

# Statistics and links to infrastructure resources

## General infrastructure

From AEM – The U.S. Infrastructure Advantage™  
AEM and equipment manufacturers have put together a set of policy recommendations that can be viewed at  
<https://www.aem.org/advocacy/the-u-s-infrastructure-advantage/>

### From Topcon

Information, articles and videos including Ray O'Connor discussing "Building America's next-generation infrastructure" at the Bloomberg Government NEXT Infrastructure Conference in Washington D.C.  
[Topconpositioning.com/infrastructure](http://topconpositioning.com/infrastructure)

## California specifics

Statewide, 37 percent of California's major roads are in poor condition. 42 percent are in mediocre or fair condition and the remaining 21 percent are in good condition.

### SOURCE: TRIP

Rural Connections: Challenges and Opportunities in America's Heartland  
[http://www.tripnet.org/docs/Rural\\_Roads\\_TRIP\\_Report\\_2017.pdf](http://www.tripnet.org/docs/Rural_Roads_TRIP_Report_2017.pdf)

38 percent of California's rural roads are rated in poor condition, the third highest rate in the nation, and 15 percent are rated in mediocre condition.

### SOURCE: TRIP

Rural Connections: Challenges and Opportunities in America's Heartland  
[http://www.tripnet.org/docs/Rural\\_Roads\\_TRIP\\_Report\\_2017.pdf](http://www.tripnet.org/docs/Rural_Roads_TRIP_Report_2017.pdf)

Driving on deficient roads costs California motorists a total of \$53.6 billion annually in the form of additional vehicle operating costs (VOC), congestion-related delays and traffic crashes. That's \$844 per motorist per year.

### SOURCE: TRIP

Rural Connections: Challenges and Opportunities in America's Heartland  
[http://www.tripnet.org/docs/Rural\\_Roads\\_TRIP\\_Report\\_2017.pdf](http://www.tripnet.org/docs/Rural_Roads_TRIP_Report_2017.pdf)

25 percent of California bridges show significant deterioration or do not meet current design standards and 17 percent are functionally obsolete.

### SOURCE: TRIP

Rural Connections: Challenges and Opportunities in America's Heartland  
[http://www.tripnet.org/docs/Rural\\_Roads\\_TRIP\\_Report\\_2017.pdf](http://www.tripnet.org/docs/Rural_Roads_TRIP_Report_2017.pdf)

California has 678 high hazard dams. High hazard potential means that failure would result in loss of human life.

### SOURCE: ASCE

2017 Infrastructure Report Card  
<https://www.infrastructurereportcard.org/state-item/california/>

California has reported \$39 billion in drinking water infrastructure needs over the next 20 years.

### SOURCE: ASCE

2017 Infrastructure Report Card  
<https://www.infrastructurereportcard.org/state-item/california/>

6,953 (27.9 percent) of the 24,955 bridges in California are structurally deficient or functionally obsolete.

### SOURCE: US Department of Transportation

<https://www.transportation.gov/policy-initiatives/grow-america/road-and-bridge-data-state>

Highway spending as percentage of total spending is 3.2 percent, that's the second lowest of all 50 states.

### SOURCE: USA Today

States with the riskiest roads, bridges, and dams  
<https://www.usatoday.com/story/money/economy/2017/10/26/infrastructure-failure-states-falling-apart/797300001/>

Governor Jerry Brown estimates California is facing \$187 billion in unmet infrastructure needs.

### SOURCE: Forbes

The Top Four Reasons California is Unsustainable  
<https://www.forbes.com/sites/thomasdelbeccaro/2018/04/19/the-top-four-reasons-california-is-unsustainable/2/#4857e31755ce>

## Industry specifics

Contractors that invest more in IT have grown by 50 percent.

### SOURCE: AGC of America – 2017 Survey

There has been a 20 percent increase in the use of online project collaboration tools in the last year.

### SOURCE: AGC of America – 2017 Survey

The use of BIM technology has grown by 10 percent in the last year alone.

### SOURCE: AGC of America – 2017 Survey

The machine control system market is expected to grow 13.9 percent between 2016 and 2022.

**SOURCE: Research and Markets** "Machine Control System Market – Global Forecast to 2022"

85 percent of contractors use or plan to use cloud-based software.

### SOURCE: AGC of America – 2017 Survey

## Industry Terminology

### 3D machine control

Positioning control using GNSS or local positioning systems to calculate 3D positioning of the blade, bucket, etc.

### BIM

Building Information Modeling – modeling technology that can be used to generate cost estimates, energy projections, design comparisons and other simulations.

### GNSS

Global Navigation Satellite System – general term that covers all satellite systems (GPS, GLONASS, BeiDou, etc.).

### IoT

The “Internet of Things” (IoT) facilitates the evolution of products into smart, connected solutions. Through connectivity, the continuous stream of collected data is processed to optimize the operational workflow to improve overall productivity.

### Mass data

Growing data volumes from a variety of scanning and surveying technologies offer advantages that enable comprehensive monitoring of conditions, operations and environments. With that comes challenges for data processing and analysis.

### Smart Cities

Through the use of technology and intelligent design, Smart Cities create sustainable infrastructure that is more efficient, more technologically advanced, greener, and offers a higher quality of living than conventional methods.

### Vertical Construction

Design and construction of buildings

### Horizontal construction

Construction of roads, airfields, bridges, etc.

## Topcon information

### About Topcon Positioning Group

Topcon Positioning Group is headquartered in Livermore, California, U.S. ([topconpositioning.com](http://topconpositioning.com)). Its European head office is in Capelle a/d IJssel, the Netherlands. Topcon Positioning Group designs, manufactures and distributes precision measurement and workflow solutions for the global construction, geospatial and agriculture markets. Its brands include Topcon, Sokkia, Tierra, Digi-Star, RDS Technology, and NORAC. Topcon Corporation ([topcon.com](http://topcon.com)), founded in 1932, is traded on the Tokyo Stock Exchange (7732).

### About The Intersection of Infrastructure and Technology

The Intersection of Infrastructure and Technology: The crossroads where construction, surveying and engineering professionals find advantages and know-how to be at the forefront of technological innovation — to increase productivity and profitability — for growing infrastructure needs. Industry professionals are continually challenged to cut costs and produce results more quickly. Topcon invites them to meet us at this unique point — this “intersection” — where infrastructure opportunities and technology come together to meet the demands of today and tomorrow.



## Featured demonstration areas

### Unmanned aerial systems (drones)

See a live demonstration detailing how drone technology is used in construction site mapping as well as inspection and monitoring applications.

### 3D machine control

Heavy construction equipment such as dozers, excavators and graders are faster and more efficient with 3D machine control automation. See live demonstrations.

### Intelligent paving

See how advances in scanning technology and machine control vastly improve productivity in road paving with a hands-on look at the latest innovations.

