



MARYLAND CENTER *for*
CONSTRUCTION
EDUCATION & INNOVATION

The Critical Path

Positioning Maryland as an Innovation Leader in
the Global Construction Industry



The Critical Path

The Critical Path



MCCEI.ORG

For Downloads:

1. Executive Summary
2. Full Report

Scan this QR code.



The Critical Path

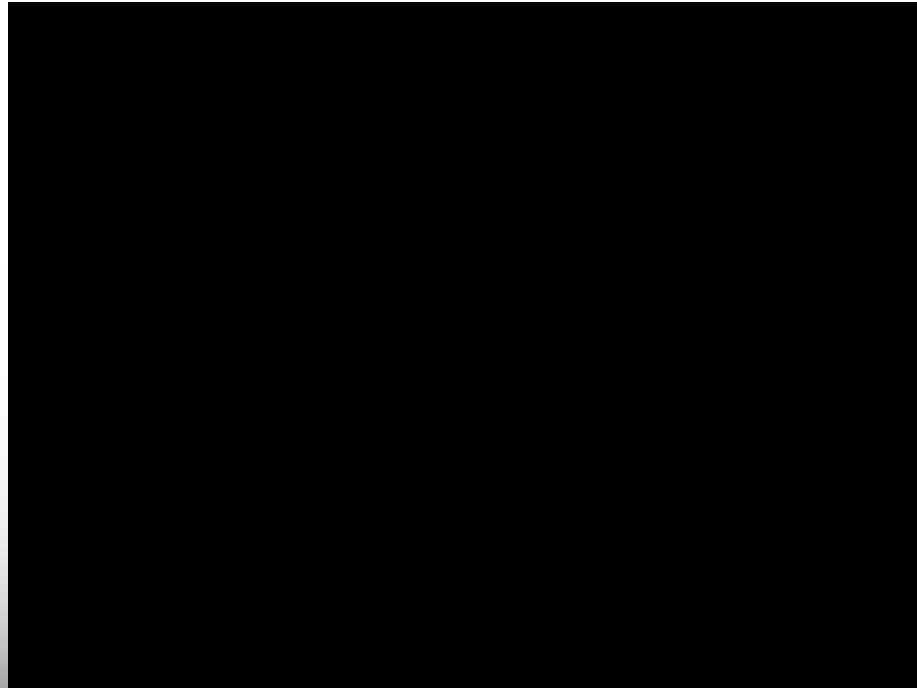
To Join the MCCEI Mailing List:

Send your email address by text message.

Text: MCCEI to 22828 to get started.



The Critical Path





The Critical Path

Martin G. Knott, Jr.

Chairman, MCCEI





The Critical Path



STATE OF MARYLAND

DLLR

DEPARTMENT OF LABOR, LICENSING AND REGULATION





The Critical Path



GOVERNOR'S WORKFORCE INVESTMENT BOARD





The Critical Path

Event Sponsors



The Critical Path



**Chaney
Enterprises**

1962-2012 and Just Getting Started





The Critical Path



Poole & Kent

An EMCOR Company



The Critical Path





The Critical Path

Maryland's Construction Industry:

- **5th Largest Employment Segment**
- **7.4% of the State's Overall Employment**
- **Average Age of Craft Worker is 47**
- **Ranked 248 out of 250 Occupations in a 2010 High School Poll**



The Critical Path

MCCEI Accomplishments:

- **Launch of MCCEI.org**
- **Education and Training Map**
- **Model for Other State Industry Clusters**
- **The Critical Path**



The Critical Path

Statistics:

- **126 Built Environment Professionals**
- **104 Companies and Institutions**
- **Employ 13,700 State Residents**
- **\$7.2 Billion in Annual Volume**



The Critical Path

Robert M. Aydukovic, CRE

President

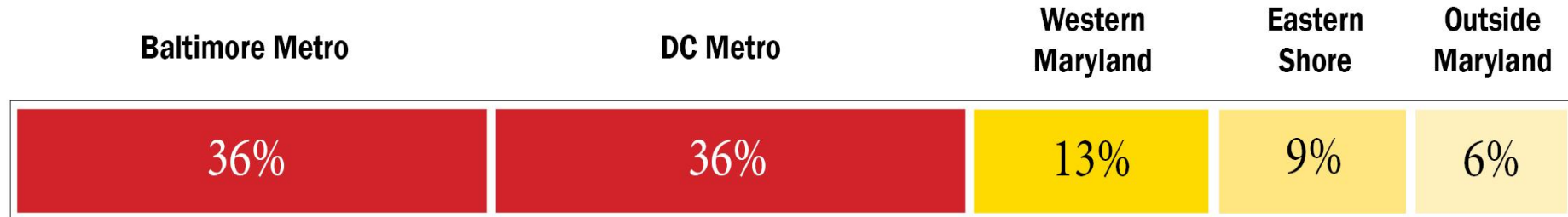


MARYLAND CENTER *for*
CONSTRUCTION
EDUCATION & INNOVATION



The Critical Path

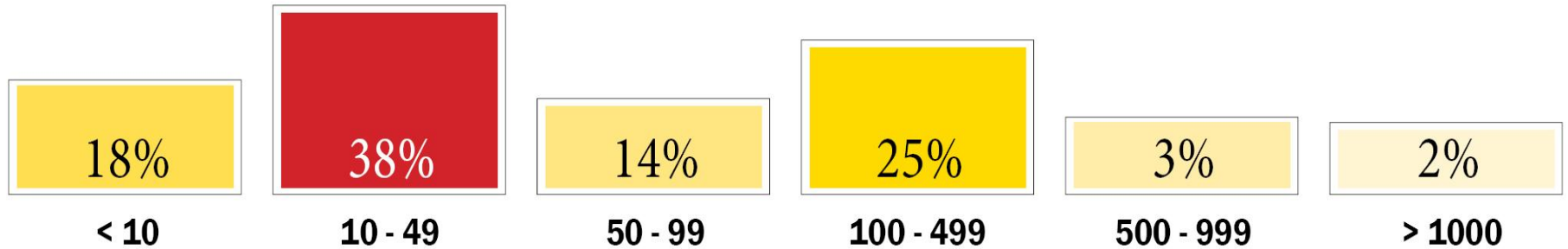
Interview Company Statistics : Geographic Breakdown by Business Location





The Critical Path

Interview Company Statistics : Size by Maryland Employment





The Critical Path

Interview Company Statistics : Breakdown by Business Type

General Contractor or Construction Manager	Sub-Contractor	Developer or Owner	Architect Engineer	Heavy Civil	Institutional Facilities
40%	19%	15%	13%	7%	6%



The Critical Path

What We Tested:

- **Workforce Pipeline**
- **Technological Revolution**
- **Maryland's Education System**
- **Career Pathways and Articulations**
- **Image Problem**



The Critical Path



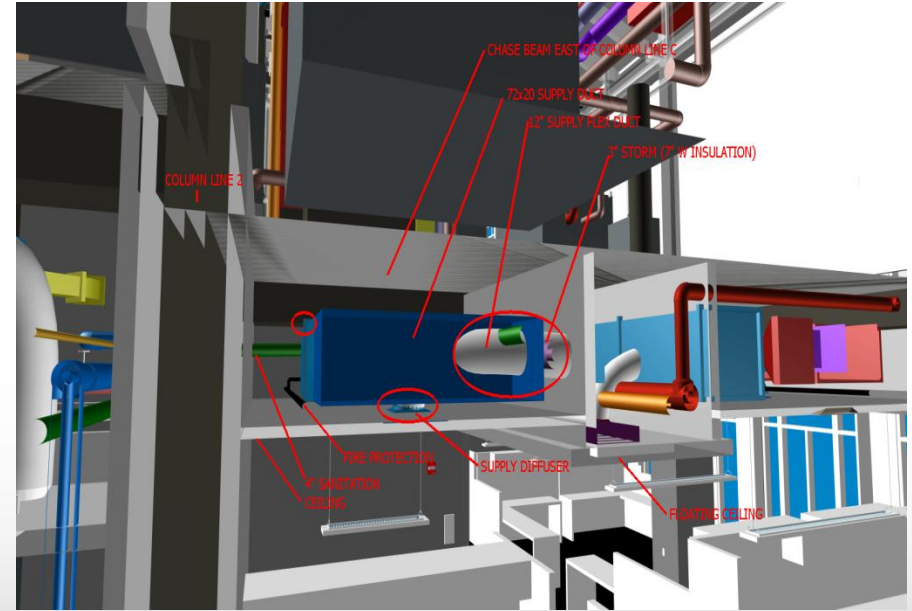


The Critical Path





The Critical Path





The Critical Path

Daraius Irani, Ph. D.

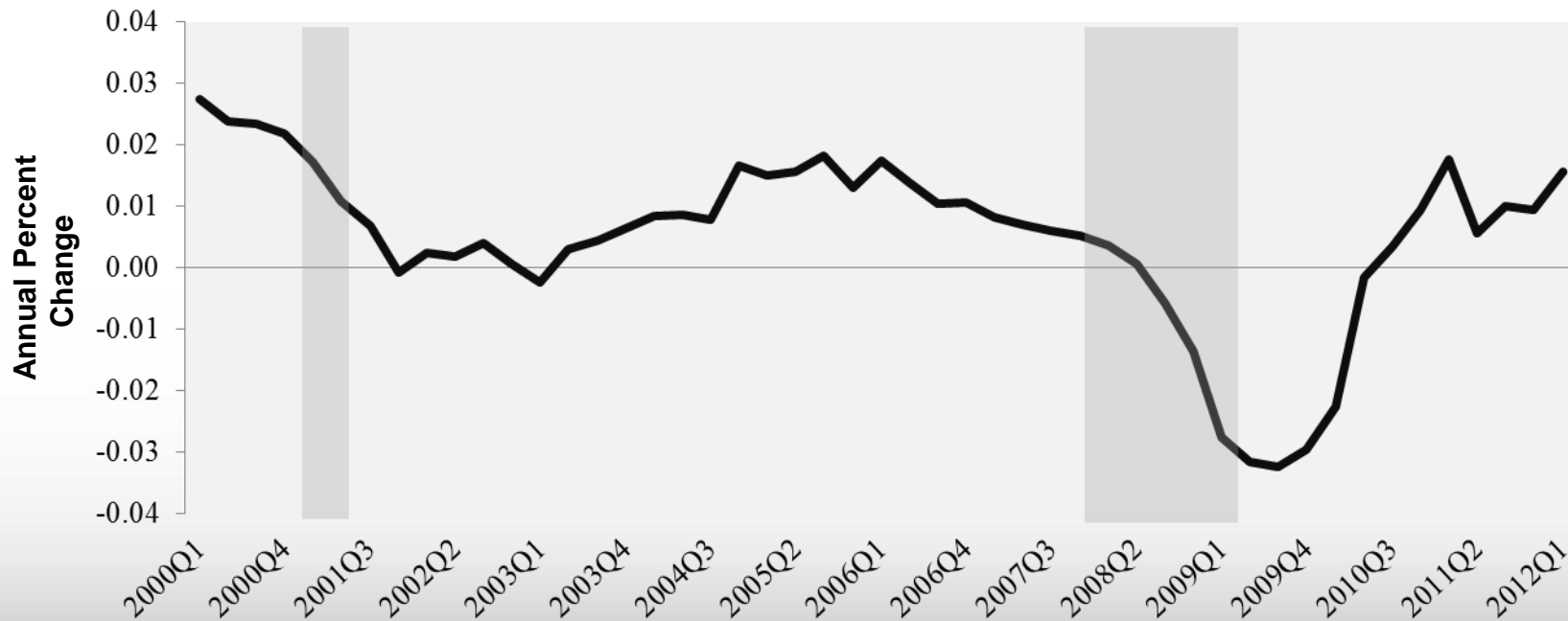
Executive Director





Construction Employment

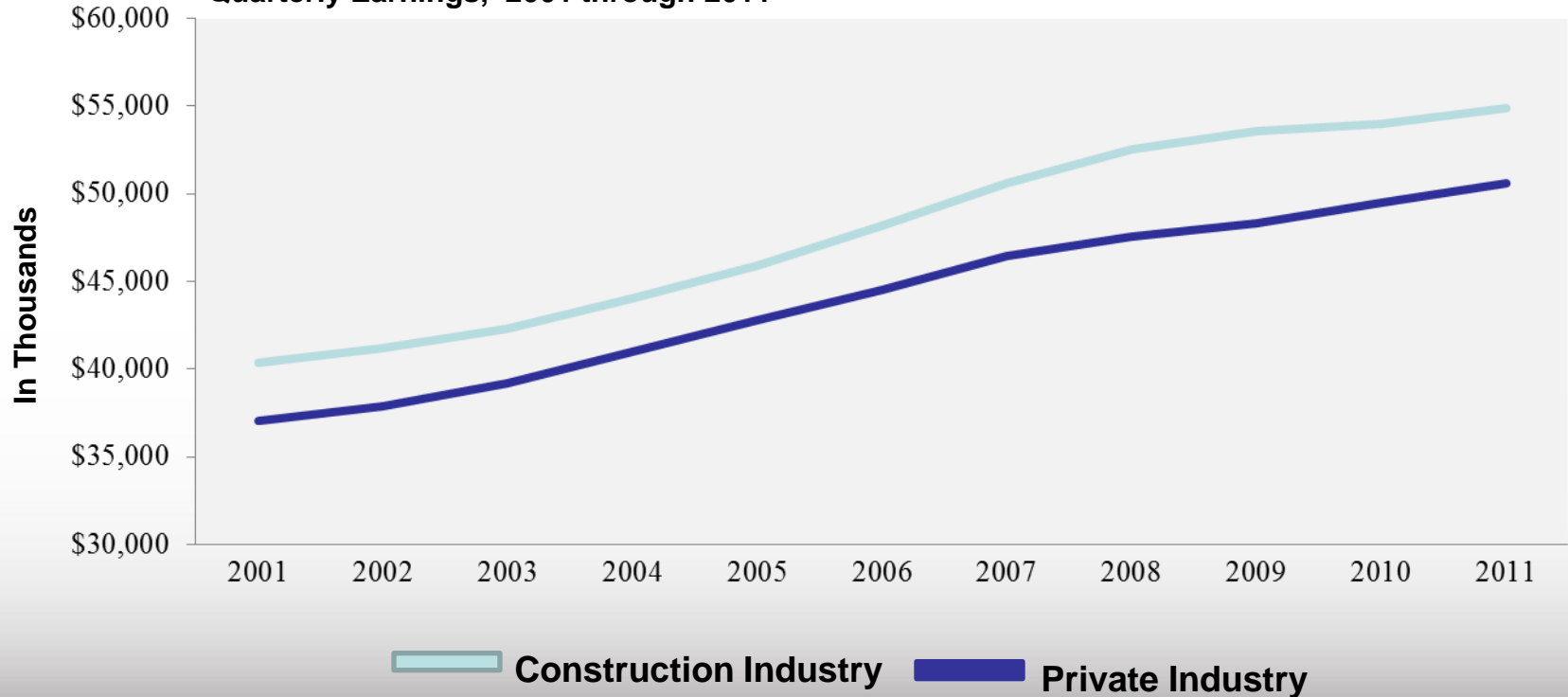
Seasonally Adjusted, 2000 Q1 through 2012 Q1





Construction Industry Pay

Quarterly Earnings, 2001 through 2011





Construction Industry in Maryland

- Maryland had 14,500 construction firms in 2010, of which 90% were small (<20 employees)
- Private nonresidential construction spending in Maryland totaled \$2.5 billion in 2011.
- Nonresidential construction starts in Maryland totaled \$6.0 billion in 2010 and \$7.4 billion in 2011.



Value of Construction

Type of Construction	Spending (October 2012)	Percent Change (Oct 2011-Oct 2012)
Total	\$872.1M	9.6%
Residential	\$300.8M	19.4%
Nonresidential	\$571.3M	5.1%



The Critical Path

Anirban Basu

Chairman and CEO



Sage Policy
Group, Inc.

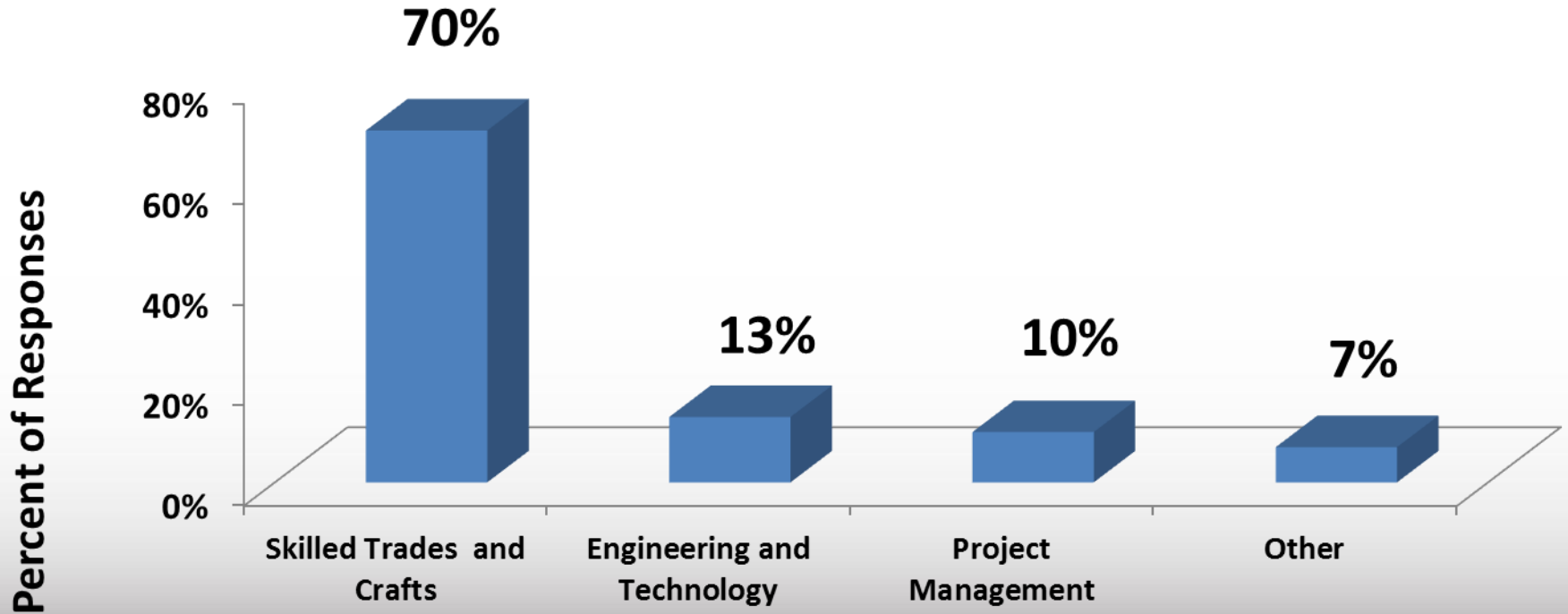


The Critical Path

**What it Means to be on
The Critical Path**

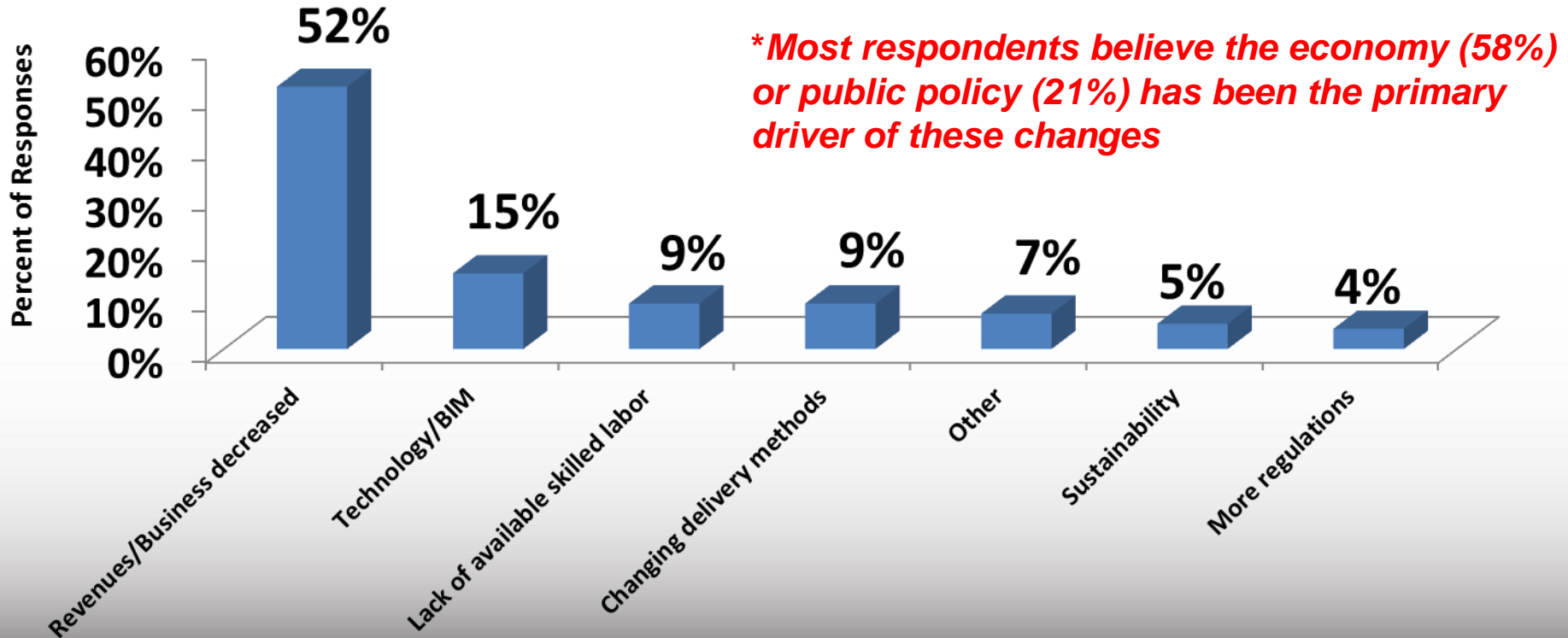


“What Will the Top Areas of Labor and/or Skills Shortages Likely Be Over the Next Decade?”





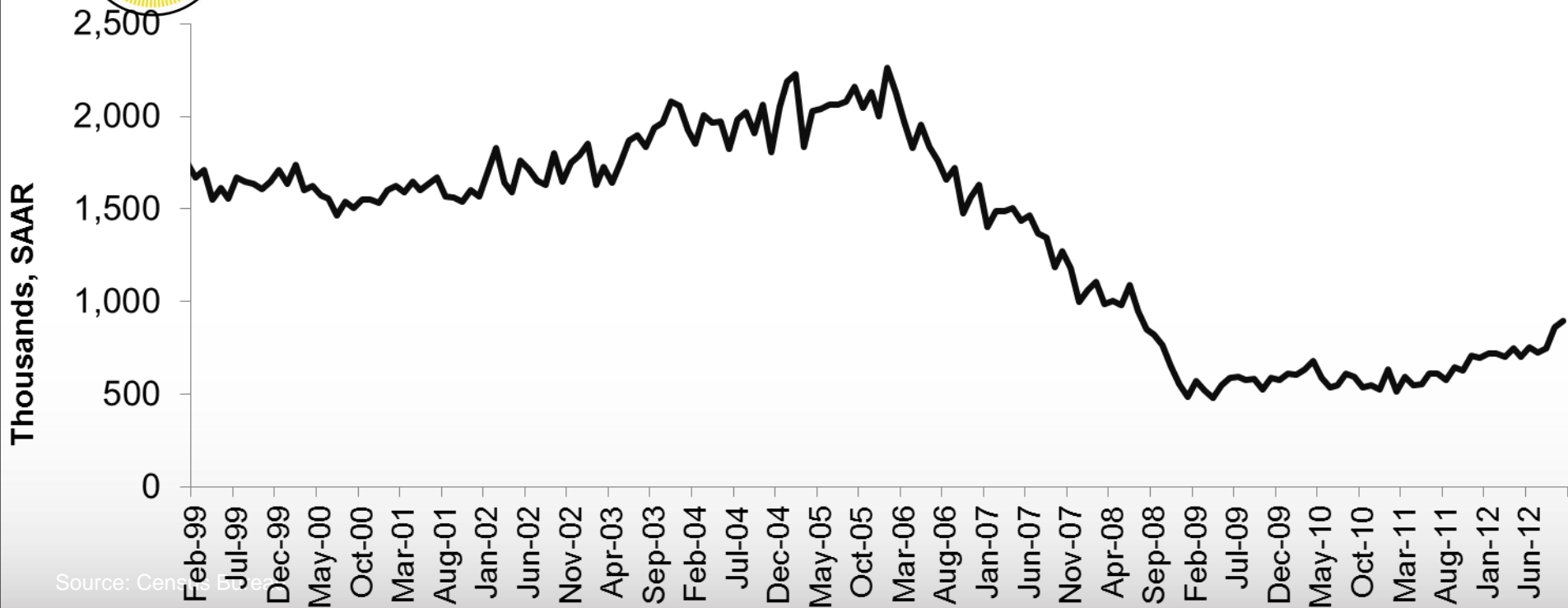
“What are the Top Things that have Changed the Most About the U.S. Construction Industry Over the Past Five Years?”





U.S. Housing Starts

February 1999 through October 2012

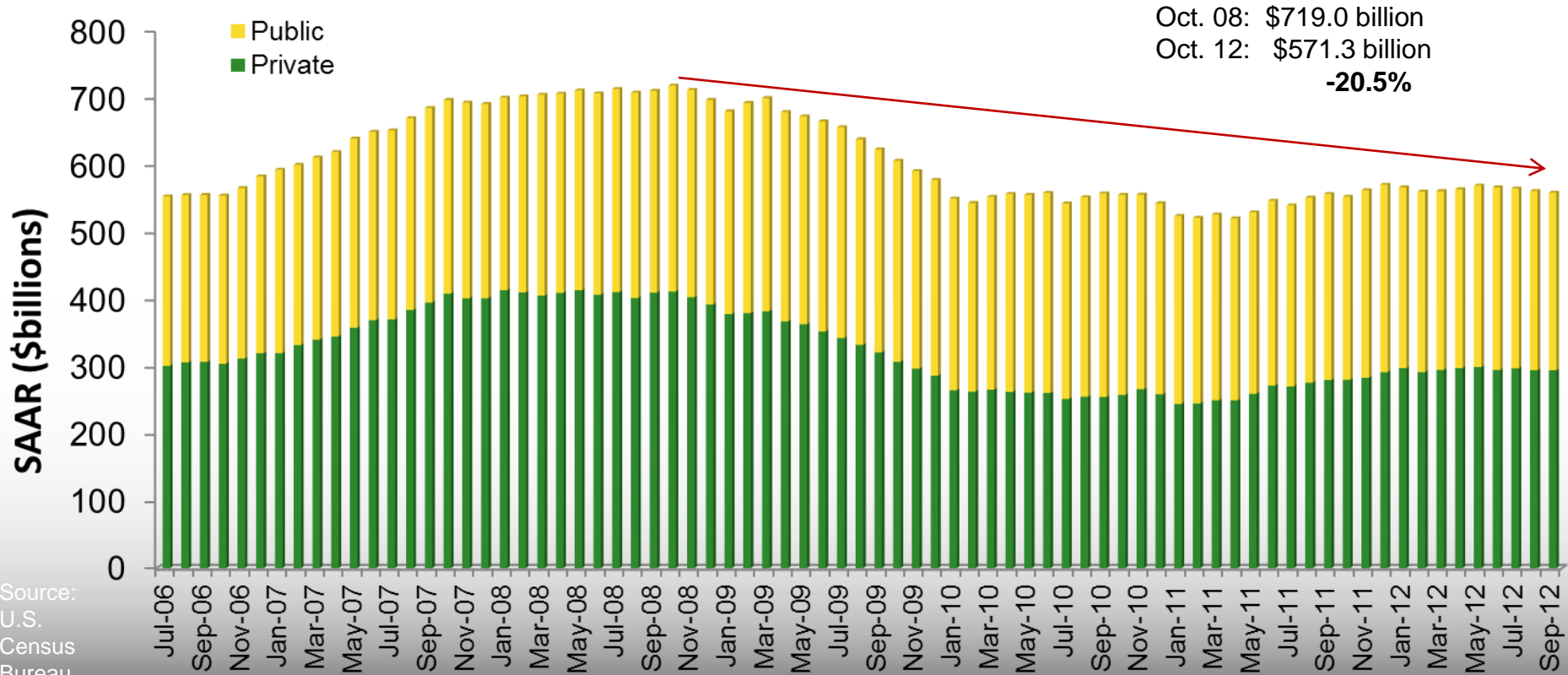


Source: Census Bureau



Nonresidential Construction Put-in-Place

July 2006 through October 2012

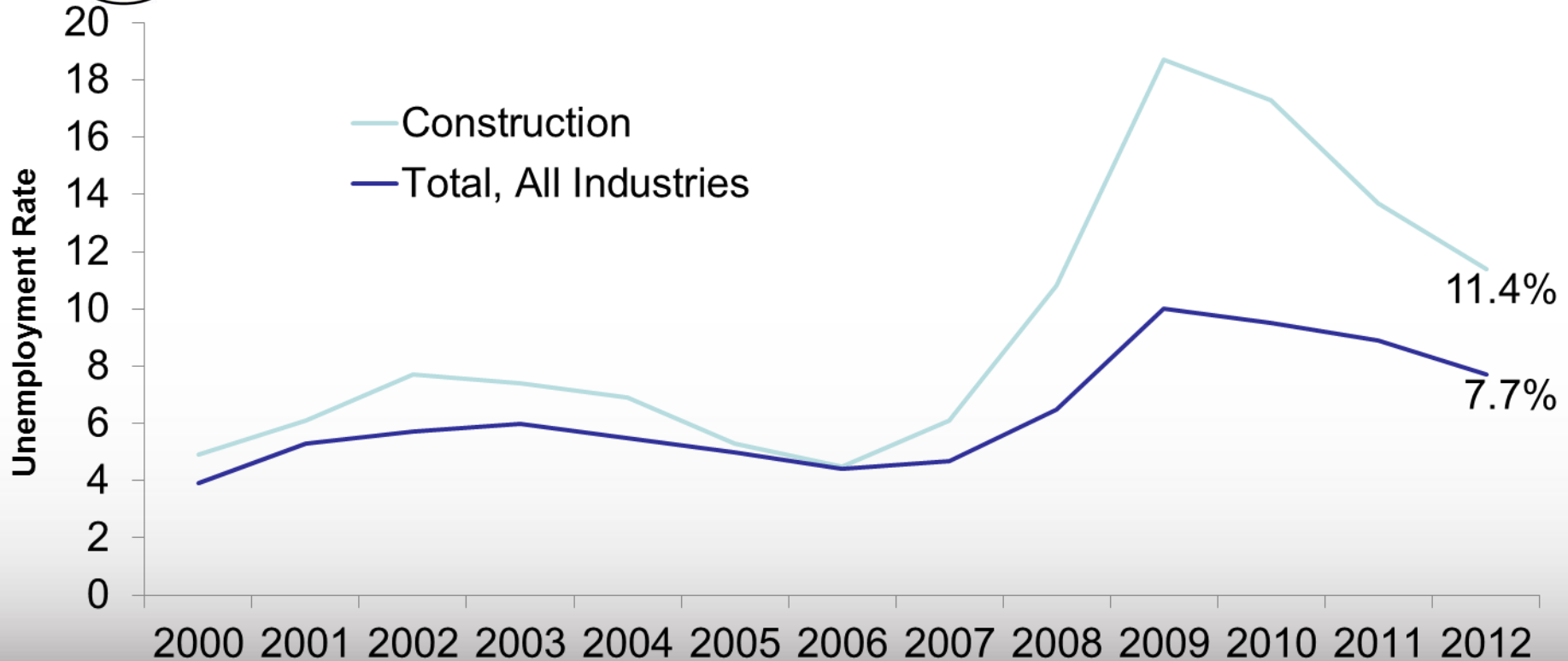


Source:
U.S.
Census
Bureau



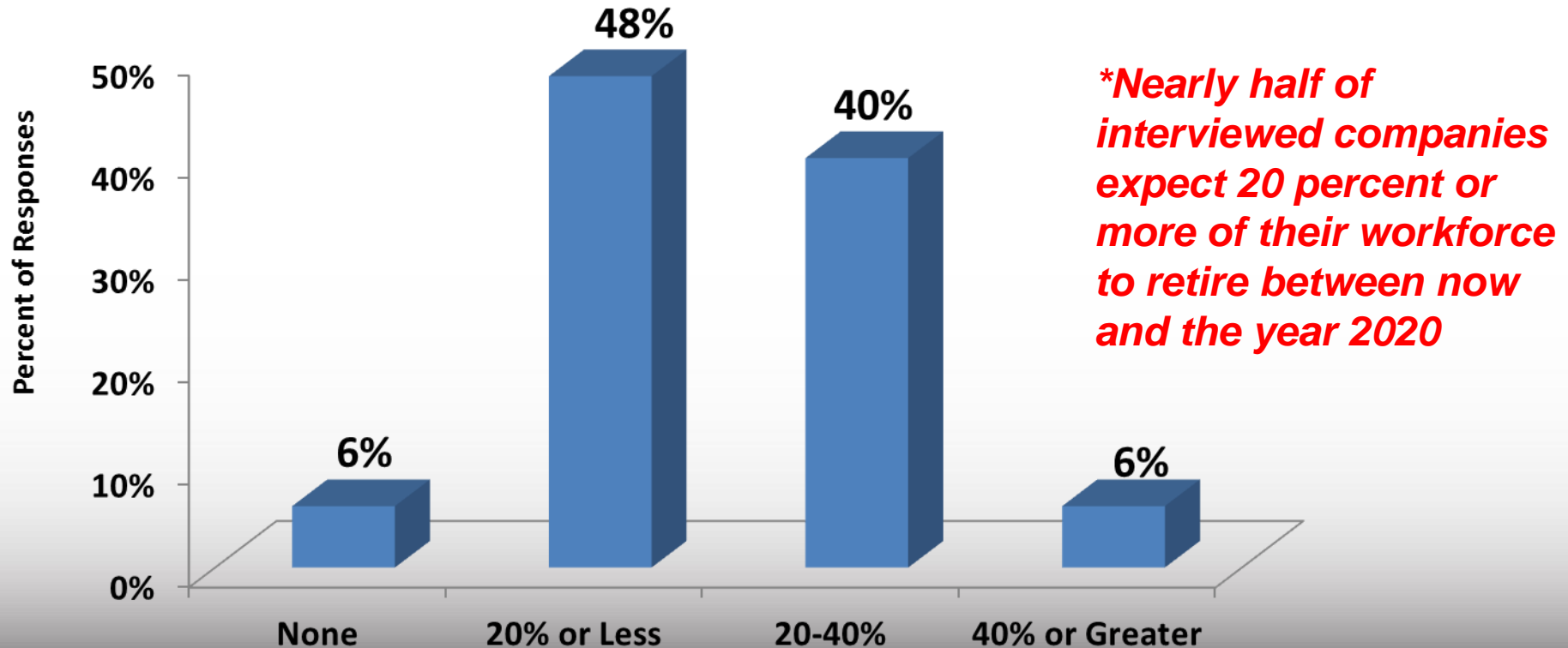
Unemployment Rates, Total v. Construction, NSA

October 2000 through October 2012





“What Proportion of Your Company's Workforce Is Likely to Retire Between Now and the Year 2020?”





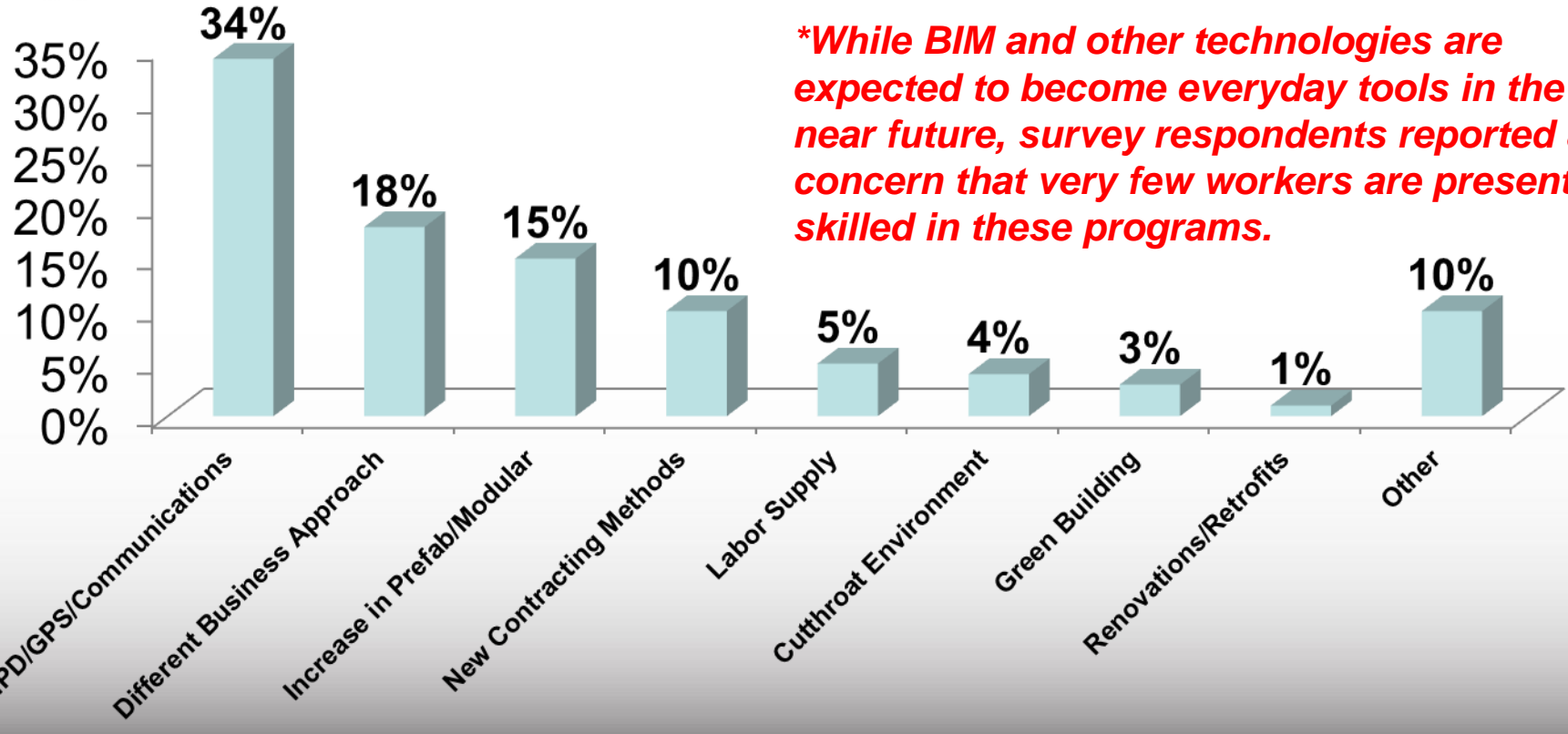
The Critical Path

The Construction Revolution



“What Will Be the Most Dramatic Changes in the Way in which Construction Services Will Be Delivered Over the Next Decade?”

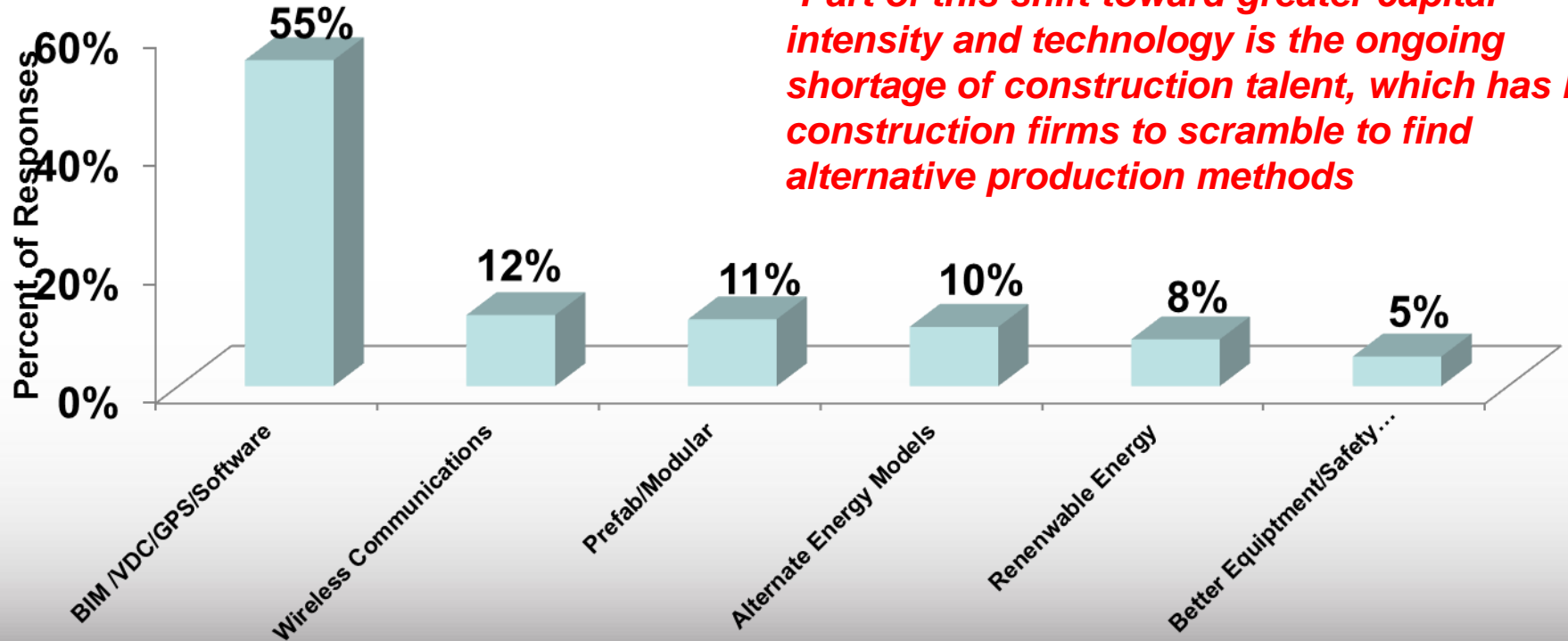
Percent of Responses



**While BIM and other technologies are expected to become everyday tools in the near future, survey respondents reported a concern that very few workers are presently skilled in these programs.*



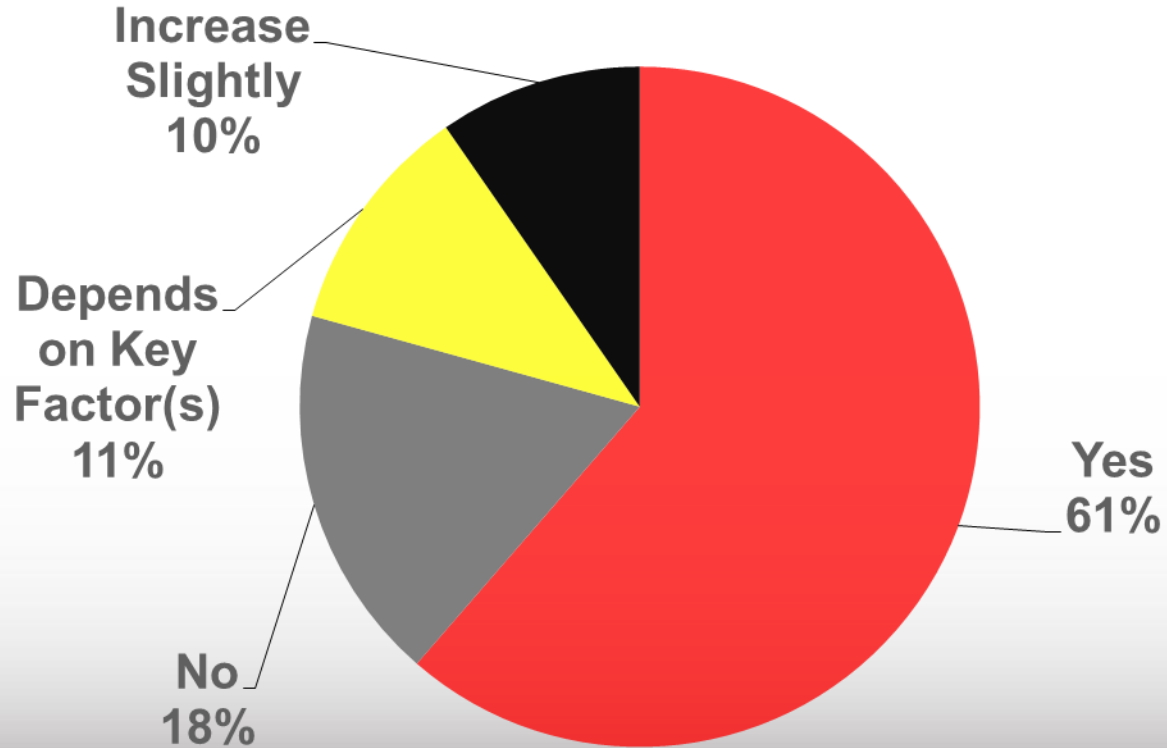
“What Are the Top Construction Technologies You Think Will Become Available or Broadly Diffused Over the Next Decade?”



**Part of this shift toward greater capital intensity and technology is the ongoing shortage of construction talent, which has led construction firms to scramble to find alternative production methods*

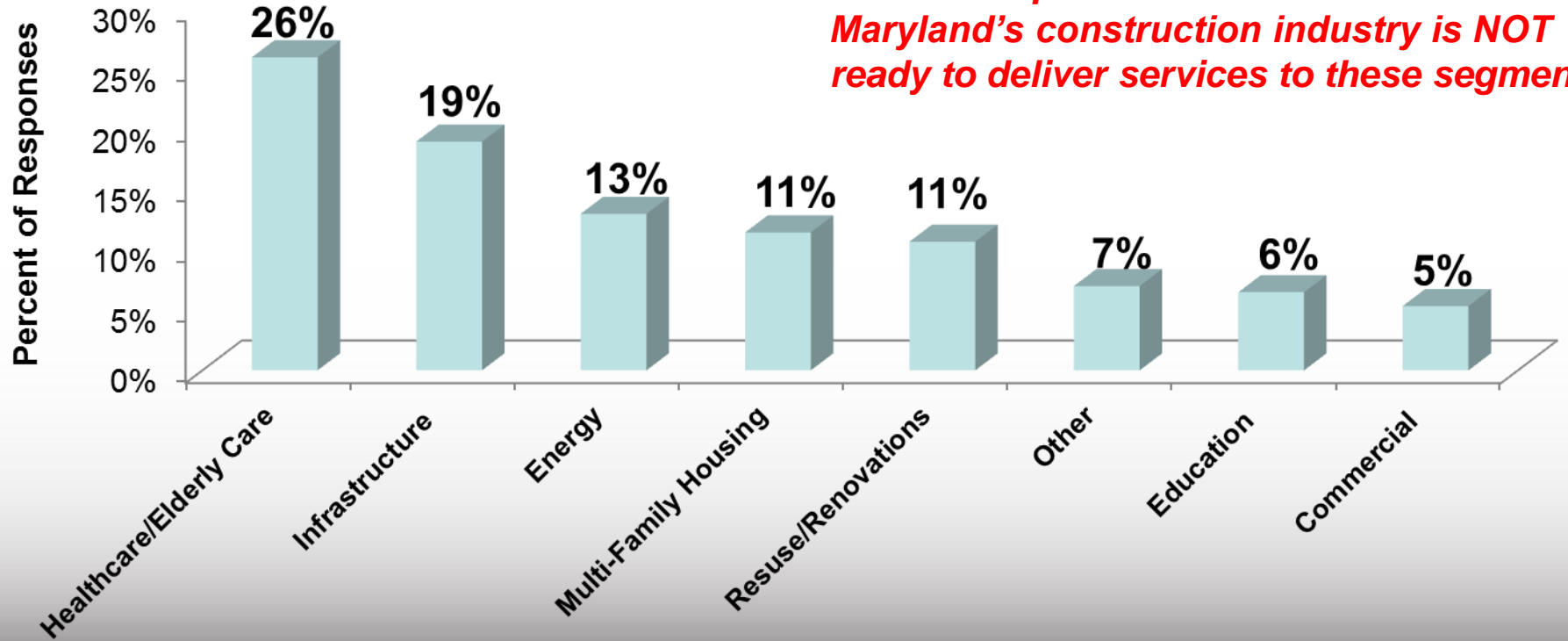


In the Next 10 Years, Will Construction Look Like Manufacturing With Offsite Production and Onsite Assembly ?





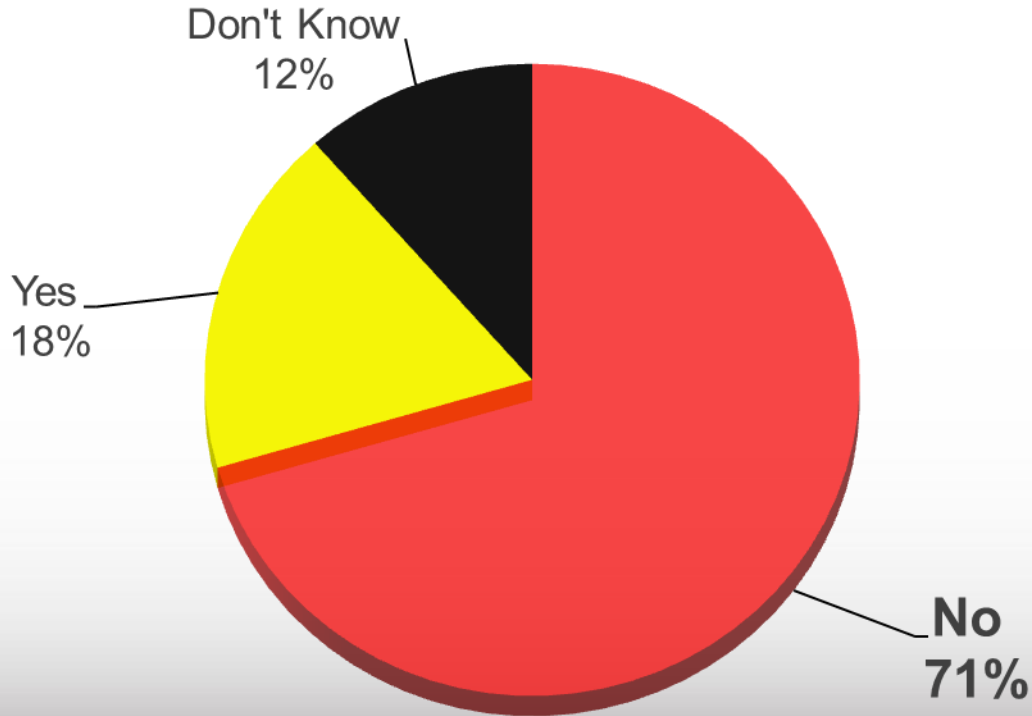
“What Are the Top Construction Segments that Are Most Likely to Produce Significant Increases in Demand for Construction Over the Next Decade?”



****25% of respondents believe that Maryland's construction industry is NOT ready to deliver services to these segments***



“Do You Think Either the Industry or the Maryland Education System Is Doing Enough to Create an Adequate Construction Workforce?”

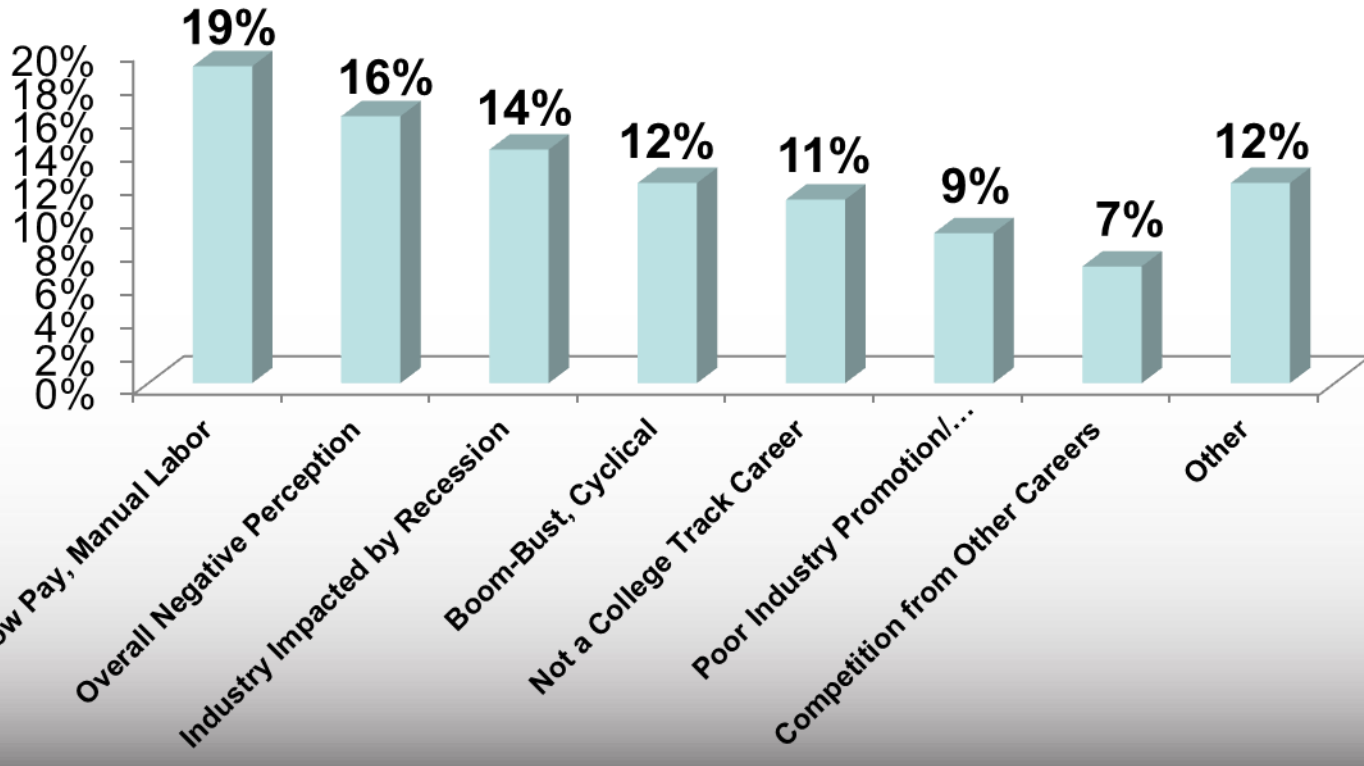


****Respondents suggested that Maryland's policymakers and educational leaders can help by encouraging educational institutions to provide more opportunities for education in the skilled trades***



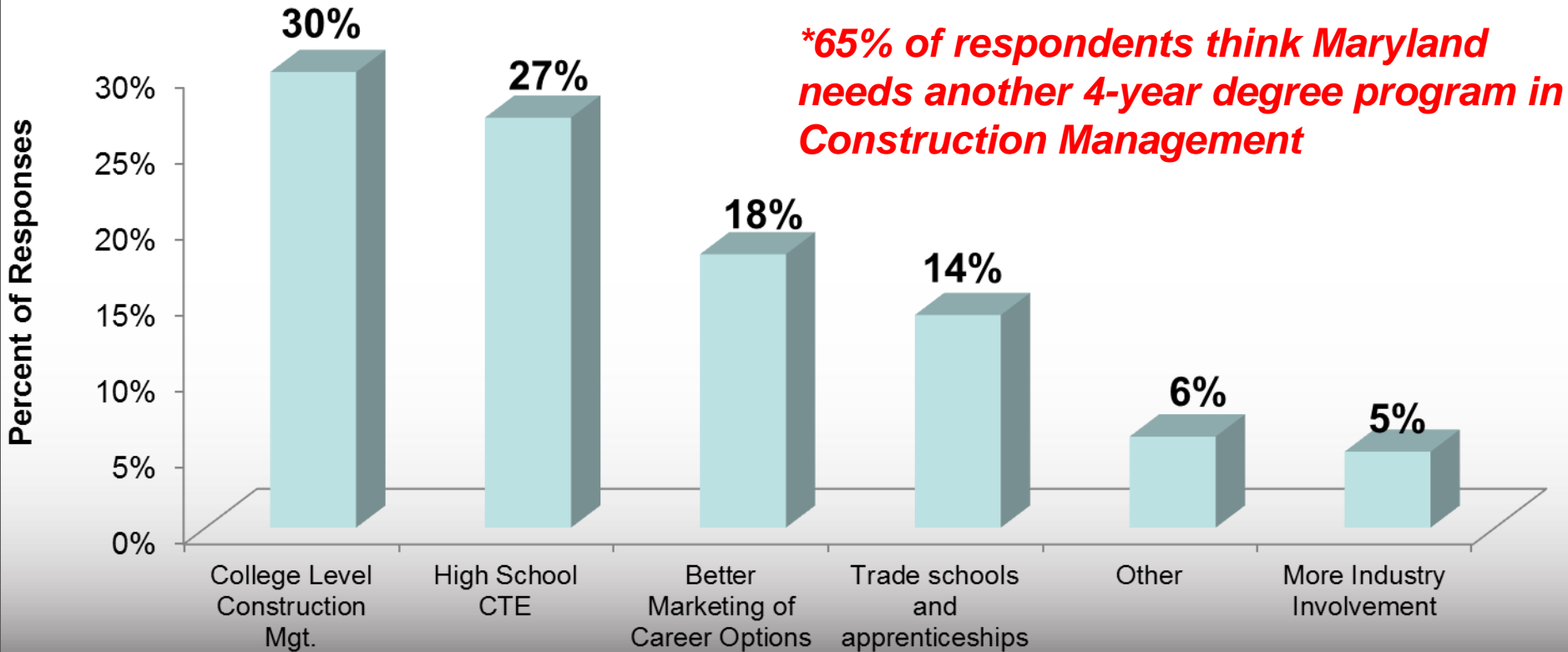
“What Will Be the Largest Obstacles to Recruiting People to Consider Careers in the Maryland Construction Industry Over the Next Decade?”

Percent of Responses



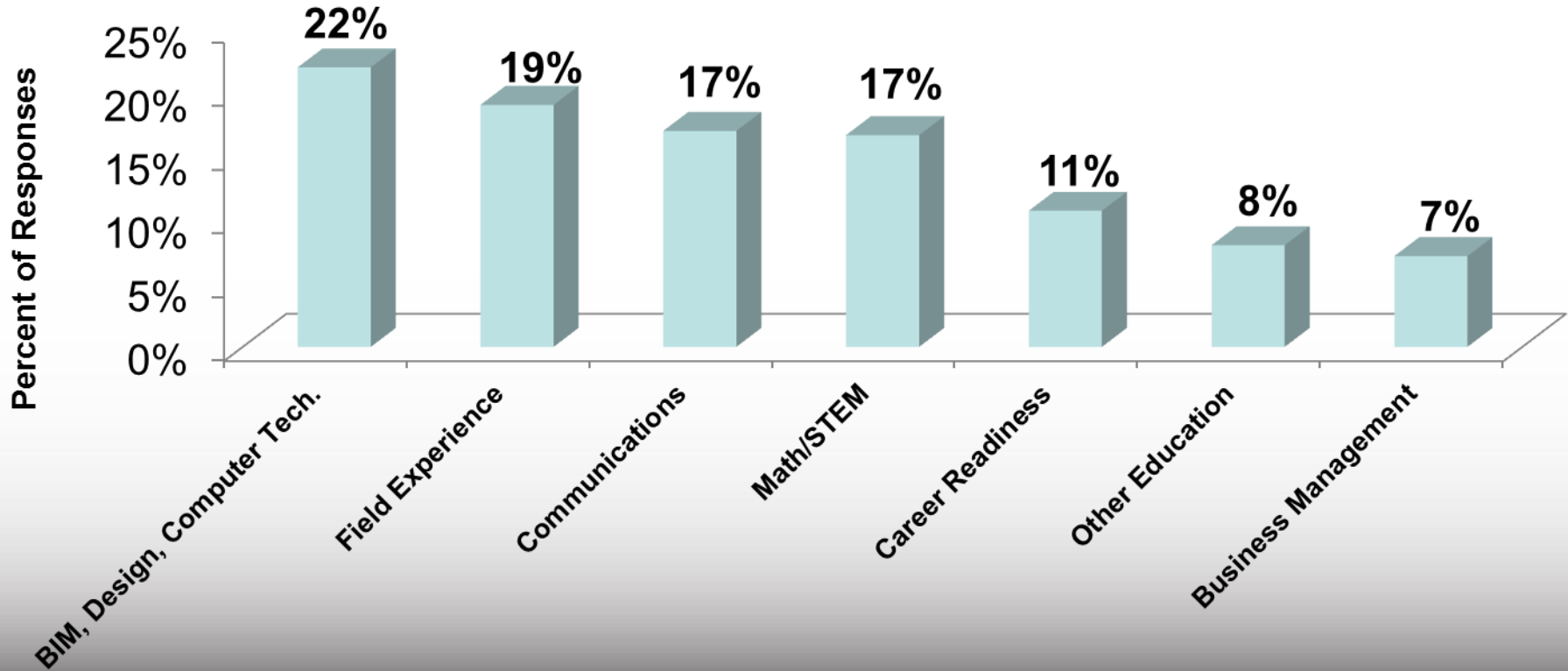


“What Are the Top Areas of Maryland's Education and Training Sector that Need the Most Improvement in Order to Best Serve the Construction Industry Over the Next Decade?”





Top Recommended Concentrations for Maryland's Education System to Best Serve the Construction Industry





The Critical Path

Conclusion:

- A confluence of forces portends significant skilled shortages in construction going forward;
- If Maryland is able to counteract these forces and create a 21st century construction workforce, the benefit to Maryland's economy will be enormous;
- Increasingly, the industry will be a global one: one capable of supporting exports;
- As with manufacturing, the construction jobs of the future are likely to be more technical and therefore more highly compensated.



The Critical Path

Martin G. Knott, Jr.



Gino Gemignani





The Critical Path

Recommendation 1

Create or expand construction education programs at Maryland four-year institutions to meet the demands of Maryland construction companies.



The Critical Path

Recommendation 2

Better align K-12, high school career and technical education (CTE), community college and apprenticeship programs with new construction skill requirements.



The Critical Path

Recommendation 3

Create or strengthen articulations between high schools, CTE programs, apprenticeships, community colleges and universities to define educational pathways for a career in construction.



The Critical Path

Recommendation 4

Create a public image campaign to convey attractive construction-related career options.



The Critical Path

Recommendation 5

Create a strategy to include demographic groups that have not historically participated in the industry's workforce.



The Critical Path

Recommendation 6

Recognize and adapt to the substantial technological changes in the construction environment necessary to keep the industry competitive.



The Critical Path

Governor Martin O'Malley





The Critical Path

Katharine Oliver

Deputy Superintendent





The Critical Path

Bernard J. Sadusky. Ed.D.

Executive Director





The Critical Path

Martin G. Knott, Jr.

Chairman, MCCEI





MARYLAND CENTER *for*
CONSTRUCTION
EDUCATION & INNOVATION

THANK YOU!

The Critical Path

Positioning Maryland as an Innovation Leader in
the Global Construction Industry