



Changes on the Horizon for Multifamily Housing Post-COVID-19

The Impact of COVID – 19 on the industry.
Technologies helping our job sites today: Intuitive software and hardware
solutions making an impact where you work

- 1. Overview of the construction industry and multifamily housing market – key macro data points**
- 2. Current conditions affecting the multifamily housing market – perspectives from a panel of multifamily housing owners, operators and contractors**
- 3. Thoughts from the panel on the next 12 to 18 months with regards to multifamily housing design, development, construction and occupancy**
- 4. Technologies helping our job sites today: Intuitive software and hardware solutions making an impact where you work**



The Participants



Hosts

Doug Bibby – President and CEO of NMHC

Mike Bellaman – President and CEO of ABC

The Panel

Jared Ford, President of Construction & Partner, The Dinerstein Companies

Ryan Folger, Executive Vice President of Design & Construction, Continental Properties

Ripley Bickerstaff – VP Business, Development Hoar Construction

Clint Costley – President KIER, Construction

The Innovation and Technology Experts

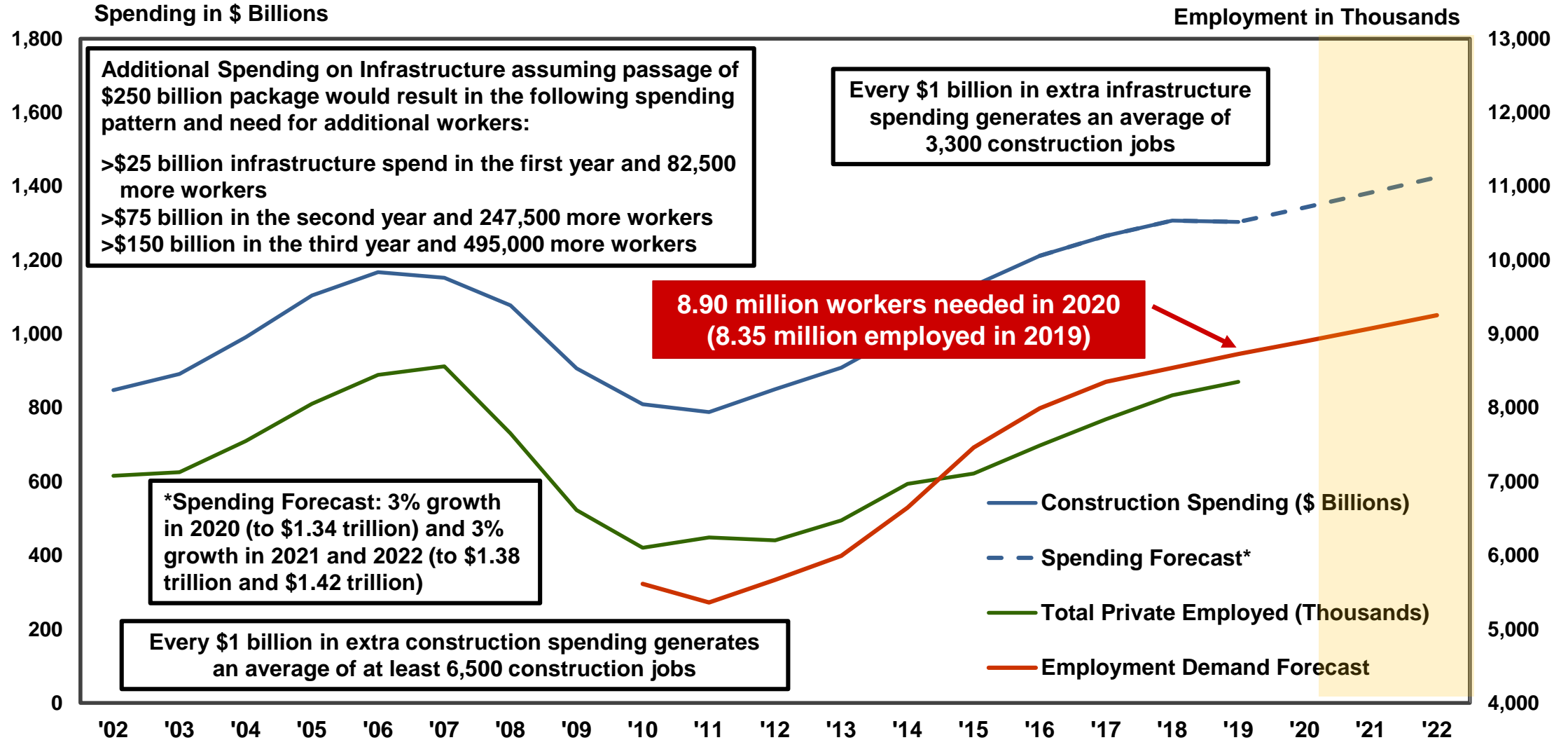
Matt Abeles – VP Construction Technology and Innovation ABC

Paula Cino – VP Construction, Development and Land Use Policy NMHC



Overview of the construction industry and multifamily housing market – key macro data points

It was all going so well... and then!

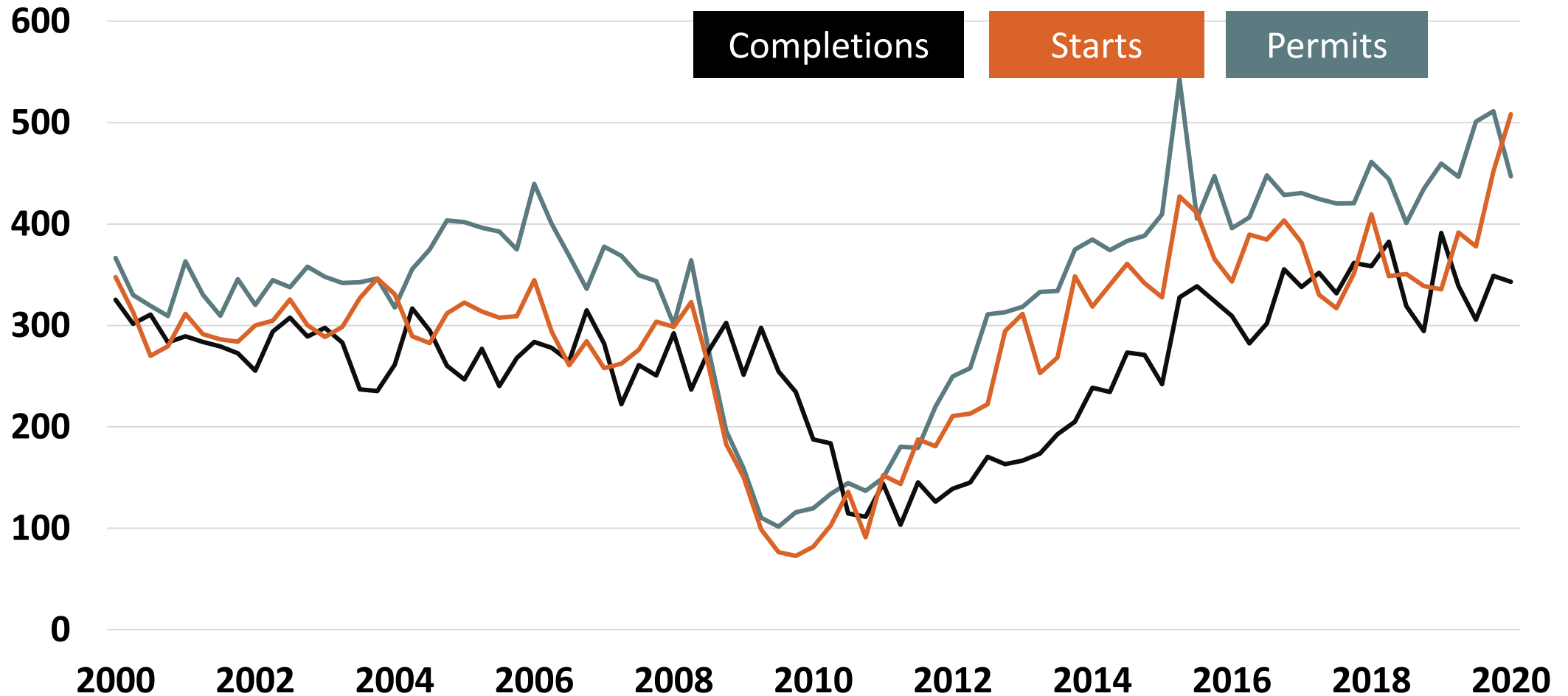


Source: History – U.S. Census Bureau and Bureau of Labor Statistics (BLS);
 Employment Demand and Forecast – Markstein Advisors

(Excludes Self-employed Workers)

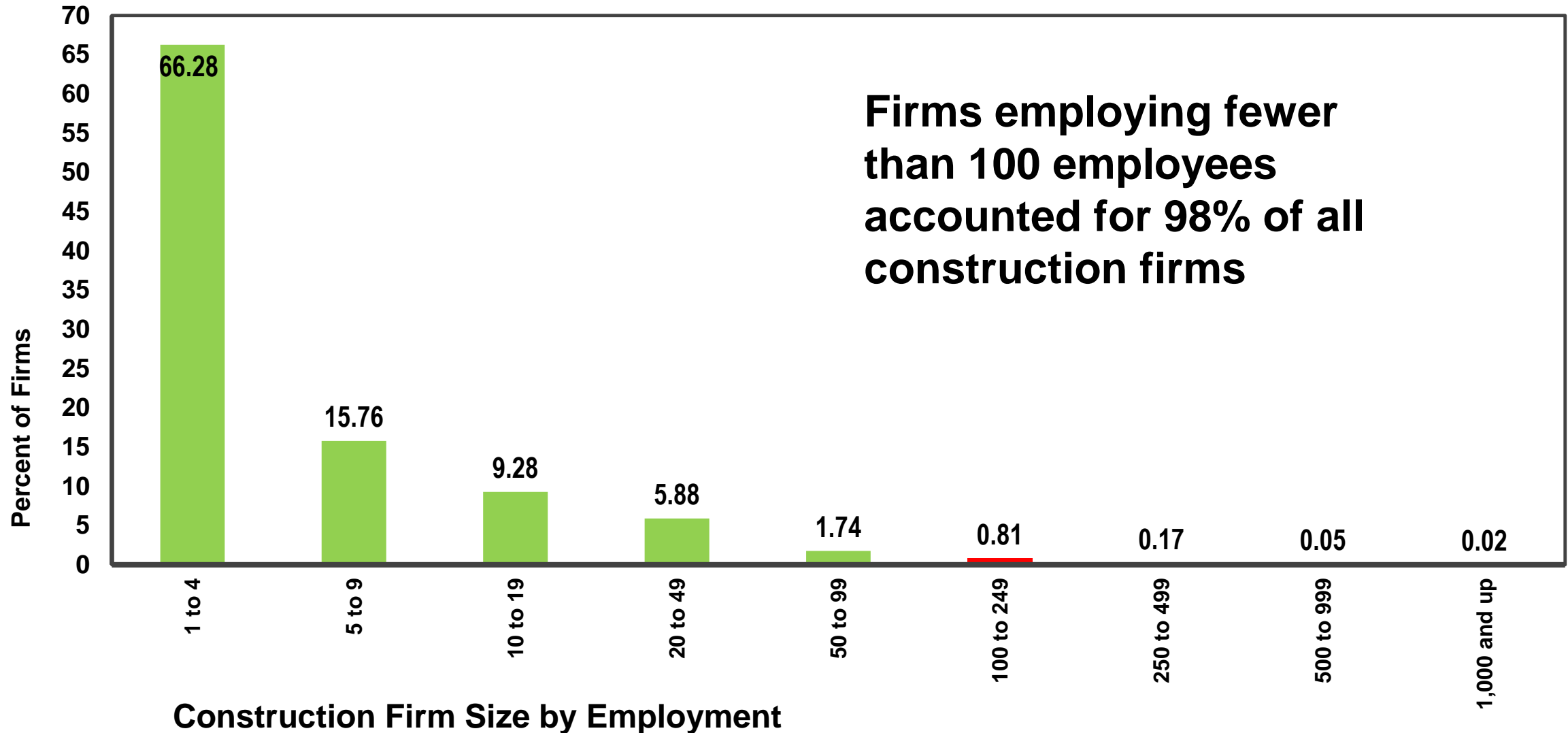


Strong Industry Performance Pre-COVID

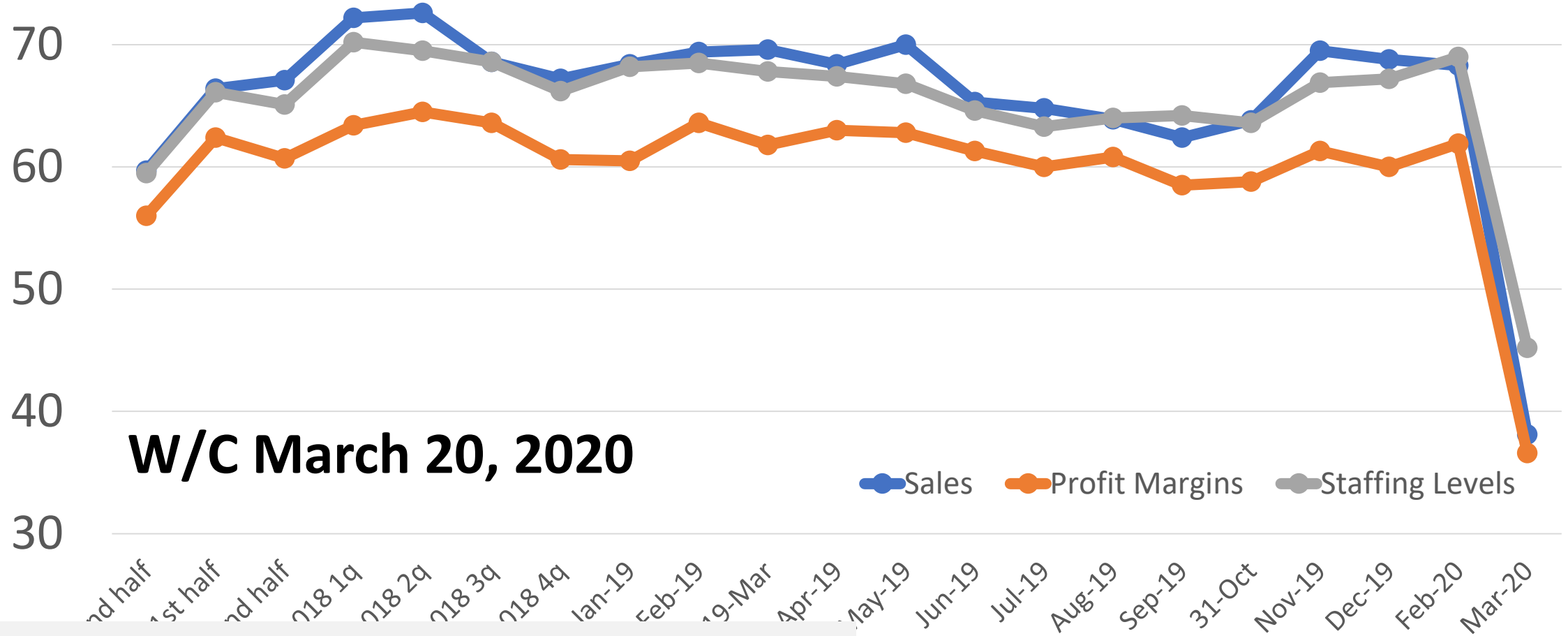


Source: U.S. Census Bureau, New Residential Construction.

Construction Company Size



ABC Construction Confidence Index



Notes:

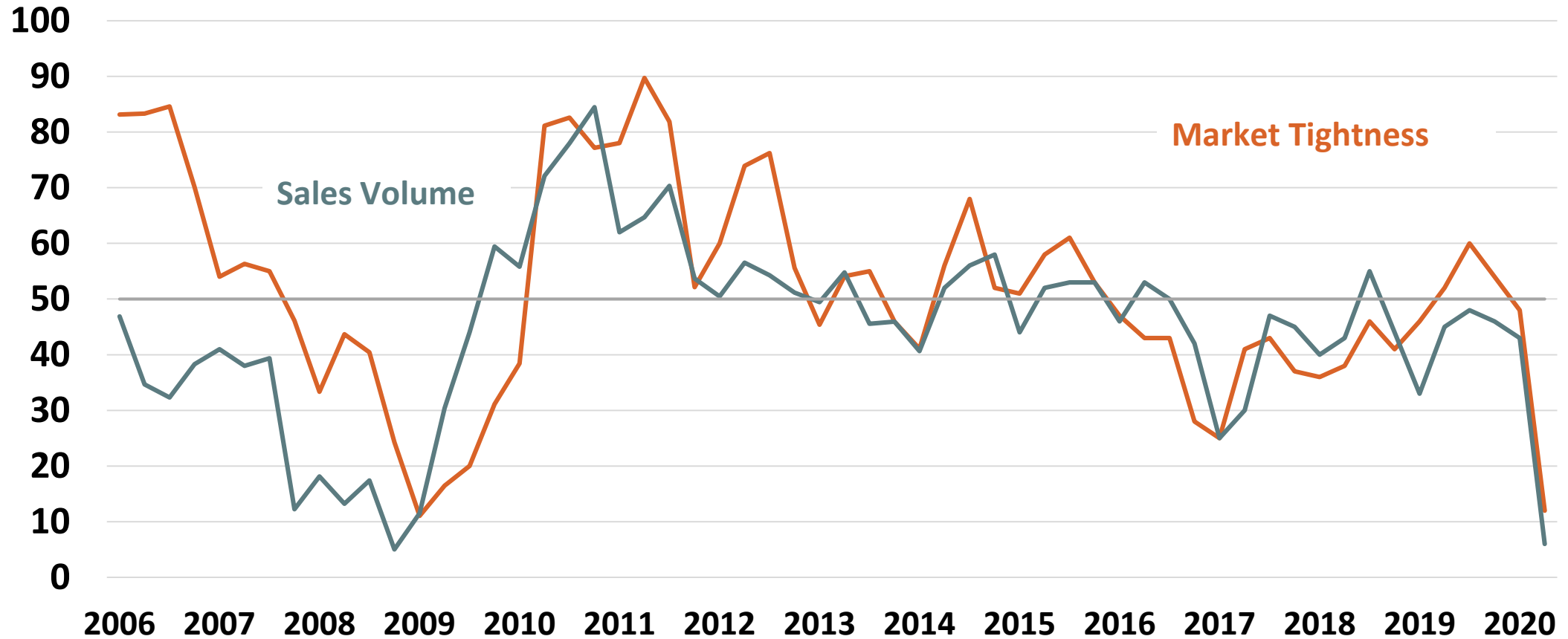
Index greater than 50 is deemed confidence in growth over the next 6 months

Sales – How confident are you in your sales increasing over the next 6 months?

Profit Margins – How confident are you in your profit margins increasing over the next 6 months?

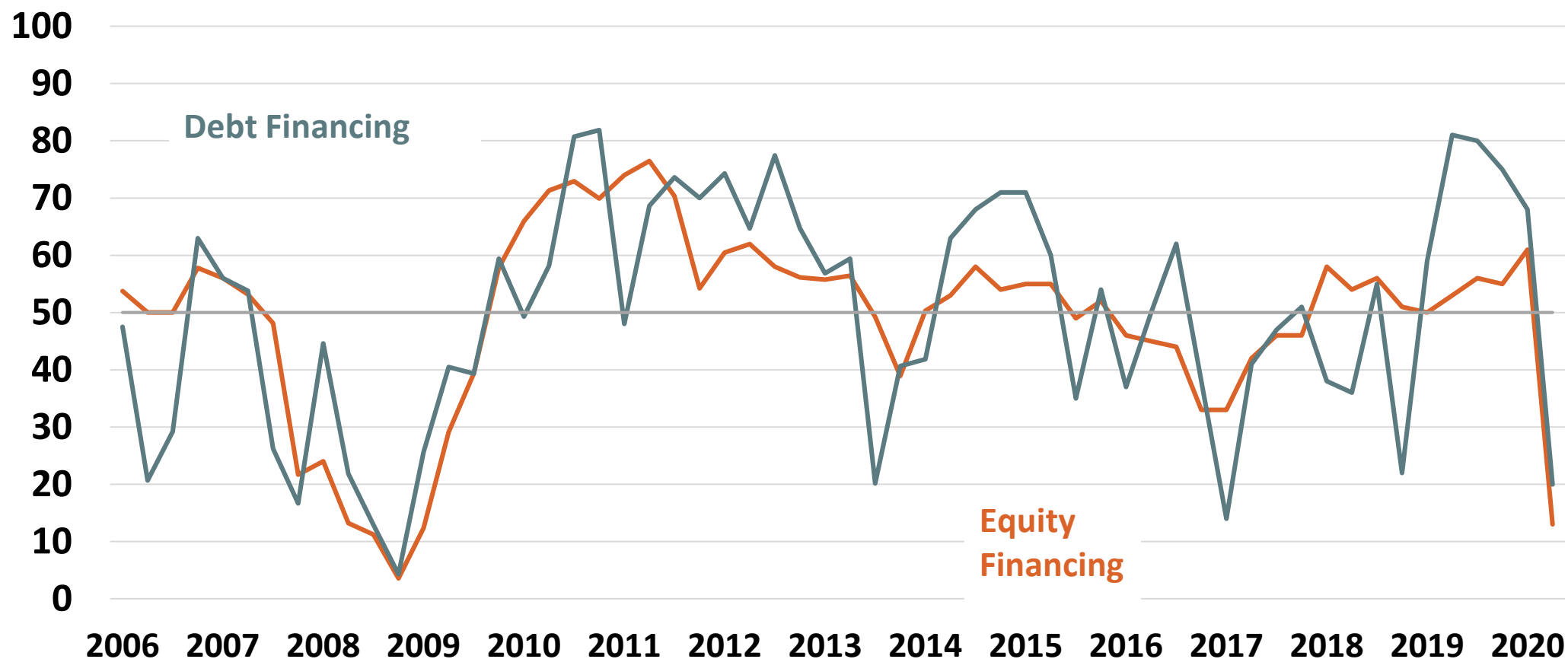
Staffing Levels – How confident are you in your staffing levels increasing over the next 6 months?

Loosening Market Conditions and Lower Sales Volume



Source: NMHC Quarterly Survey of Apartment Market Conditions

Worsening Conditions for Debt and Equity Financing



Source: NMHC Quarterly Survey of Apartment Market Conditions

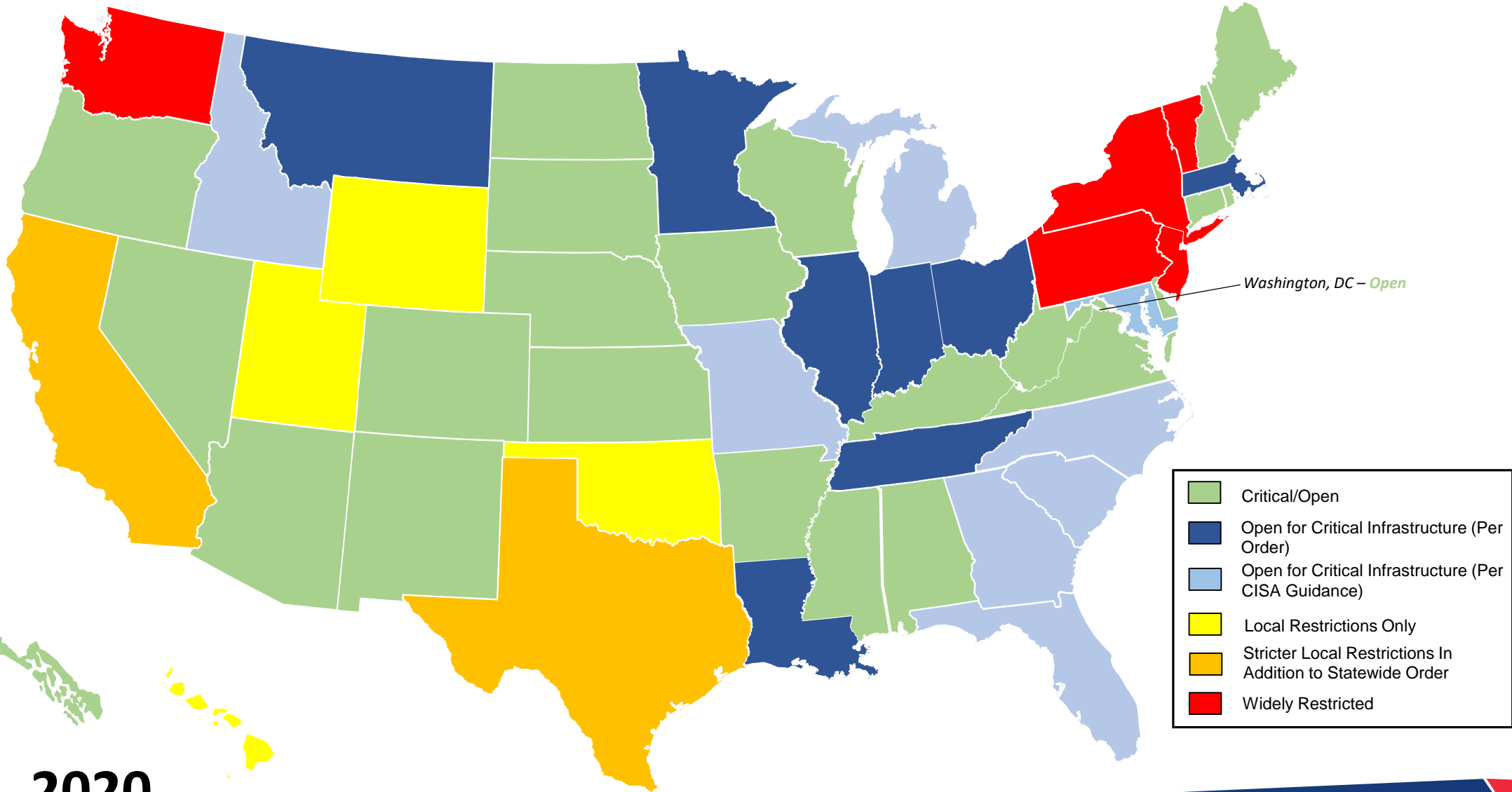


COVID-19 ESSENTIAL BUSINESS POLICIES IMPACTING CONSTRUCTION INDUSTRY



Updated 4.13.20

For details on specific orders, refer to [this document](#). For a full collection of resources regarding the impact of the virus on the construction industry, visit www.abc.org/coronavirus



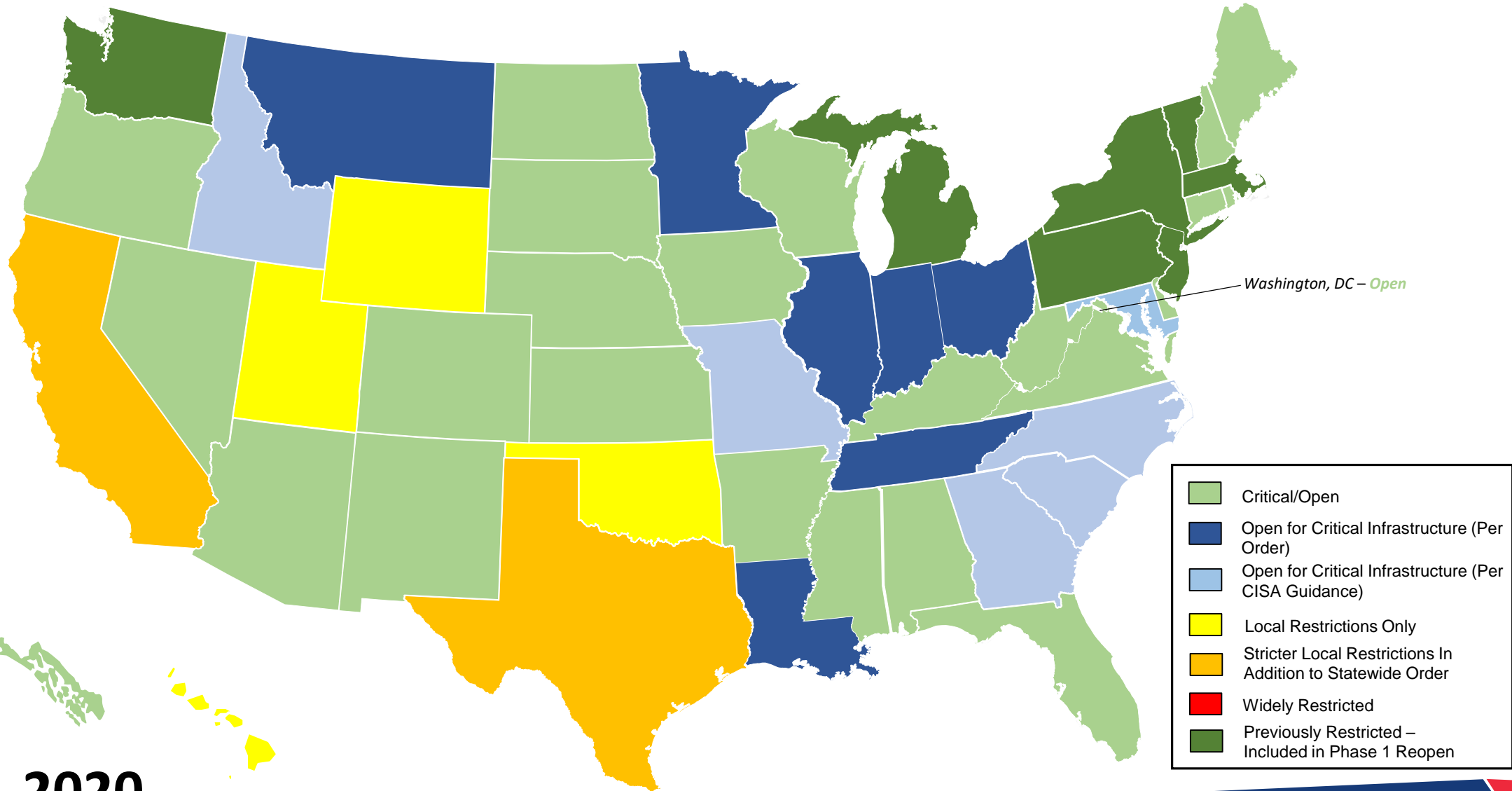
April 13, 2020



COVID-19 ESSENTIAL BUSINESS POLICIES IMPACTING CONSTRUCTION INDUSTRY

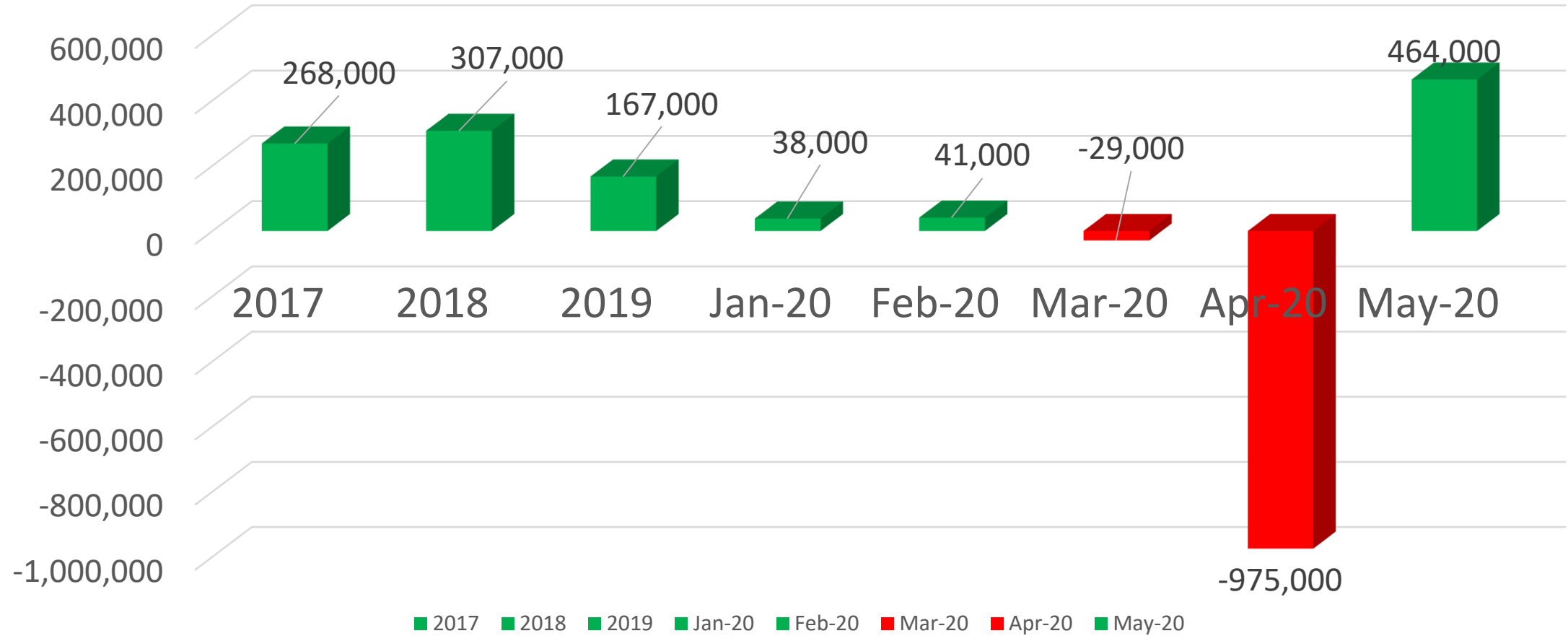


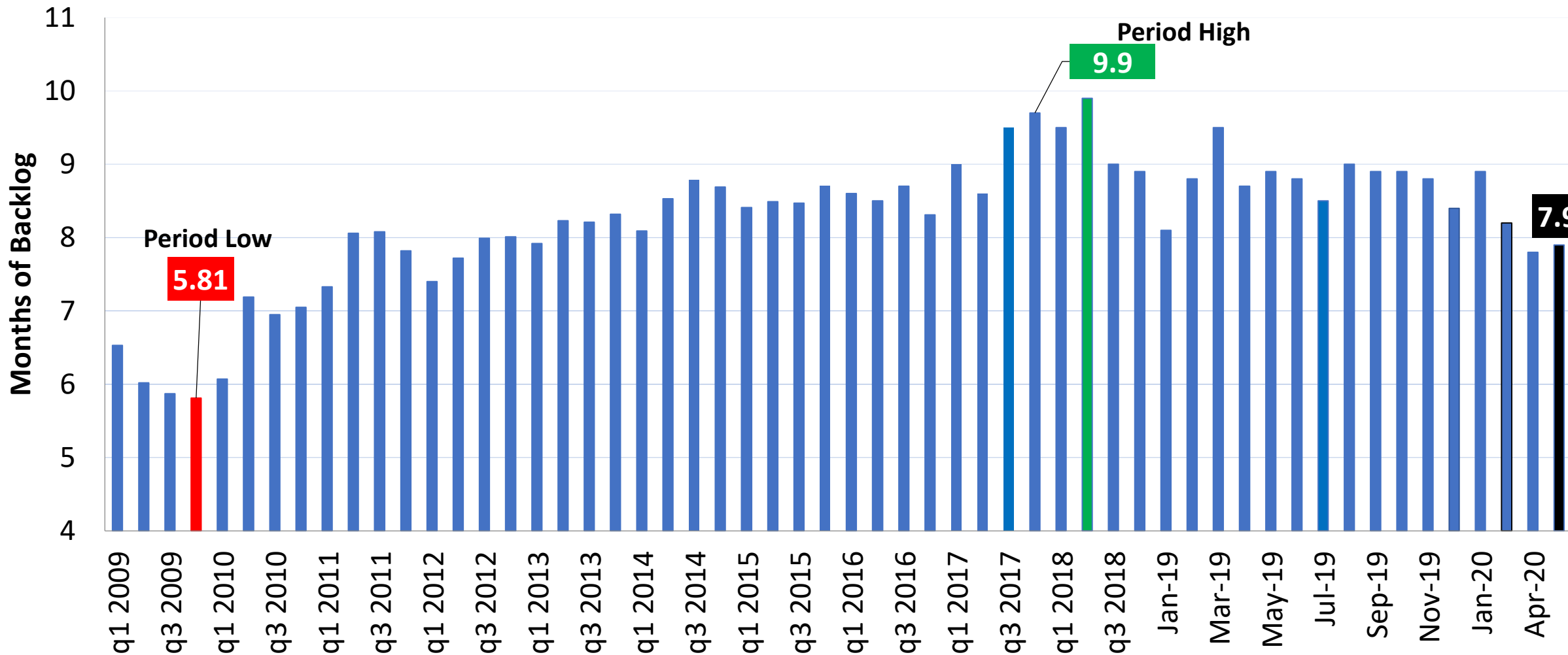
Updated 5.26.20
For details on specific
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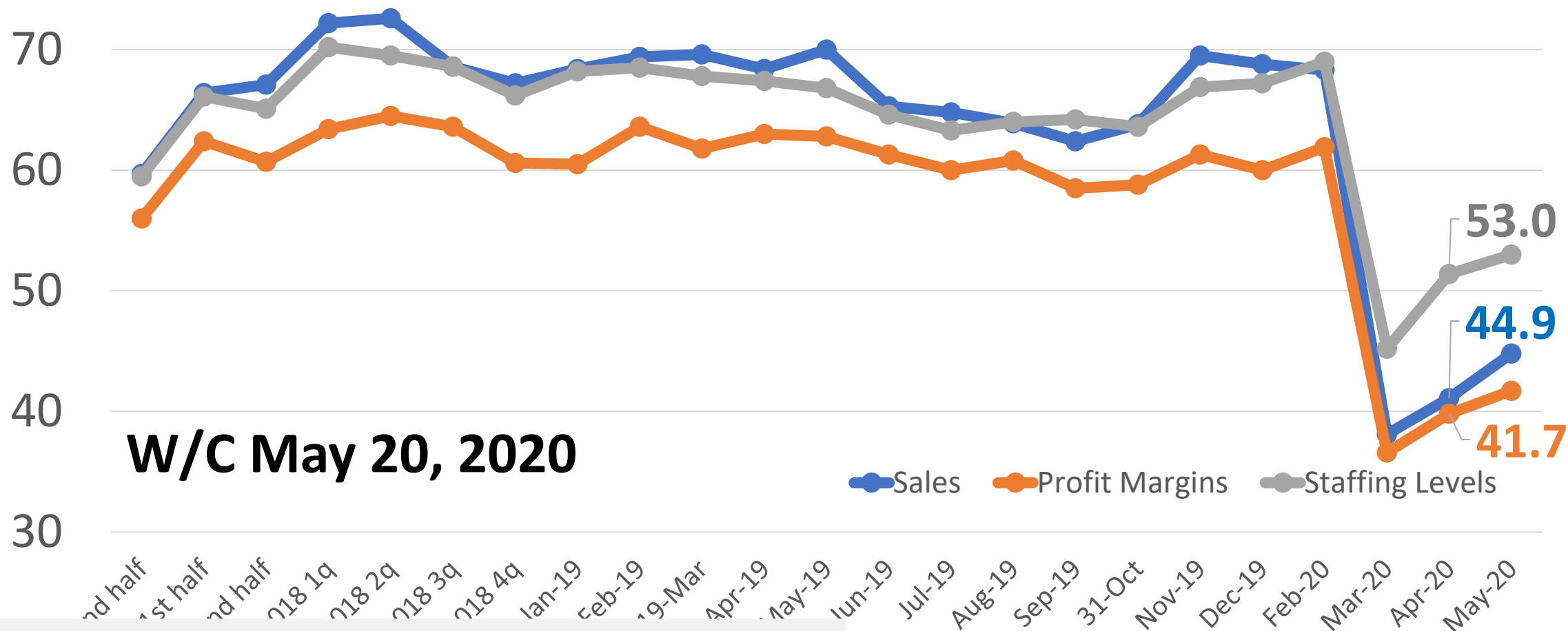
May 26, 2020

Number of Net Jobs Added in the Construction Industry Since Jan 2017





ABC Construction Confidence Index



Notes:

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Profit Margins – How confident are you in your profit margins increasing over the next 6 months?

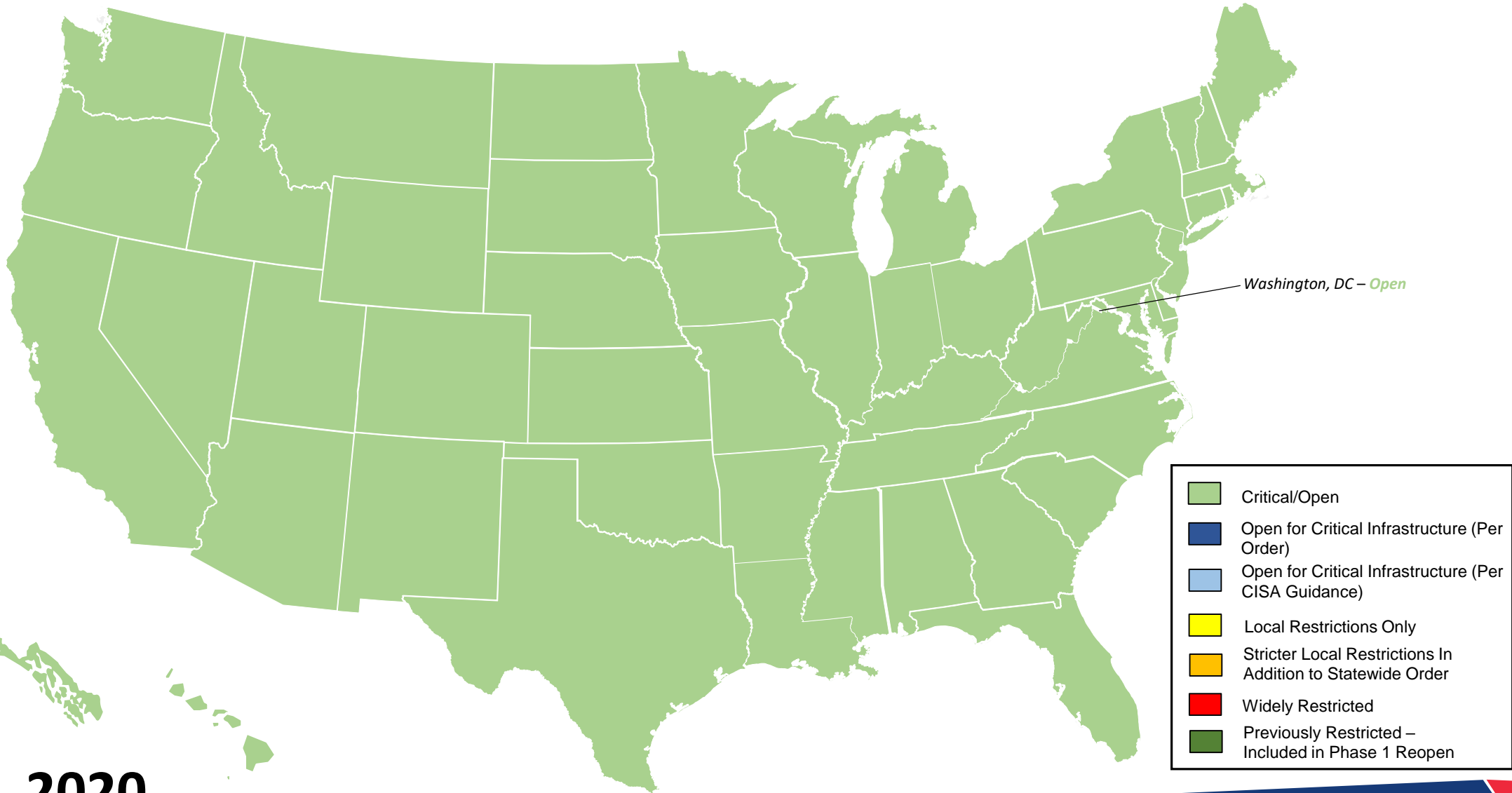
Staffing Levels – How confident are you in your staffing levels increasing over the next 6 months?



COVID-19 ESSENTIAL BUSINESS POLICIES IMPACTING CONSTRUCTION INDUSTRY



Updated 6.16.20
For details on specific orders, refer to [this document](#). For a full collection of resources regarding the impact of the virus on the construction industry, visit www.abc.org/coronavirus



June 16, 2020



The Panel



Jared Ford, President of Construction & Partner, The Dinerstein Companies

Ryan Folger, Executive Vice President of Design & Construction, Continental Properties

Ripley Bickerstaff, VP Business Development, Hoar Construction

Clint Costley, President, KIER Construction



Introductions



- **Name, position and company**
- **Company description, size, geography, services, portfolio**

Jared Ford

President of Construction & Partner, The Dinerstein Companies

- Headquartered in Houston, TX
- Owner / Developer having Developed or Acquired over 65,000 Multifamily Units
- Manager with \$2.8 Billion in Apartment Assets Under Management
- Primary Footprint in Southeast/Southwest
- Leading “Green” developer with \$3.07 Billion in LEED projects



Ryan Folger

Executive Vice President of Design & Construction, Continental Properties

- Headquartered in Menomonee Falls, WI
- Owner / Manager / Developer in 19 States
- 31 Projects In Construction / Development



Ripley Bickerstaff

VP Business Development, Hoar Construction

- Headquarters in Birmingham, AL
- Offices in Nashville, Houston, Austin, Orlando, Atlanta, & Washington DC
- \$1.5 B in residential projects under contract
- +8,000 residential units constructed since 2015
- 25 residential projects completed in the past 5 years



Clint Costley

President, KIER Construction

- Founded in 1986 by Steve and Scott Kier
- Headquartered in Ogden, Utah
- Constructed over 20,000 Multifamily Units, averages 1,200 units annually
- Licensed in 9 States, with our primary focus on the Intermountain West
- Our Purpose: Enhancing communities and improving the quality of life – one project at a time.





Let's bring in the panel - Current conditions affecting the multifamily housing market – perspectives from the panel of multifamily housing owners, operators and contractors



Let's bring in the panel - Thoughts on the next 12 to 18 months with regards to multifamily housing design, development, construction and occupancy



The Innovation and Technology Experts



**Matt Abeles – VP Construction Technology and Innovation
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Technologies helping our job sites today: Intuitive software and hardware solutions making an impact where you work

AGENDA

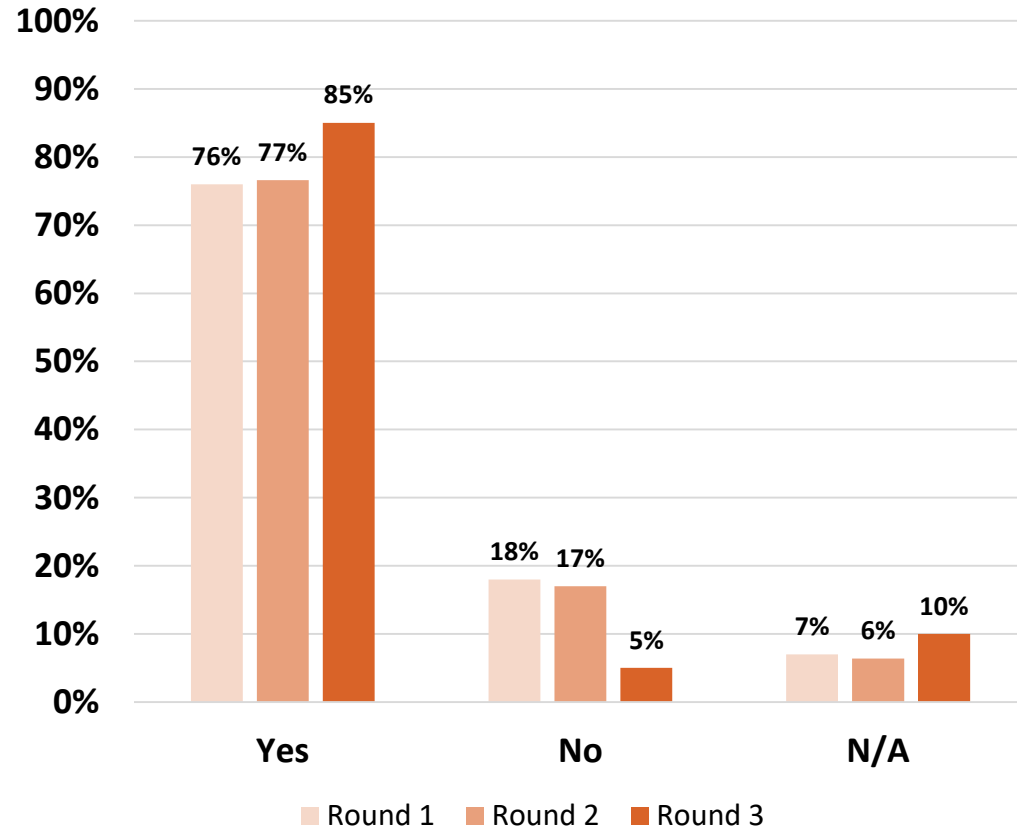
- Apartment Construction Conditions and Challenges
- Technology Solutions
 - COVID-19
 - Safety Technologies
 - Collaboration/Site Monitoring Technology Solutions
 - Virtual Reality/Robotics
 - Materials Management
- Legislative and Regulatory Barriers



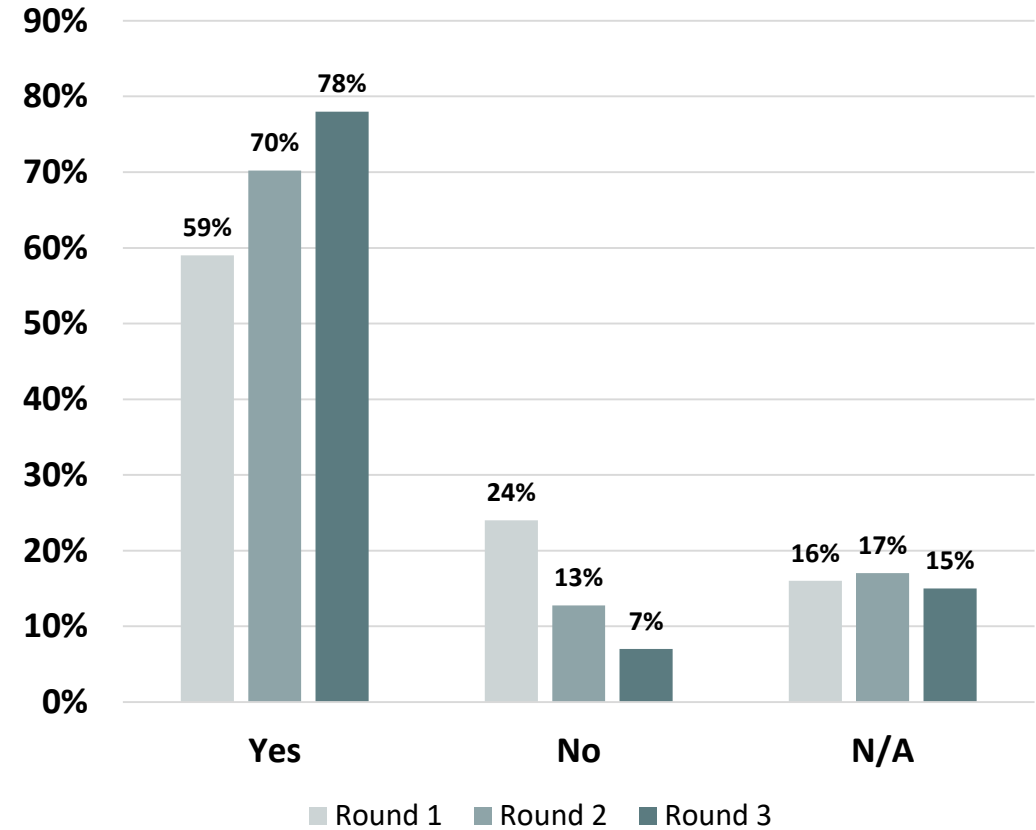
NMHC Construction Survey- Widespread Delays



Delays in Permitting

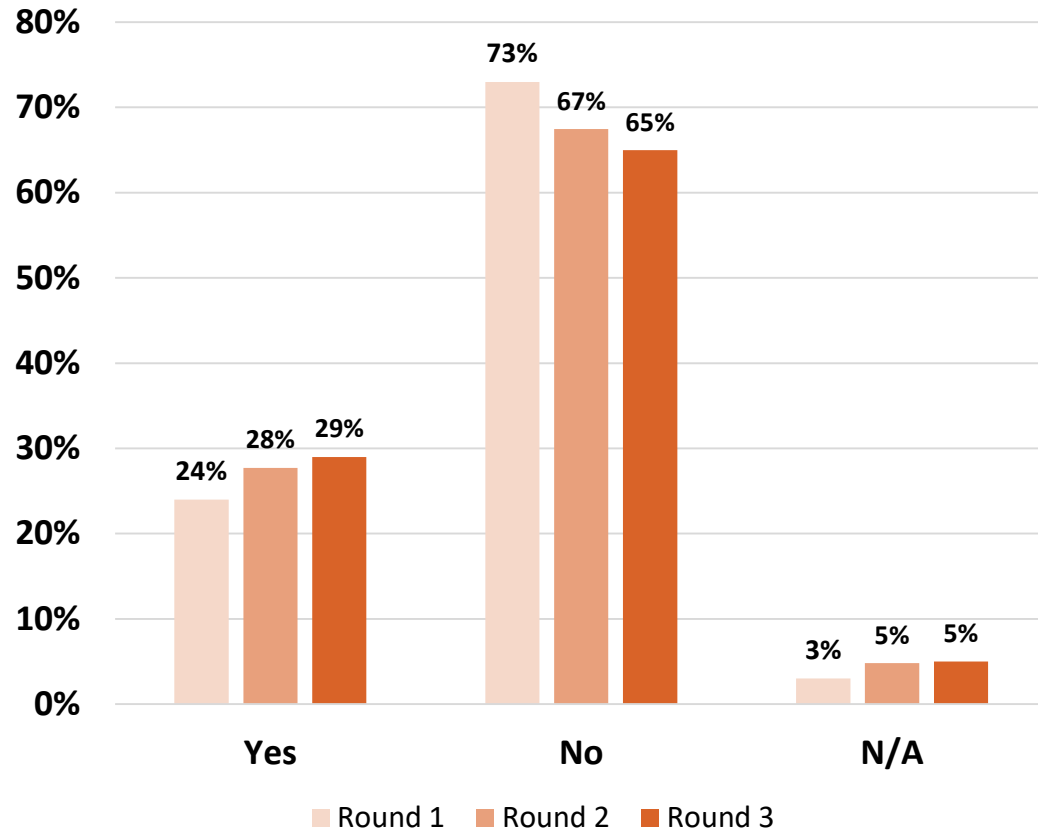


Delays in Starts

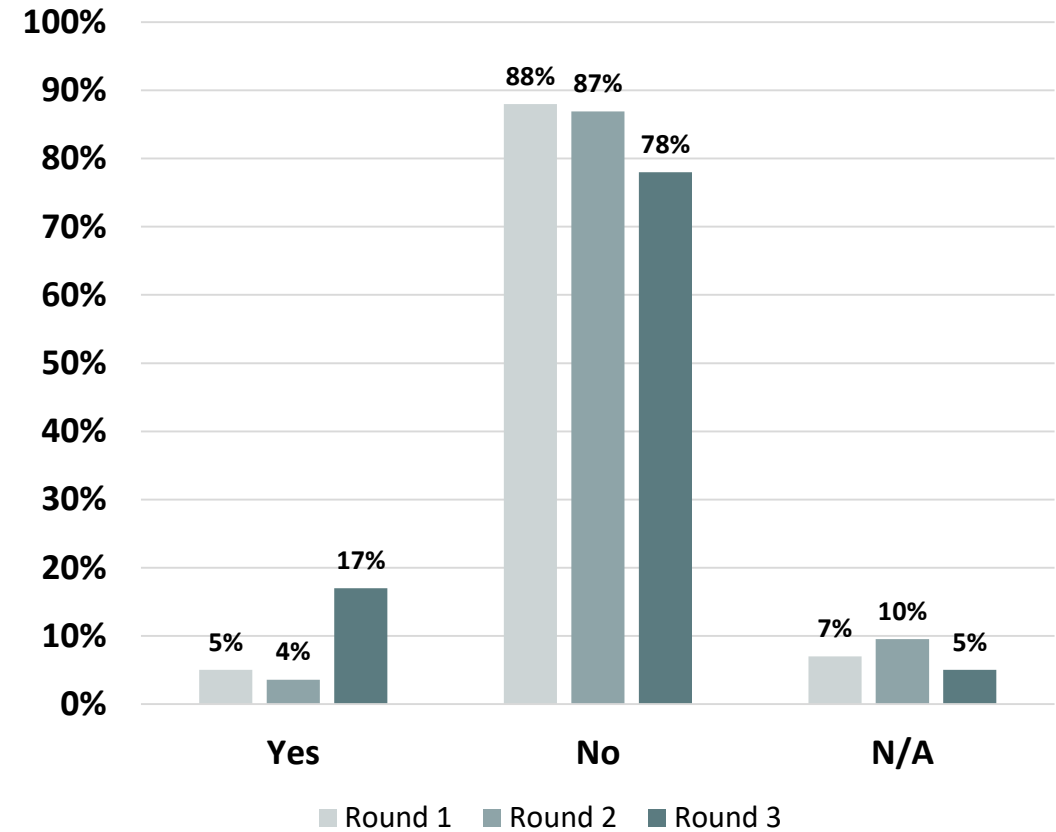


Materials Impacts:

Lack of Materials

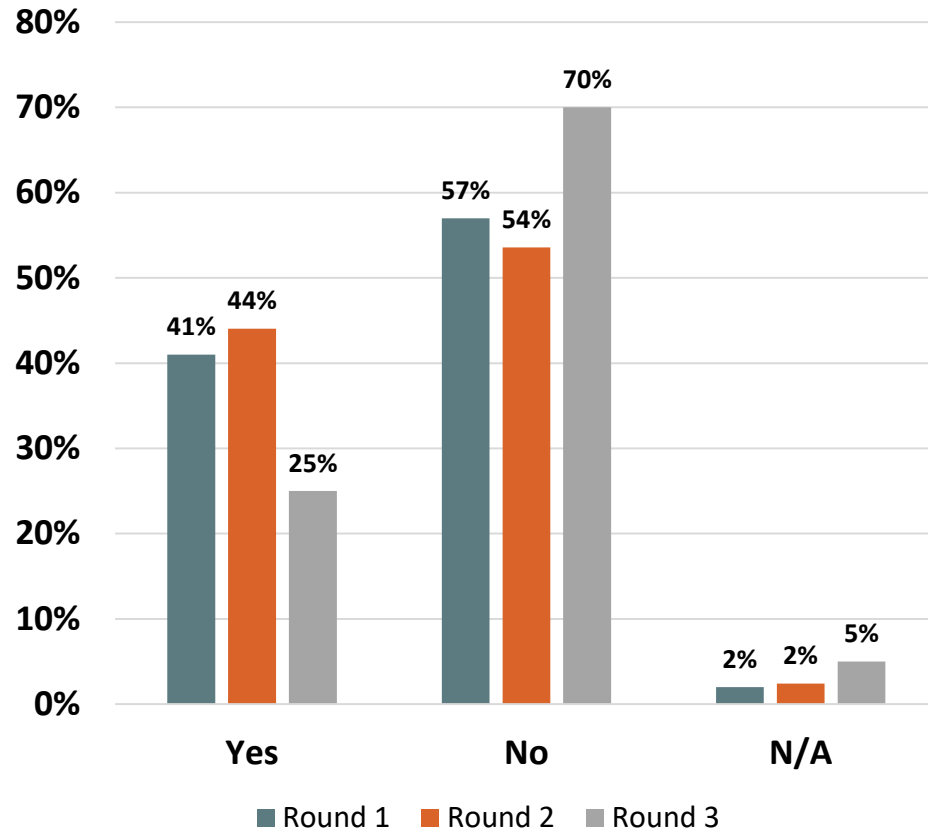


Price Increases in Materials

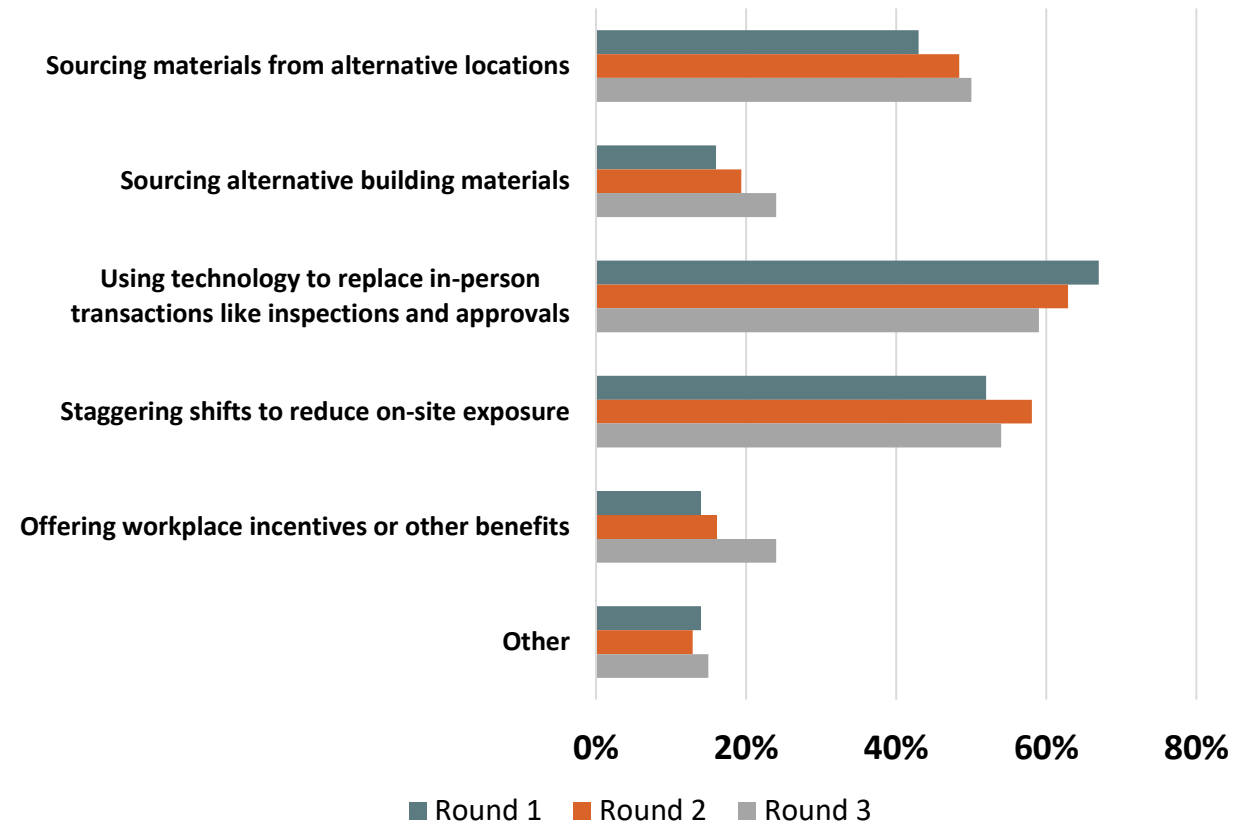


Labor Impacts and Industry Response:

Labor Constraints



Strategies Being Implemented





Covid-19 Technology Solutions



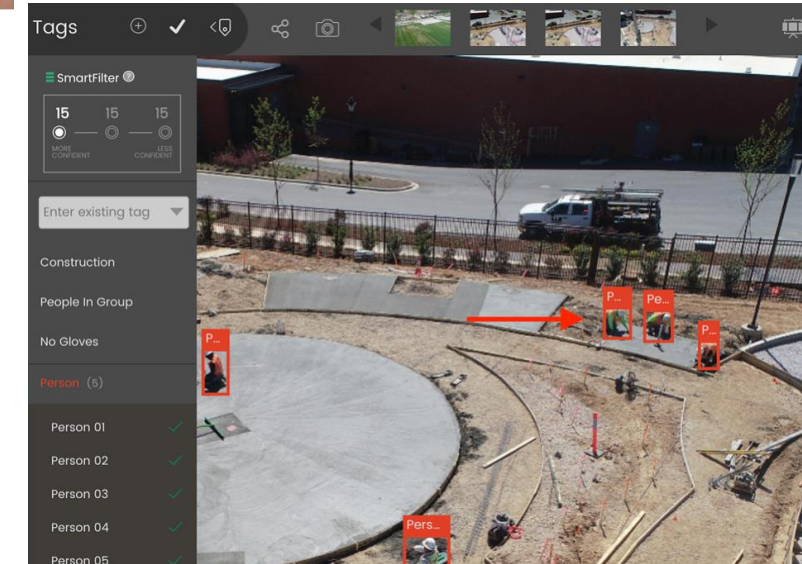
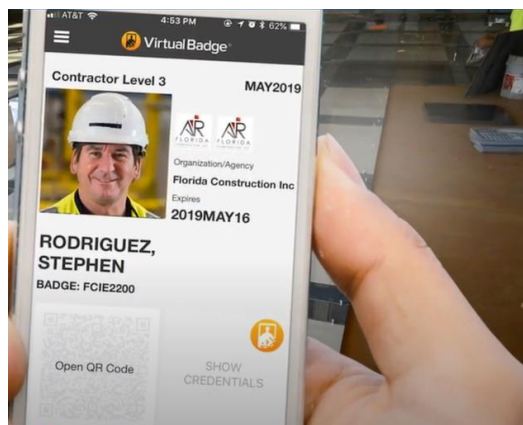


COVID-19 TECHNOLOGY SOLUTIONS



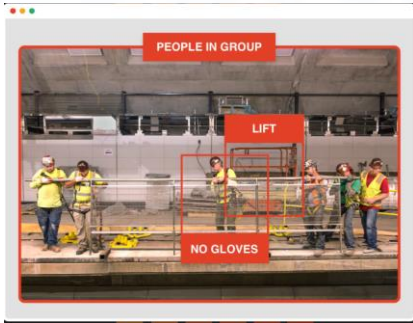
- **What are some of the Covid-19 Technology Solutions Helping?**
- Tracking everyone who enters and exits a jobsite
- Ensuring the health of employees on jobsites
- Documentation of health, people, social distancing, and overall jobsite conditions
- Ensuring Social Distancing
- Monitor proper PPE gear being worn on the job site

Tracking your workforce, Social Distancing data, Artificial Intelligence to monitor social distancing, Employee health testing, Covid-19 documentation apps, Hardware to monitor social distancing

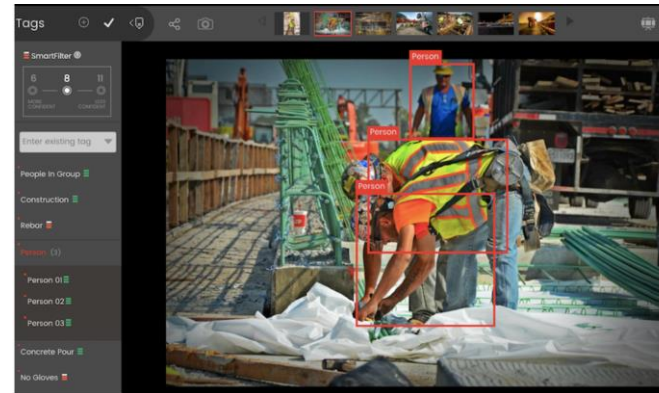


Recommended Solutions

SMARTVID.IO



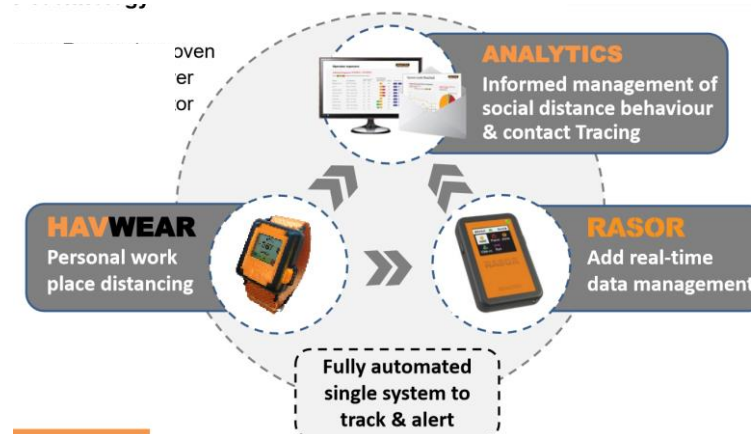
Track PPE Gear worn



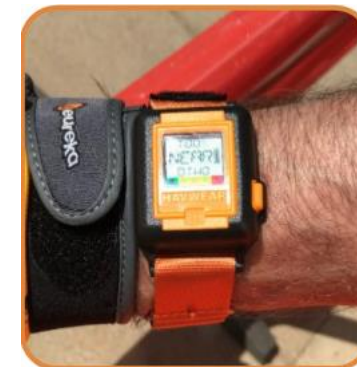
Ensure Social Distancing with AI



Covid-19/Safety analytics



Hardware + Data on Social Distancing



Watch with vibration notifications



Safety Technologies



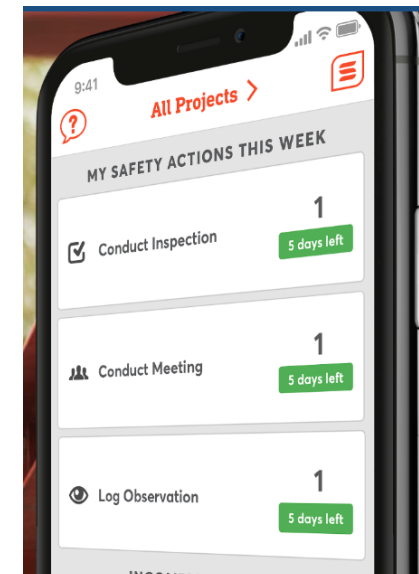
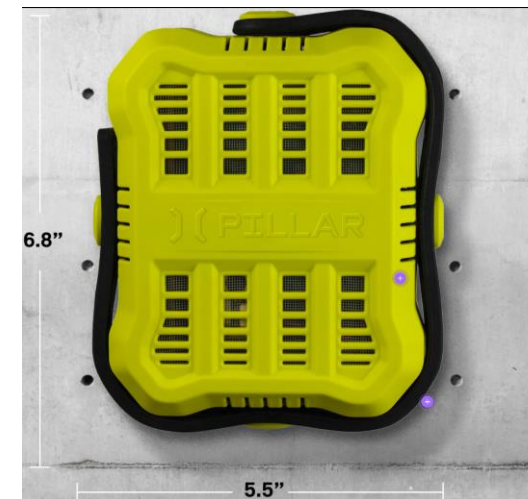
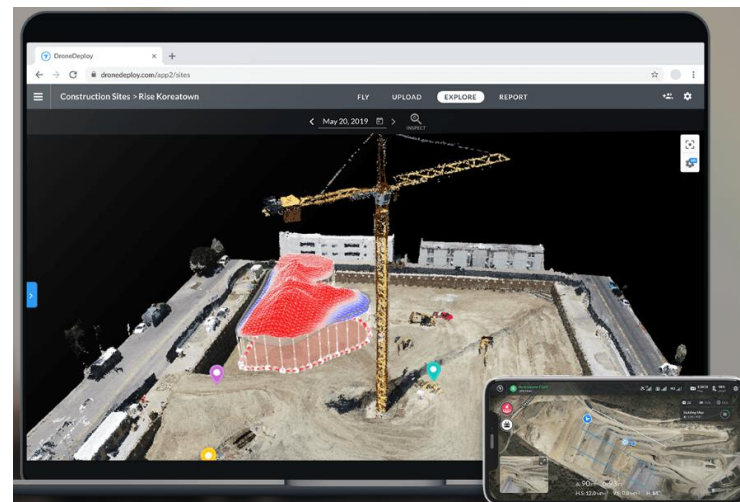
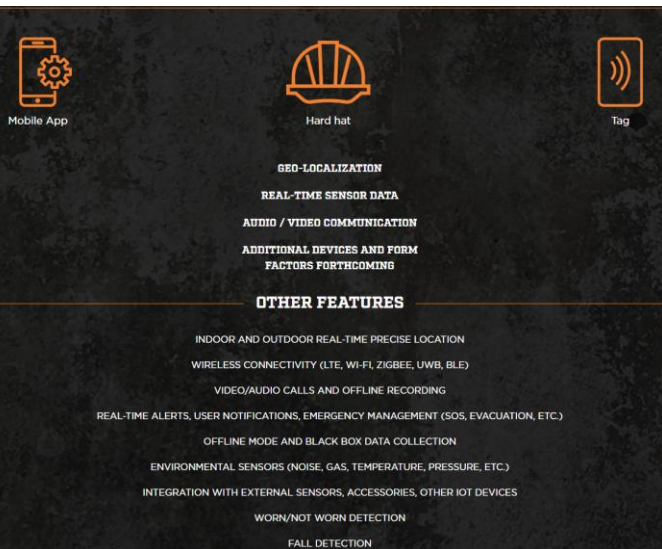
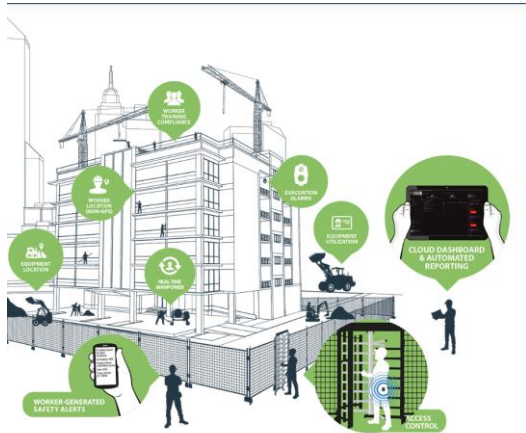


SAFETY TECHNOLOGY SOLUTIONS



- **What are some of the Safety Technology Solutions You Should Embrace?**
- IOT devices to inform of safety occurrences
- Wearable solutions that improve safety awareness
- Safety Documentation
- Tools to prevent injuries
- Site Sensors
- Drones

IOT (Internet of Things), Wearables, Safety Documentation, Tools, Site Sensors, Drones



Safety Technologies

IOT (Internet of Things)

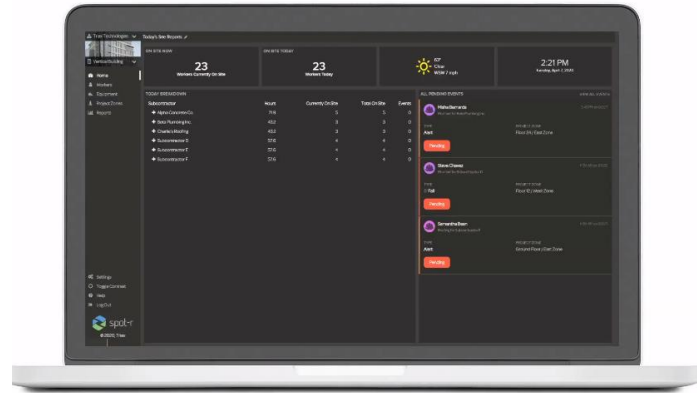


Triax Technologies

Recommended Solutions



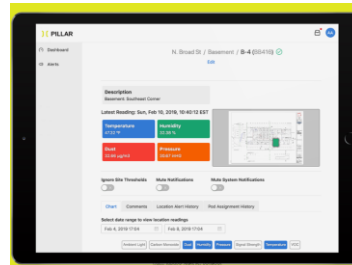
IOT Device to track worker safety



Safety Analytics



Track tool utilization



Hardware + Data on Site Conditions



Instant notifications on safety and site issues



Collaboration/Site Monitoring Tech





COLLABORATION/SITE MONITORING



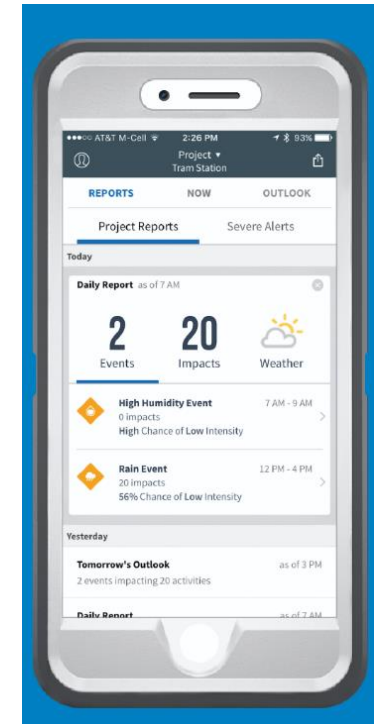
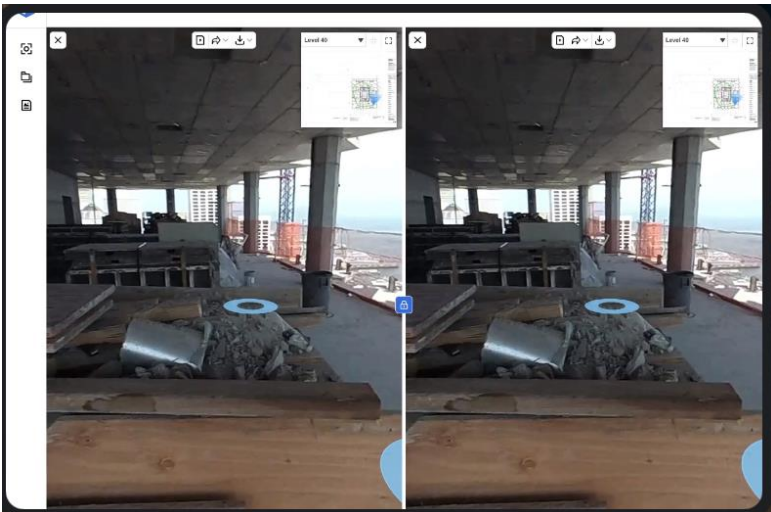
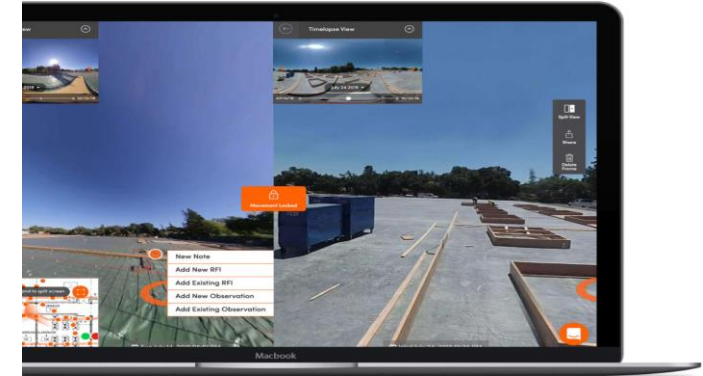
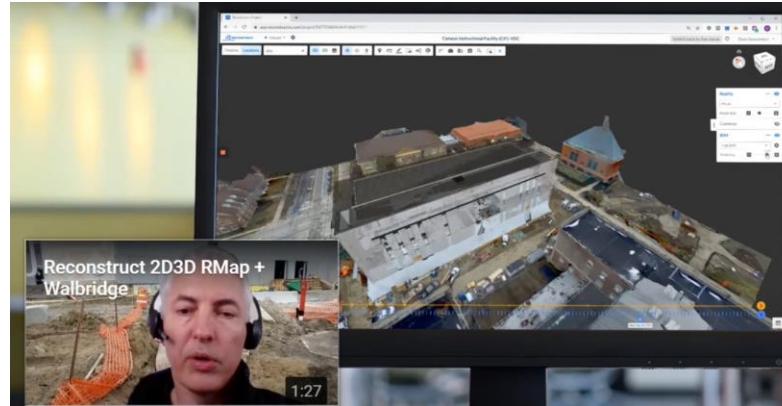
- **What are some of the Collaboration and Site Monitoring Solutions?**
- Photo Documentation
- Digitize your job site
- Video walk throughs on job site
- Site Condition Monitoring
- Mobile Progress Reporting
- Communications



Collaboration/Site Monitoring



Communication, Visual Command Center, site monitoring, site progress, reality capture



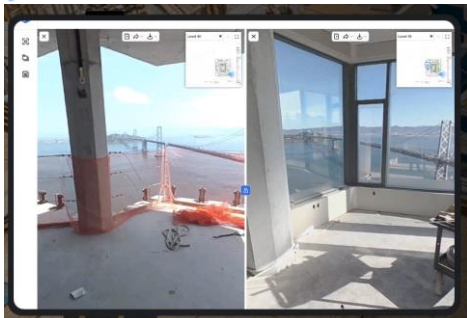
Recommended Solutions



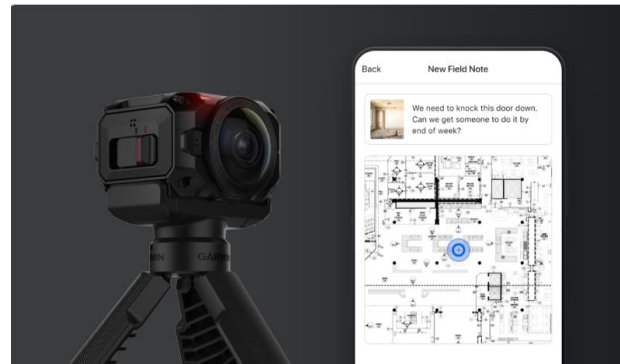
Collaboration from tablets/mobile



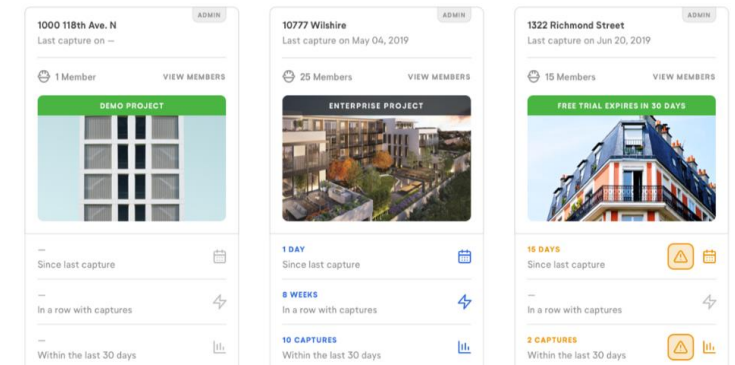
Off-site Collaboration



Site progress/comparison



360-degree photos and documentation



Portfolio Management

Virtual Reality + Robotics

Brick Laying Robots, Virtual Reality Renderings, Collaboration in real time without the travel, and the ability to lift large materials and objects with machines



Robotics

Brick Laying and Material Handling Robots



Construction Robotics

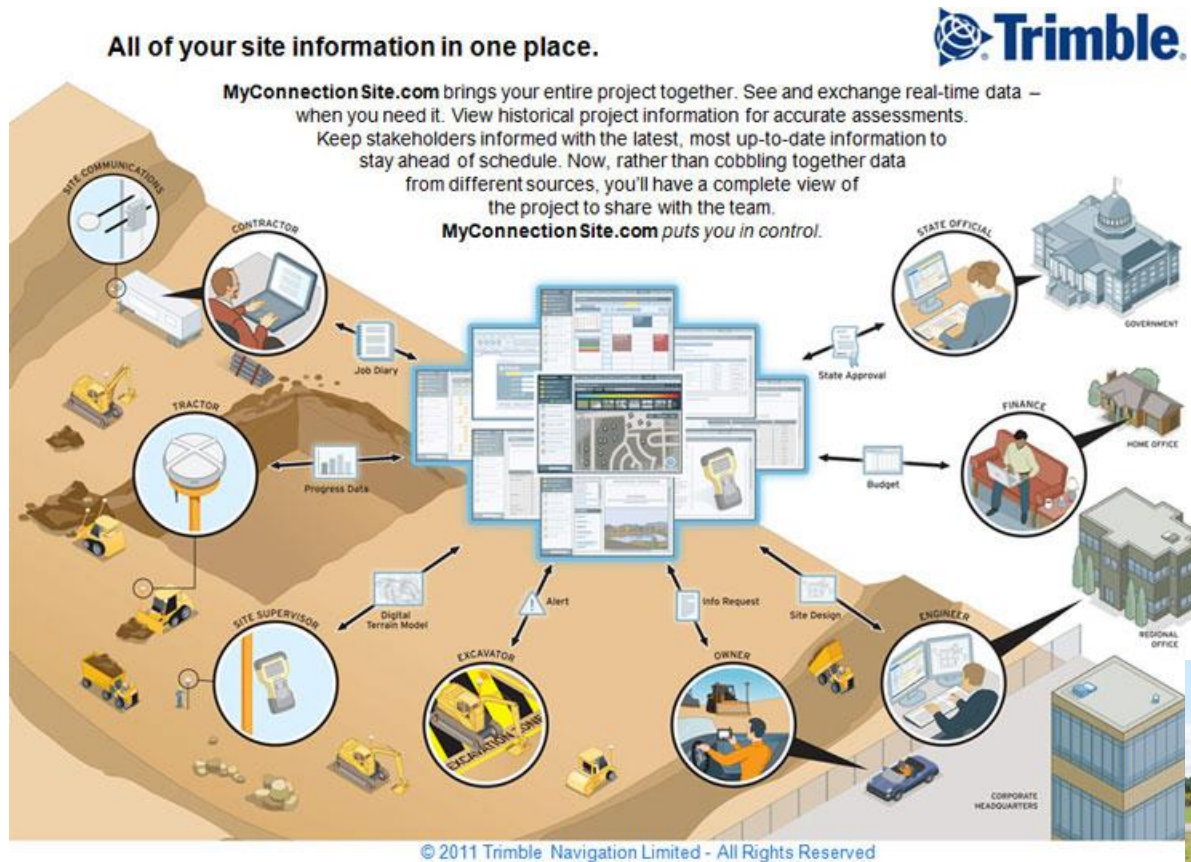
Virtual Reality

How is construction using Virtual Reality



Iris VR

IoT, Barcoding, RFID, Super Wi-Fi will enable materials to be manufactured, delivered, unloaded, erected into place and accounted for during the warranty and miniatous period autonomously





Legislative and Regulatory Impacts: COVID-19



- **Direct & Sustained Housing Assistance:**
Emergency Financial Assistance for Renters
Financial Forbearance for Property Owners
- **Reasonable Resident Protections**
Eviction Moratoriums, etc. must be Time-Limited and Allow for Sustainable Operations
- **Construction Recovery**
Incentivize Investment in Apartment Development and Rehabilitation
Reduce Barriers to Housing Construction



Legislative and Regulatory Impacts:



- **Affordability Mandates:**

- Rent Control

- Inclusionary Zoning

- **Barriers to Construction:**

- NIMBYism

- Exclusionary Land Use and Zoning

- **Cost of Regulatory Burdens:**

- Accordingly to a recent NMHC/NAHB survey, 32 percent of multifamily development costs stem from complying with local, state and federal regulations. That reaches 42.6 percent in a quarter of cases.

Figure 1: Incidence and Typical Magnitude of Regulatory Costs

Type of Cost	Share of Developers' Projects Subject to the Cost	Average Cost When Present (as a Share of Total Development Costs)
Cost of applying for zoning approval	98%	4.1%
Interest costs on refundable fees charged when site work begins	50%	0.5%
Other (non-refundable) fees charged when site work begins	93%	4.5%
Development requirements that go beyond the ordinary	95%	6.3%
Land dedicated to the government or otherwise left unbuilt	50%	4.3%
Fees charged when building construction is authorized	93%	4.2%
Cost of complying with affordability mandates (e.g., inclusionary zoning)	30%	5.7%
Cost increases from changes to building codes over the past 10 years	98%	7.2%
Cost of complying with OSHA requirements	90%	2.6%
Pure cost of delay (i.e., even if regulation imposed no other type of cost)	98%	0.7%



Changes on the Horizon for Multifamily Housing Post-COVID-19

Q&A