If You Got It, A Truck Brought It
28 minerals are produced commercially from about 660 actively working mines.

Ranked 4th in Nation in total value.

Led Nation in production of S&G, boron, and diatomite.

California produces a greater variety of minerals than any other state.
WHO USES CONSTRUCTION AGGREGATE?

![Pie chart showing the use of construction aggregate by different categories]

- Residential Housing: 34%
- Private Roads: 3%
- Utilities: 4%
- Other Public Buildings: 3%
- Hospitals and Schools: 2%
- Water and Sewer: 5%
- Other Public Facilities: 3%
- Public Highways, Streets, and Transit: 26%
- Other Private Facilities: 2%
- Railroads: 1%
- Commercial Buildings: 17%
- Private Aggregate Use: 57%
- Public Works Aggregate Use: 43%

AGGREGATE USED IN HOME CONSTRUCTION

- Basement Foundation: 39 tons
- Drain around Foundation: 22 tons
- Basement Floor: 25 tons
- Sidewalk: 14 tons
- Driveway: 19 tons
- Garage Floor: 10 tons
- Half the street in front of the house: 100 tons

Total: 229 tons

Source: Langer, Drew, and Sachs; Aggregate and the Environment, AGI
2018 AGGREGATE SUSTAINABILITY MAP

California’s New Gold
# MS 52 UPDATE COMPARISON

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2006</th>
<th>2012</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permitted Aggregate Resources (Reserves)</td>
<td>6.8</td>
<td>4.3</td>
<td>4.1</td>
<td>7.6</td>
</tr>
<tr>
<td>50-Year Demand</td>
<td>12</td>
<td>13.5</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Areas with &lt;25% of Demand</td>
<td>13</td>
<td>11</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Areas with &lt;50% of Demand</td>
<td>19</td>
<td>26</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>Areas with Adequate Reserves</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Resources</td>
<td></td>
<td></td>
<td></td>
<td>74</td>
</tr>
</tbody>
</table>
SPECIAL REPORT 240
WESTERN SAN DIEGO COUNTY P-C REGION
MINERAL RESOURCE ZONES
UPDATED RESOURCE SECTORS - SOUTHERN PART
<table>
<thead>
<tr>
<th>Transport Option</th>
<th>Total Fuel Consumption (gallons)</th>
<th>Total CO₂ Emissions (metric tons)</th>
<th>Total NOₓ Emissions (metric tons)</th>
<th>Total PM Emissions (metric tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local: Truck</td>
<td>296,000</td>
<td>3,000</td>
<td>26.5</td>
<td>1.1</td>
</tr>
<tr>
<td>Import: Truck</td>
<td>1,138,000</td>
<td>11,537</td>
<td>102</td>
<td>4.4</td>
</tr>
<tr>
<td>Import: Rail + Truck</td>
<td>788,000</td>
<td>7,985</td>
<td>120.4</td>
<td>3.3</td>
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<tr>
<td>Import: Barge + Truck</td>
<td>804,000</td>
<td>8,210</td>
<td>147.1</td>
<td>5.1</td>
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<tr>
<td>Import: Ship + Truck</td>
<td>1,406,000</td>
<td>16,703</td>
<td>282.2</td>
<td>16.3</td>
</tr>
</tbody>
</table>
### SUMMARY

<table>
<thead>
<tr>
<th>Aggregate Resources (PCC-grade)</th>
<th>5,982 Million Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate Reserves (PCC-grade)</td>
<td>271 Million Tons</td>
</tr>
<tr>
<td>Projected 50-Year Aggregate Demand</td>
<td>760 Million Tons</td>
</tr>
<tr>
<td>Estimated Depletion Date of Reserves</td>
<td>2035</td>
</tr>
</tbody>
</table>
PER-CAPITA CONSTRUCTION AGGREGATE DEMAND PROJECTION

Basis for Projection

• Historic Construction aggregate production (consumption)

• Historic population

• Population / Production = Average Annual Per-Capita consumption

• Population Projection x Per-Capita rate = Demand Projection
DEMAND PROJECTION INPUT: HISTORIC PRODUCTION

Years 1970 – 1990 Compilation Sources
US Bureau of Mines
Mine Operators
Source Report Files

Years 1990 – 2016 Compilation Sources:
California Division of Mine Reclamation
DEMAND PROJECTION INPUT: PER CAPITA CONSUMPTION
DEMAND PROJECTION AND RESOURCE SUMMARY

![Graph showing production and annual demand over time.](image)

- **Production**
- **Annual Demand (tons)**
IMPACTS OF AGGREGATE TRANSPORT

Societal, Economic, and Environmental costs

• Transport distance is the fundamental controller of these costs.
• Minimizing transport distance is key to minimizing these costs.
• Local sources of aggregate are needed to minimize transport distance.
QUESTIONS?