West Region Update
Brian Schmidt, Sr. Regional Economist
May 2022
2021 Cement Consumption Performance

- **11% or Greater Growth**
- **2% to 10%**
- **+2% to -2%**
- **-2% to -10%**
- **11% or Greater Decline**
2022 Year-to-Date Cement Consumption Performance

- Through March

Legend:
- Blue: 11% or Greater Growth
- Light Blue: 2% to 10%
- Light Gray: +2% to -2%
- Dark Gray: -2% to -10%
- Brown: 11% or Greater Decline
Strength in Labor Markets Low Household Debt

**Labor Markets Are Strong**

% Unemployed

**Household Debt Service Ratio**

Deby as % of Disposable Income
The largest contributor to supply-chain disruptions has been the lack of available workers.

Participation rate accelerates as covid declines and mask mandates reduced.
PCA Supply Chain Index
2019=100

Key Assumption:
As Covid declines, supply constraints ease. The easing in supply-chain pressures are “sticky” downward and slow to correct.

Impact:
Declining at a 2.5% Quarterly rate, “normal” ranges are not reached until 2024.

Components
• Jolts Total
• Delivery Days
• Back Orders
• Inventory/Sales Ratio

Reasons for “Stickiness
• Global & China Resurge
• Labor Participation Improvement slow
• Strong Demand conditions likely to prevail
• Inventories remain lean
  • Logistics
**Macroeconomic Summary: Baseline**

**GDP Growth**
Real GDP Annual Growth

- 2021: 5.7%
- 2022: 2.8%
- 2023: 2.7%

**Unemployment Rate**
Percent Unemployed

- 2021: 3.9%
- 2022: 3.6%
- 2023: 3.5%

**Inflation Rate**
CPIU, Annual Percent Change

- 2021: 4.8%
- 2022: 6.6%
- 2023: 4.3%
Residential Update
Single Family Housing Permits: West

Source: Census

Pacific

2021: 8.4%
2022 YTD: 12.8%

Mountain

2020: 16.1%
2021 YTD: 13.6%
Multifamily Housing Permits: West

Source: Census

Pacific

Mountain

2021: 25.7%  
2022 YTD: 2.2%

2021: 45.5%  
2022 YTD: 23.1%
Monthly Payment to Household Income Ratio

Source: PCA
Percent Change in Monthly Mortgage Payment From Pre-Pandemic Levels

Estimated Monthly Payment in 2022/2019

- MSA’s in blue below average of all MSA’s in US; MSA’s in orange above.
- Widespread increase in monthly mortgage payment in region.
- Boise City, ID has doubled its monthly mortgage payment in three years.
Single Family Housing Permits

**Thousands**

### Pacific

- 2022: 4.3%
- 2023: -8.2%
- 2024: -6.8%
- 2025: 2.2%
- 2026: 4.2%

### Mountain

- 2022: 4.2%
- 2023: -9.6%
- 2024: -7.3%
- 2025: 3.2%
- 2026: 4.9%

Source: PCA
The Pacific region’s multifamily starts are expected to reach parity with single family and overtake single family volumes by the end of the forecast.
Residential Cement Consumption: West

(000) Metric Tons

Source: PCA
Nonresidential Update
Commercial Construction Spending: Pacific

$2009, Thousands, SAAR

Source: Census, Dodge, PCA
Commercial Construction Spending: Mountain

$2009, Thousands, SAAR

Source: Census, Dodge, PCA
Commercial Cement Consumption: West

(000) Metric Tons

Pacific

2022 2.3%
2023 1.6%
2024 2.4%
2025 3.3%
2026 4.0%


Mountain

2022 1.8%
2023 1.9%
2024 2.7%
2025 2.6%
2026 2.8%


Source: PCA
Active Rotary Rigs

- Wyoming
- New Mexico
- Colorado
- California

Source: Baker Hughes
Oil Well Cement Consumption

000 Metric Tons

Source: PCA
Public Update
Evolving State Fiscal Conditions

Percent Increases in General Fund Tax Revenues from Pre-COVID Levels

Covid Relief: The last Federal Covid Relief program included $350 Billion to support fiscal duress encountered by states, countries, cities and tribes.
State & Local capital investment in as a share of GDP has declined to a post WW II low.

Capital investment based on structures, i.e. schools & roads. Excludes equipments & software.

Source: BEA, PCA
Infrastructure Package

- Represents $550 billion in new spending
- Bill reauthorizes current surface transportation bills (FAST Act, WRDA, FAA, etc.) at current levels for 5 years, which totals $1.2 trillion
- Much less in dollar size than previous proposals but heavier emphasis on traditional infrastructure
Cement Consumption by Construction Sector

47.6 Million Metric Tons Over Five Year Program
Net New Spending on Roads & Bridges Per Capita

Source: White House, PCA
## Region Specific Spending: Western Water Infrastructure

- **$8.3 billion dedicated to funding just for water infrastructure in the western U.S.**
- **Nearly all spending categories carry significant cement intensity.**

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aging Infrastructure</td>
<td>3.20</td>
</tr>
<tr>
<td>Water storage, groundwater storage and conveyance projects</td>
<td>1.15</td>
</tr>
<tr>
<td>Water recycling and reuse projects</td>
<td>1.00</td>
</tr>
<tr>
<td>Desalination projects</td>
<td>0.25</td>
</tr>
<tr>
<td>Rural water projects</td>
<td>1.00</td>
</tr>
<tr>
<td>Dam safety projects</td>
<td>0.50</td>
</tr>
<tr>
<td>Drought Contingency Plan</td>
<td>0.30</td>
</tr>
<tr>
<td>waterSMART Water and Energy Efficiency Grants</td>
<td>0.40</td>
</tr>
<tr>
<td>Cooperative Watershed Management Program</td>
<td>0.10</td>
</tr>
<tr>
<td>Aquatic Ecosystem Restoration Program</td>
<td>0.25</td>
</tr>
<tr>
<td>Multi-benefit watershed projects</td>
<td>0.10</td>
</tr>
<tr>
<td>Colorado River fish species recovery programs</td>
<td>0.05</td>
</tr>
</tbody>
</table>
There Will Be a Wait for Pouring to Begin

Small Volumes of cement consumption associated with the program materialize in second half 2022.

Federal & State Paperwork

Bid Letting & Review

Contract Award to Construction

Average Construction Start: Early/Mid-2023

- April
- Six Months
- One Year
- Eighteen Months

- 4-9 Months
- 4-12 Months
- 6-15 Months
- 6-21 Months

Roughly 38% occurs through competitive grants.
### Infrastructure Timing Distribution

#### Highway & Bridges

<table>
<thead>
<tr>
<th>Fiscal Year Spending</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
</tr>
<tr>
<td>2023</td>
<td>$20</td>
<td>$4</td>
<td>$9</td>
<td>$4</td>
</tr>
<tr>
<td>2024</td>
<td>$20</td>
<td>$4</td>
<td>$9</td>
<td>$4</td>
</tr>
<tr>
<td>2025</td>
<td>$20</td>
<td>$4</td>
<td>$9</td>
<td></td>
</tr>
<tr>
<td>2026</td>
<td>$20</td>
<td></td>
<td>$4</td>
<td></td>
</tr>
<tr>
<td>2027</td>
<td>$20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total Spending        | $100  | $4    | $13   | $17   | $20   |

| Total Spent           | $20   | $17   | $13   | $4    |

This is an illustration of the process and not actual numbers. Process repeated across all construction segments that are impacted by the Infrastructure Program.

Also the issue of inflation: Inflation will eat away at real spending power of nominal dollars awarded in 2021 each consecutive year.
S&L Sterilization
Percentage Foregone

Utilities
Public Misc.
Conservation
Public Buildings
Highway
Bridges
Water
Shovel Ready

TEA/SAFETY-LU: 31%
ARRA: 81%
Public Cement Consumption: West

(000) Metric Tons

Pacific

Mountain

Source: PCA
Cement Outlook Summary
West Region Update
Brian Schmidt, Sr. Regional Economist
May 2022