2016 Annual Infrastructure Construction Cost Inflation Estimate
Annual Infrastructure Construction Cost Inflation Estimate (AICCIE)

- **Today’s Action item**: Adopt the AICCIE for CY 2016

- **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
CPP recommends an AICCIE of **4.5%** for CY 2016

- Reflects continued escalation being driven by a competitive local market.

![Historical AICCIE](chart.png)

*pending CPC acceptance*
### Escalation Indices

<table>
<thead>
<tr>
<th>Construction Index</th>
<th>Description</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turner Building Cost Index</td>
<td>Change in costs of non-residential building construction nationwide</td>
<td>-8.4%</td>
<td>-4.0%</td>
<td>1.6%</td>
<td>2.1%</td>
<td>4.1%</td>
<td>4.6%</td>
<td>4.5%</td>
</tr>
<tr>
<td>BLS New Construction PPI</td>
<td>Change in output price of new non-residential construction</td>
<td>2.0%</td>
<td>-0.1%</td>
<td>2.8%</td>
<td>2.9%</td>
<td>1.9%</td>
<td>3.1%</td>
<td>1.7%</td>
</tr>
<tr>
<td>BLS Maintenance Contractor PPI</td>
<td>Change in costs of price for work done to maintain and repair non-residential buildings</td>
<td>1.8%</td>
<td>0.4%</td>
<td>2.2%</td>
<td>1.9%</td>
<td>1.7%</td>
<td>2.8%</td>
<td>2.0%</td>
</tr>
<tr>
<td>BLS SF Metro CPI</td>
<td>Change in cost of local cost of consumer goods</td>
<td>-</td>
<td>1.0%</td>
<td>2.9%</td>
<td>2.8%</td>
<td>2.0%</td>
<td>3.0%</td>
<td>2.6%</td>
</tr>
<tr>
<td>BLS SF Metro Employment Cost Index</td>
<td>Change in employment cost (averages Total Compensation and Wages/Salaries)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4.5%</td>
<td>2.2%</td>
</tr>
<tr>
<td>ENR CCI – San Francisco</td>
<td>Change in SF common labor and materials</td>
<td>4.6%</td>
<td>1.9%</td>
<td>2.8%</td>
<td>1.7%</td>
<td>5.3%</td>
<td>4.9%</td>
<td>2.4%</td>
</tr>
<tr>
<td>ENR BCI – San Francisco</td>
<td>Change in SF skilled labor and materials</td>
<td>2.8%</td>
<td>2.5%</td>
<td>6.0%</td>
<td>1.5%</td>
<td>3.7%</td>
<td>3.0%</td>
<td>2.6%</td>
</tr>
<tr>
<td>TBD Consultants Bid Index</td>
<td>Change in construction bid cost for an indexed building project scope in SF</td>
<td>-</td>
<td>26.2%</td>
<td>4.3%</td>
<td>14.8%</td>
<td>7.6%</td>
<td>6.4%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Local Expert Average</td>
<td>Estimated cost escalation rate for the coming year</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>AICCIE</td>
<td>City of SF estimate for escalation in the calendar year listed (i.e. 2015 AICCIE is the estimate made in October 2014 for 2015)</td>
<td>3.0%</td>
<td>3.25%</td>
<td>4.0%</td>
<td>4.5%</td>
<td>5.0%</td>
<td>5.0%</td>
<td>5.0%</td>
</tr>
</tbody>
</table>

- 2015 average across all listed indices: 3.95%
- 2015 average across all local indices (shaded rows): 4.56%
### 2015 SF Experts Projected Escalation

<table>
<thead>
<tr>
<th>Organization</th>
<th>Description</th>
<th>Cost Escalation Estimates for 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stanford University</td>
<td>Estimated escalation rate on capital projects within campus</td>
<td>3.0%</td>
</tr>
<tr>
<td>Cummings Construction</td>
<td>Estimated escalation rates on SF construction</td>
<td>5.5%</td>
</tr>
<tr>
<td>Davis Langdon/AECOM</td>
<td>Estimated escalation rates on SF construction</td>
<td>6.0%</td>
</tr>
<tr>
<td>Leland Saylor Associates</td>
<td>Estimated escalation rates on SF construction (includes SFUSD)</td>
<td>4.0%</td>
</tr>
<tr>
<td>M. Lee Corporation</td>
<td>Estimated escalation rates on SF public sector construction</td>
<td>6.0%</td>
</tr>
<tr>
<td>TBD Construction Consultants</td>
<td>Estimated escalation rates on SF construction</td>
<td>5.0% minimum</td>
</tr>
<tr>
<td>Turner Construction</td>
<td>Estimated escalation rates on SF construction</td>
<td>5.0% - 6.0%</td>
</tr>
<tr>
<td>Webcor</td>
<td>Estimated escalation rates on SF construction</td>
<td>6.0%</td>
</tr>
</tbody>
</table>

Industry experts are estimating SF 2016 escalation in the range of 4% – 6%
Average: 5.1%
Contractor/Project Manager Perspective

With so many projects, contractors can afford to be pickier and build in higher profit margins

**Skyrocketing costs are giving some contractors pause about starting new projects**

Empty labor halls and unrelenting demand lead some to hire “travelers” from out of town, which can bring higher costs and risks

**Active mega-projects and demanding tech clients are sapping resources, making timelines more difficult to meet**

Contracting with a complex client like the City/Bidding on more unusual projects becomes less desirable when there are more straightforward options
SF Planning Pipeline Statistics

Projects in Pipeline

- **2014**: 894 projects
- **2015**: 1,120 projects

YOY Housing Construction Growth (K units)

- **2014**: 51 units
- **2015**: 55 units

YOY Commercial Construction Growth (M sqft)

- **2014**: 18.5 M
- **2015**: 24.1 M

Source: SF Planning Department Statistics, received 10/2/15
SF is in the same cost multiplier band as last year, although at 4.1 average bids per construction project, close to the next band.

### 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: 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

Source: Saylor Consulting Market Trends 2015 Construction Forecast
Local Cost Spike

From 2014 to 2015, San Francisco had the biggest increase in construction costs of any city in the country.

Source: JLL, United States Construction Perspective, Q2 2015
Local Labor Considerations

- SF unemployment: 3.5%, down 20% from 2014
- SF area construction employment up 4.7% from 2014
- SF metro wages up 2.2% in 2015 after 4.3% rise in 2014
- Shortages in specialized subcontractors and labor

Sources: CCORP Market Study Q2 2015, BLS SF Area Economic Summary, and BLS Employment Cost Index by Area

SF unemployment: 3.5%
US unemployment: 5.3%
Local Private Industry Employment Cost Index

- Continued rise in cost of both total compensation and wages and salaries, but less steep than last year

![Diagram showing YOY % Change in SF Metro Area Employment Costs 2014 vs 2015]

Source: Bureau of Labor Statistics Employment Cost Index by Area for San Francisco-San Jose-Oakland
2013 construction starts peak may help explain why average bid counts are not coming in lower.
Continued rise in cost of new construction across non-residential building types, but less steep than last year

Continued rise in cost of maintenance contractors, but less steep than last year

Materials Costs – Combined Categories

- Significant drop in energy prices and materials, but not in all construction costs

Local Sector Forecast

SF REGION CURRENT MAJOR PROJECTS ($750+M)

- Apple Campus 2 (Cupertino)
- Transbay Transit Center
- Treasure Island
- SalesForce Tower
- Parkmerced
- City Place (Santa Clara)
- Third Street Light Rail
- Seawall Lot 337 Mixed Use
- Mineta Airport Roads/Parking (SJC)

- Annual average of 8.2% increase in local construction volume over the next 3 years
- Annual construction volume forecast to hit $31.4B (+7.2%) in 2016
- Robust residential growth @ 23.1% in 2015 and 9.1% in 2016
- 181 projects submitted for permitting or breaking ground in SF alone

Source: Cumming Preliminary Market Study – Northern California Bay Area, July 17, 2015
Relevant Local Legislation

- TSP/TSF (if approved)

- Applies to most non-residential development, market-rate residential development creating 21 or more units, and large non-profit private universities with Institutional Master Plan

- Proposed $7.74 per gross sqft residential, $18.04 per gross sqft non-residential, and $7.61 per gross sqft PDR

- Prop A Affordable Housing Bond on the ballot in November

- Public Health & Safety Bond on the ballot in June (if approved)
# SF Debt Program and Enterprise Fund Projects

## Enterprise Fund Projects
- Central Subway
- Transit Optimization Program
- Pier 70
- Sewer System Improvement
- SFO On-Site Hotel

## Active GO Bond Programs
- 2008 and 2012 Neighborhood Parks & Open Space
- 2010 and 2014 ESER
- 2011 Road Resurfacing & Street Safety
- 2014 Transportation

## Other Major Public Building Projects
- Moscone Expansion
- Rehabilitation & Detention Facility
Conclusion

- Strong demand continues to be major construction cost escalation driver
  - Raw material prices mostly dropping with some important exceptions and little translation to lower supplies costs
  - Bidding environment remains favorable for contractors/subcontractors
    - Labor: high demand, tight supply
    - Subcontractor trades continue to increase profit margins
    - TBD Bid Index shows 12.5% increase in local bid estimates over the past year, triple last year’s increase

- Local experts are using 2016 escalation rates of 4.0% to 6.0%

- CPP’s recommendation of 4.5% is in line with experts’ predictions. It is higher than cost and material indices suggest due to the strong effects of high activity, limited locally available labor resources, and contractor selectivity.
Questions or Comments?

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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 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
Economic Trends—Global

- Global construction continued growth expected

<table>
<thead>
<tr>
<th>Source</th>
<th>Global Construction Industry Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>MarketLine Construction Global Industry Guide</td>
<td>10.3% CAGR for the period 2013-18</td>
</tr>
<tr>
<td>Timetric’s CIC Global Construction Outlook 2020</td>
<td>3.8% growth in 2015; 3.9% 2016-20</td>
</tr>
<tr>
<td>BMI Research Global Construction Outlook 2015-24</td>
<td>3.2% average annual growth 2015-24</td>
</tr>
</tbody>
</table>

- Rising debt levels in emerging market economies, particularly in construction facilitate growth but also bring risk
  - Low interest rates in the US, Europe, and Japan have encouraged borrowing

- Volatility and growth in global markets
  - Weaker consumption in Chinese manufacturing and construction, with recent construction growth heavily reliant on leveraged investments
  - Middle East and Africa region predicted to be fastest growing 2016-20
National Economic and Sector Growth

- Economic recovery continues
  - GDP growth at an annual rate of 3.7% as of Q2 2015; down slightly from 3.9% YOY
  - Overall US unemployment: 5.3%, down from 6.1% YOY
  - Strong job growth prompting more construction starts
  - Low interest rates encouraging financing, with lending activity up and higher rates anticipated soon

- Construction activity increasing
  - National construction industry unemployment: 6.1%, down 7.7% YOY
  - Construction spending up 4.8% YOY, still 14% below 2007 peak
  - Nonresidential construction spending up 12.7% YOY
  - Dodge Momentum Index up 20.6% YOY in commercial, up 5.1% YOY in institutional

US construction unemployment down 21% from last year
Strongest nonresidential construction spending growth since 2008
National Construction Costs

* Note that SF has a cost construction multiplier of 17-24% of the RS Means CCI 30-city average

Source: Jacobs Quarterly Construction Market Report, Third Quarter 2015
Materials Costs – Individual Commodities

Select Materials & Supplies PPI Trends

Select Fuel & Power PPI Trends

Materials Costs – Glass

**THE WALL STREET JOURNAL.**

**BUSINESS**

**Cost of Skyscraper Glass Hits Dizzying Heights**

Earlier manufacturing cutbacks create delays, add to price tag as construction rebounds

- Curtain wall prices reported up 30% in the last 18 months
- Many glass manufacturers shuttered during the recession, slow to reopen
- Shortage is causing project delays

A typical high-rise office tower can need hundreds of thousands of square feet of metal-framed glass panels. A Brookfield Property under construction in New York City. PHOTO: BEBETO MATTHEWS/ASSOCIATED PRESS

By ROBBIE WHelan

Updated Sept. 8, 2015 10:42 a.m. ET
Bids vs. Estimates

Average Industry Engineer Estimate vs. Low Bid
(CA-Wide)

Source: Saylor Consulting Market Trends 2015 Construction Forecast