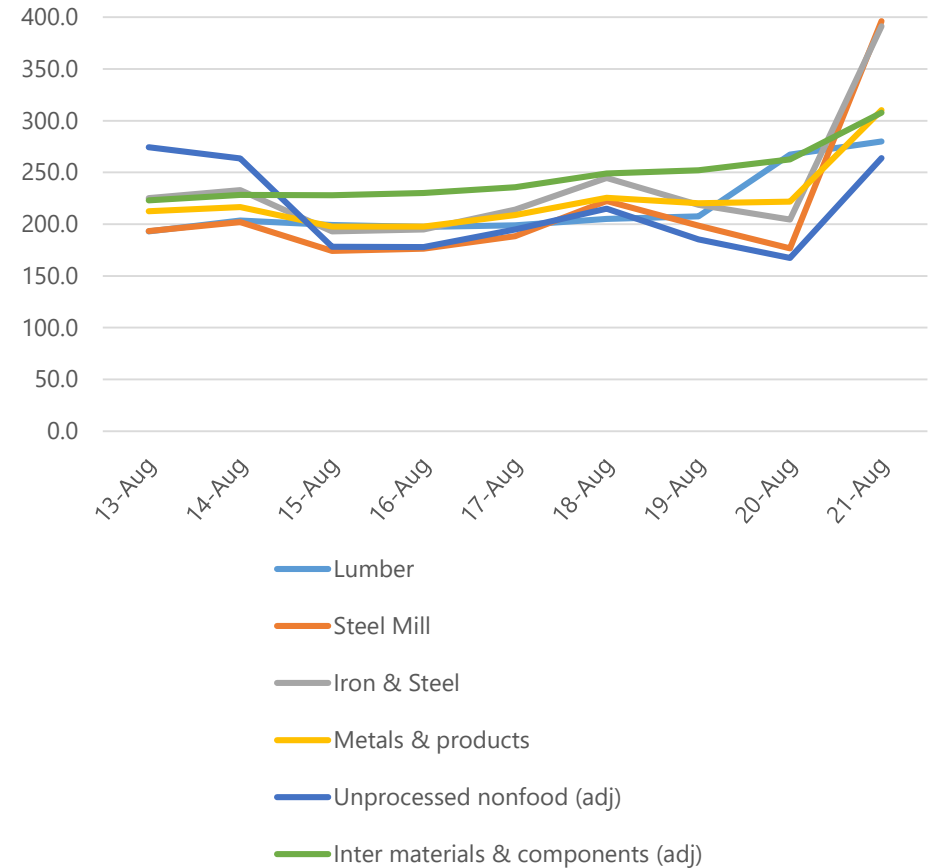
Subtrade Shortages
Mechanical
Electrical
Plumbing
Concrete
Glazing
Drywall

# Materials Costs – Individual Commodities

Select Fuel & Power PPI Trends



Select Materials & Supplies PPI Trends



# 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

## 10 Most Expensive Cities to Build

Cost per Square Meter in USD

