2020 Annual Infrastructure Construction Cost Inflation Estimate

There's only one San Francisco. Let's take care of it.
Annual Infrastructure Construction Cost Inflation Estimate (AICCIE)

- **Today’s action item**: Adopt the AICCIE for CY 2020

- **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 FRRM and other city forecasting tools
  - Adjusts property tax baseline for Transbay properties
ORCP recommends an AICCIE of 5.5% for CY 2020

Construction still booming even as slowdown looms
Methodology

- Reviewed cost inflation data, market trend analyses, employment data, and a variety of national, state and local commercial and institutional construction cost inflation indices to:
  - Understand economic conditions
  - Identify inflation trends for construction related materials and services
  - Gauge San Francisco’s current construction market

Resources Used:

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

<table>
<thead>
<tr>
<th>Construction Index</th>
<th>Description</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turner Building Cost Index</td>
<td>Change in costs of non-residential building construction nationwide</td>
<td>4.1%</td>
<td>4.4%</td>
<td>4.5%</td>
<td>4.8%</td>
<td>4.2%</td>
<td>5.6%</td>
<td>5.5%</td>
</tr>
<tr>
<td>BLS New Construction PPI</td>
<td>Change in output price of new non-residential construction</td>
<td>1.9%</td>
<td>3.1%</td>
<td>1.7%</td>
<td>0.6%</td>
<td>3.5%</td>
<td>3.3%</td>
<td>5.6%</td>
</tr>
<tr>
<td>BLS Maintenance Contractor</td>
<td>Change in costs of price for work done to maintain and repair non-residential</td>
<td>1.6%</td>
<td>2.9%</td>
<td>2.0%</td>
<td>1.3%</td>
<td>3.1%</td>
<td>2.7%</td>
<td>5.0%</td>
</tr>
<tr>
<td>BLS SF Metro CPI</td>
<td>Change in cost of local consumer goods</td>
<td>2.0%</td>
<td>3.0%</td>
<td>2.6%</td>
<td>3.1%</td>
<td>3.4%</td>
<td>4.3%</td>
<td>2.7%</td>
</tr>
<tr>
<td>BLS SF Metro Employment Cost</td>
<td>Change in employment cost (averages Total Compensation and Wages/Salaries)</td>
<td>-</td>
<td>4.5%</td>
<td>2.2%</td>
<td>2.2%</td>
<td>5.8%</td>
<td>6.2%</td>
<td>2.6%</td>
</tr>
<tr>
<td>ENR CCI – San Francisco</td>
<td>Change in SF common labor and materials</td>
<td>5.3%</td>
<td>4.9%</td>
<td>2.4%</td>
<td>3.6%</td>
<td>4.2%</td>
<td>0.3%</td>
<td>2.4%</td>
</tr>
<tr>
<td>ENR BCI – San Francisco</td>
<td>Change in SF skilled labor and materials</td>
<td>3.7%</td>
<td>3.0%</td>
<td>2.6%</td>
<td>3.7%</td>
<td>4.8%</td>
<td>0.5%</td>
<td>4.2%</td>
</tr>
<tr>
<td>TBD Consultants Bid Index</td>
<td>Change in construction bid cost for an indexed simple new construction project in SF</td>
<td>6.4%</td>
<td>4.2%</td>
<td>12.5%</td>
<td>11.9%</td>
<td>2.7%</td>
<td>0.2%</td>
<td>9.8%</td>
</tr>
<tr>
<td>AICCIE</td>
<td>City of SF estimate for escalation in the calendar year listed (prepared the previous October)</td>
<td>4.0%</td>
<td>5.0%</td>
<td>5.0%</td>
<td>4.5%</td>
<td>5.0%</td>
<td>5.75%</td>
<td>6.0%</td>
</tr>
</tbody>
</table>

- 2019 average across all listed indices: 4.6% (2.8% in 2018)
- 2019 average across all local indices in shaded rows: 4.3% (2.3% in 2018)
### 2020 SF Experts Projected Escalation

<table>
<thead>
<tr>
<th>Organization</th>
<th>2019 Estimate</th>
<th>2020 Estimate</th>
<th>2019 vs. 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacobs</td>
<td>7.8</td>
<td>6</td>
<td>-1.8</td>
</tr>
<tr>
<td>Clark</td>
<td>7.6</td>
<td>6.5</td>
<td>-1.1</td>
</tr>
<tr>
<td>Webcor</td>
<td>7.5</td>
<td>4.5</td>
<td>-3.0</td>
</tr>
<tr>
<td>TBD Construction Consultants</td>
<td>7.5</td>
<td>5.5</td>
<td>-2.0</td>
</tr>
<tr>
<td>M. Lee Corporation</td>
<td>7</td>
<td>6</td>
<td>-1.0</td>
</tr>
<tr>
<td>SFO</td>
<td>5.5</td>
<td>6</td>
<td>+0.5</td>
</tr>
<tr>
<td>SFPUC</td>
<td>6</td>
<td>6</td>
<td>0.0</td>
</tr>
<tr>
<td>Pankow</td>
<td>6</td>
<td>5</td>
<td>-1.0</td>
</tr>
<tr>
<td>Cumming Construction</td>
<td>5.5</td>
<td>4.5</td>
<td>-1.0</td>
</tr>
<tr>
<td>Saylor Consulting Group</td>
<td>5</td>
<td>4.5</td>
<td>-0.5</td>
</tr>
<tr>
<td>UC Berkeley</td>
<td>5</td>
<td>5</td>
<td>0.0</td>
</tr>
<tr>
<td>UCSF</td>
<td>8</td>
<td>7</td>
<td>-1.0</td>
</tr>
<tr>
<td>Sightlines (academic institutions)</td>
<td>5</td>
<td>5.5</td>
<td>+0.5</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>6.4</strong></td>
<td><strong>5.5</strong></td>
<td><strong>-0.9</strong></td>
</tr>
</tbody>
</table>

Industry experts are estimating SF 2020 escalation in the range of 4.5% to 7.0%
Local Market Reality

“The Bay Area construction market continues to be challenging for owners, with more work than the current contractor and subcontractor capacity can supply. Consequently, we continue to see construction costs exceeding cost supported by labor and material increases alone.

Additionally, in an overburdened economy, productivity suffers, as less experienced and less productive workers join the workforce.”

Source: Saylor Consulting, Market Conditions San Francisco Bay Area 2019
Contractor/Project Manager Perspective

‘[The] biggest risk factor for the construction industry is finding qualified and responsive bidders at the subcontractor level.

Sub-contractors can pick and choose the work they want to bid on and to a large extent dictate the profit margins they are willing to work for.”

Source: TBD Consulting, California Current Market Conditions – August 2019
Contractor/Project Manager Perspective

Lack of competition especially at the subtrade level.

Lower productivity, which increases the cost of labor in excess of wage gains.

Public sector clients should carry bidding contingencies on all projects.

Expect market growth to level out and construction employment to continue to rise.

Most key construction materials have been falling since Q4 2018, market may have hit its peak in last year.
Global Construction Costs

10 Most Expensive Cities to Build
Cost per Square Meter in USD

- Munich
- UK South
- Chicago
- Dublin
- Seattle
- Hong Kong
- Zurich
- London
- New York
- San Francisco

Source: Turner & Townsend International Construction Market Survey 2019
National Economic and Sector Growth

- **Economic recovery continues, GDP growth slows**
  - GDP growth in Q2 2019 of 2.0% annual rate, the 21st consecutive quarter of growth
  - Overall US unemployment: 3.7% in August 2019 (3.9% last year)

- **Construction activity still strong but with signs of slowing**
  - National construction industry unemployment: 3.6% (3.4% last year)
  - Construction spending down -2.7% YOY, dipping from the high of last year’s 5.8% increase.
  - Nonresidential spending slight increase 0.1% YOY
  - Dodge Momentum Index down -10.3% YOY.
  - Lower interest rates, but commercial loans slow with affordable housing exception.

- **Heightened volatility**
  - Natural disasters, geo-political conflict, trade wars, tariffs
National New Construction Cost Indices

- Average is 2.2% higher than 2018.

State Economy

- Federal funding uncertainty
  - Threats to reduce or eliminate various federal sources continue
- San Francisco strongly competitive within CA and closely aligned with State priorities
- State projections re: anticipated downturn
SF Planning Pipeline Statistics

Projects in Pipeline

- 2017: 1,442
- 2018: 1,925
- 2019: 2,060

YOY Housing Construction Growth (K units)

- 2017: 63.6
- 2018: 69.6
- 2019: 72.6

YOY Commercial Construction Growth (M sqft)

- 2017: 24.6
- 2018: 27.6
- 2019: 19.7

Source: SF Planning Department Statistics, received 10/15/19
Local Labor Considerations

- SF unemployment: 2.5%, well below national level of 3.7% (July 2019)
- SF area construction employment numbers up 7.9% from last year.
- 37% higher construction labor hourly wage than national average

SF is in the same cost multiplier band as last year, at approximately 3.7 average bids per construction project. Slight increase from 2019.

### Journal of Construction Engineering & Management (National, 2005)

<table>
<thead>
<tr>
<th># of Bids</th>
<th>Low Bid Deviation From Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.15</td>
</tr>
<tr>
<td>2</td>
<td>1.11</td>
</tr>
<tr>
<td>3</td>
<td>1.07</td>
</tr>
<tr>
<td>4</td>
<td>1.01</td>
</tr>
<tr>
<td>5</td>
<td>0.95</td>
</tr>
<tr>
<td>6</td>
<td>0.91</td>
</tr>
<tr>
<td>7</td>
<td>0.89</td>
</tr>
<tr>
<td>8</td>
<td>0.88</td>
</tr>
</tbody>
</table>

### Saylor Consulting (Bay Area, 2015)

<table>
<thead>
<tr>
<th># of Bids</th>
<th>% Differential (estimate vs. bid)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+25% to 50%</td>
</tr>
<tr>
<td>2-3</td>
<td>+10% to 25%</td>
</tr>
<tr>
<td>4-5</td>
<td>0% to 10%</td>
</tr>
<tr>
<td>6-7</td>
<td>0% to -10%</td>
</tr>
<tr>
<td>8 – 10</td>
<td>-10% to -20%</td>
</tr>
</tbody>
</table>

Source: Saylor Consulting Market Trends 2015 Construction Forecast
Local Private Industry Employment Cost Index

- Wages and benefits declined in 2019

Annual % Change in SF Metro Area Employment Costs

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

- Negative change across all categories in the last year, after three years of consistent growth

Local Sector Forecast

CURRENT MAJOR BAY AREA PROJECTS ($1+B)

- Pier 70
- Hunters Point Shipyard 5M Project
- Delta Water Tunnels
- City Place Mixed-Use Development
- Treasure Island
- Santa Clara BART Extension
- Vallco Town Shopping Center
- Stanford University Expansion
- Mission Rock
- Potrero Power Plant

- Key sectors contracting since Q1 2019
- Construction employment has continued is at its highest mark for many years
- Construction spending still far above national average, top 10 projects valued over $1B
- Expect market growth to level and construction employment to continue to rise in 2020 and 2021

Source: Cumming Quarterly Construction Market Report Q3 2019
Conclusion

- Strong demand continues to be major construction cost escalation driver
- Shifts in bidding environment but remains favorable for contractors/subcontractors
  - Labor: high demand, tight supply
  - Bids are coming in closer to estimate
- Local experts are using 2020 escalation rates of 4.5% to 6%.
- ORCP’s recommendation of 5.5% is in line with experts’ predictions. It is higher than cost and material indices suggest on their own due to the strong effects of high activity, low bid counts, limited locally available labor resources, and contractor selectivity.
Questions or Comments?

Find us @ www.onesanfrancisco.org
### Materials and Trades – Special Concerns

#### Volatile Materials

<table>
<thead>
<tr>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lumber</td>
</tr>
<tr>
<td>Steel</td>
</tr>
<tr>
<td>Aluminum</td>
</tr>
<tr>
<td>Copper</td>
</tr>
<tr>
<td>Concrete</td>
</tr>
<tr>
<td>Glass</td>
</tr>
<tr>
<td>Asphalt</td>
</tr>
<tr>
<td>Gypsum</td>
</tr>
</tbody>
</table>

#### Subtrade Shortages

<table>
<thead>
<tr>
<th>Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical</td>
</tr>
<tr>
<td>Electrical</td>
</tr>
<tr>
<td>Plumbing</td>
</tr>
<tr>
<td>Concrete</td>
</tr>
<tr>
<td>Glazing</td>
</tr>
<tr>
<td>Drywall</td>
</tr>
</tbody>
</table>

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

- Seawall Bond (approved November 2018)
- State Affordable Housing Bond (approved November 2018)
- SF Affordable Housing Bond (November 2019 ballot)
- Earthquake Safety & Emergency Response Bond (March 2020 ballot)
- Central SOMA Plan (approved December 2018)
- Public Health & Safety Bond (approved June 2016)
- SB 5 “Redevelopment 2.0” (on Governor’s Desk*)
- State School & College Facilities Bond (March 2020 ballot)
- New State laws to fast-track shelters & supportive housing
- New State infrastructure bond (November 2020 ballot)
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

- 2010 and 2014 ESER
- 2012 Neighborhood Parks & Open Space
- 2014 Transportation
- 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
Economic Trends—Global

- Global construction growth expected overall, despite ongoing uncertainty

<table>
<thead>
<tr>
<th>Source</th>
<th>Global Construction Industry Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fitch Solutions Global Infrastructure Report 2019</td>
<td>Peak growth in 2018. 3.2% avg. growth 2019-2023</td>
</tr>
<tr>
<td>PWC Global Construction 2030</td>
<td>Project 85% growth in construction output through 2030</td>
</tr>
<tr>
<td>Turner &amp; Townsend International Construction Market Survey</td>
<td>4.1% forecasted construction cost inflation 2019</td>
</tr>
</tbody>
</table>

- Risks
  - Slowing of the global economy
  - More conservative central bank decisions resulting in tighter credit conditions
  - Ongoing trade tensions between the US and China
  - Uncertainty in the terms of “Brexit”
  - Ongoing geopolitical tensions and concerns about the economic outlook
Materials Costs – Individual Commodities

Select Fuel & Power PPI Trends

Select Materials & Supplies PPI Trends