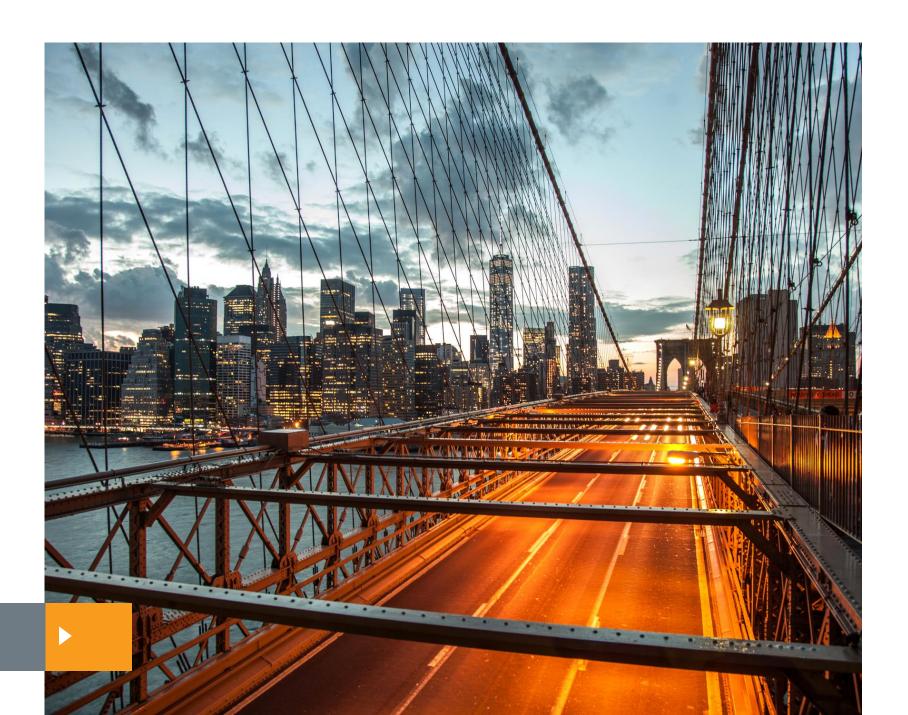


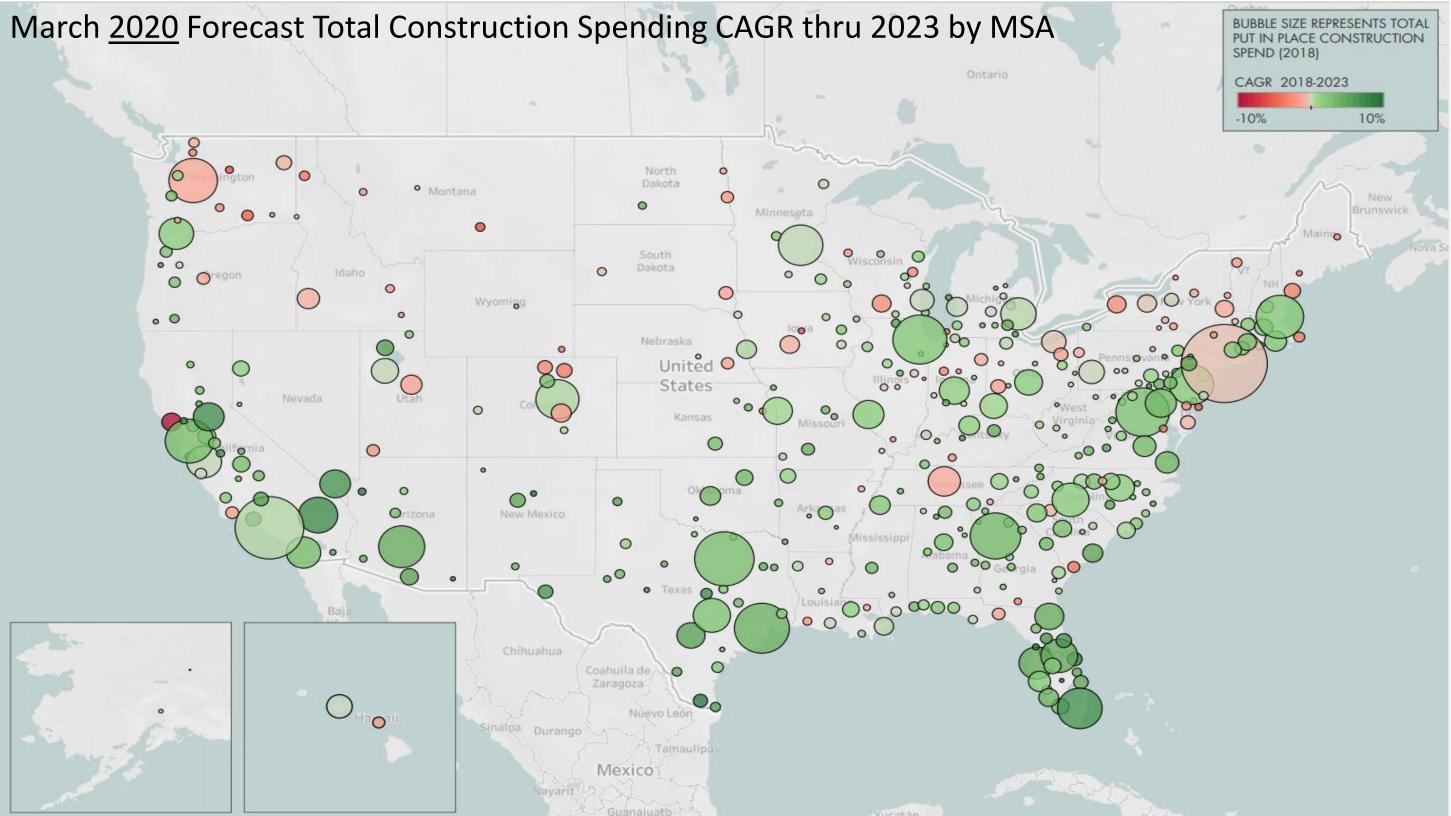
PCCA 76<sup>th</sup> Annual Convention Industry Update

Naples, FL | March 7, 2021



Outlook One Year Ago (March 2020)

Poten	tial Culp	orits	The Cause	
	March 201	9	March 2020	
China	The Fed	Bad Actor	VOTE	
		Y	Elections	
Russia	Infrastructure	Bad Tweet		
North Korea	USMCA	Rlack Swan Event		
		THE INTED S. OF AMERICA DISTIGUES B Link	Covid	
Iran	Tariffs	Federal Debt		
-	ALL HALF		Impeachment	
Venezuela	Democrats win House	Trans-Pacific Partnership		



#### Thoughts from 2020 at the Beginning of COVID-19 and the Digital Divide

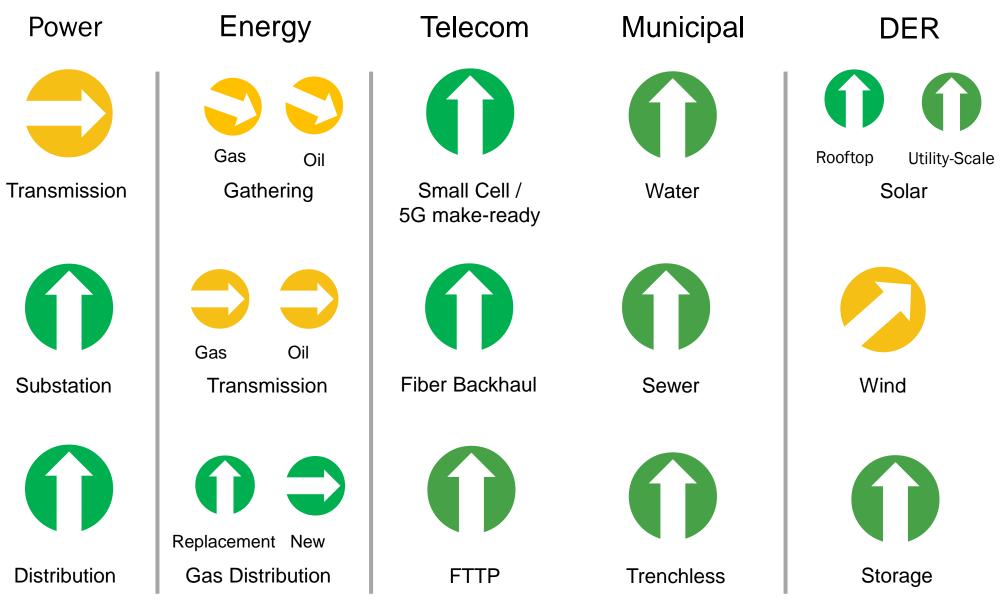


✓ Healthcare

- ✓ Homework
- ✓ Work@Home



#### Outlook in March 2020 at the Beginning of COVID-19 re: Future of Utility Infrastructure



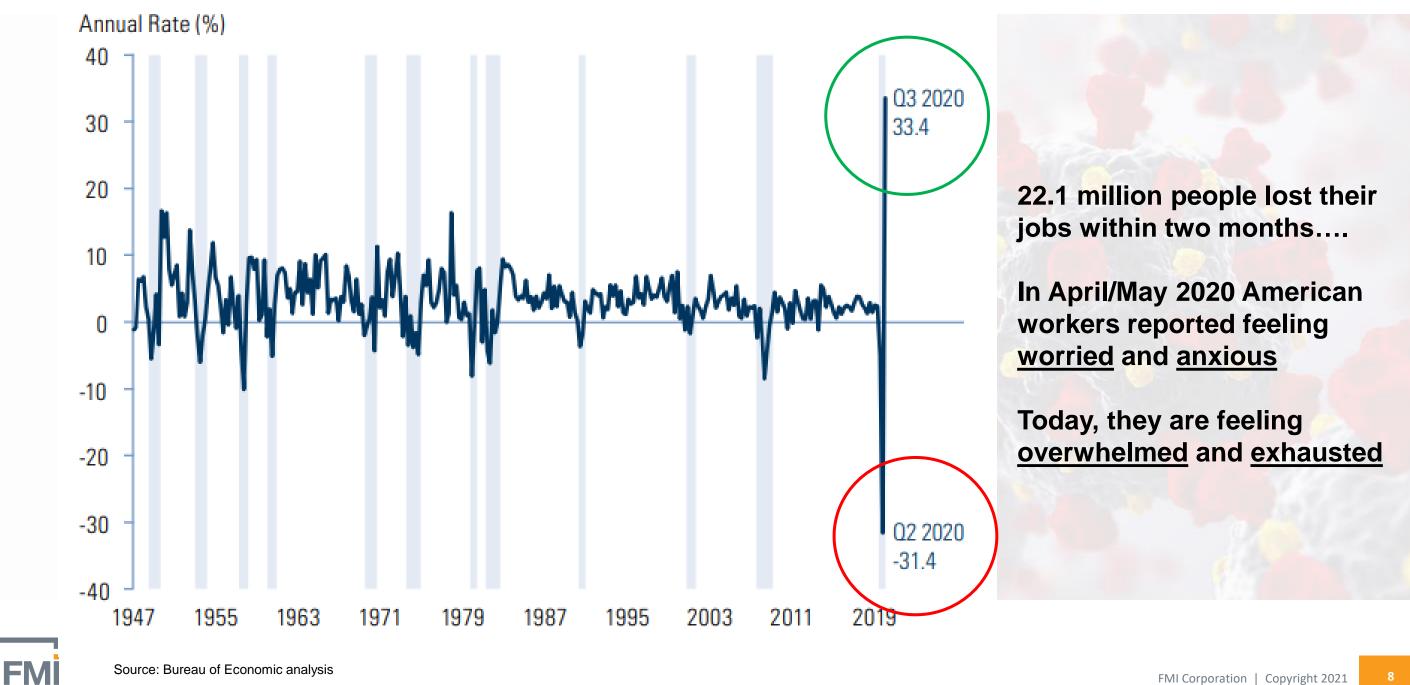


Source: FMI Utility T&D team

One Year Later



#### 2020 Really Was Unprecedented!



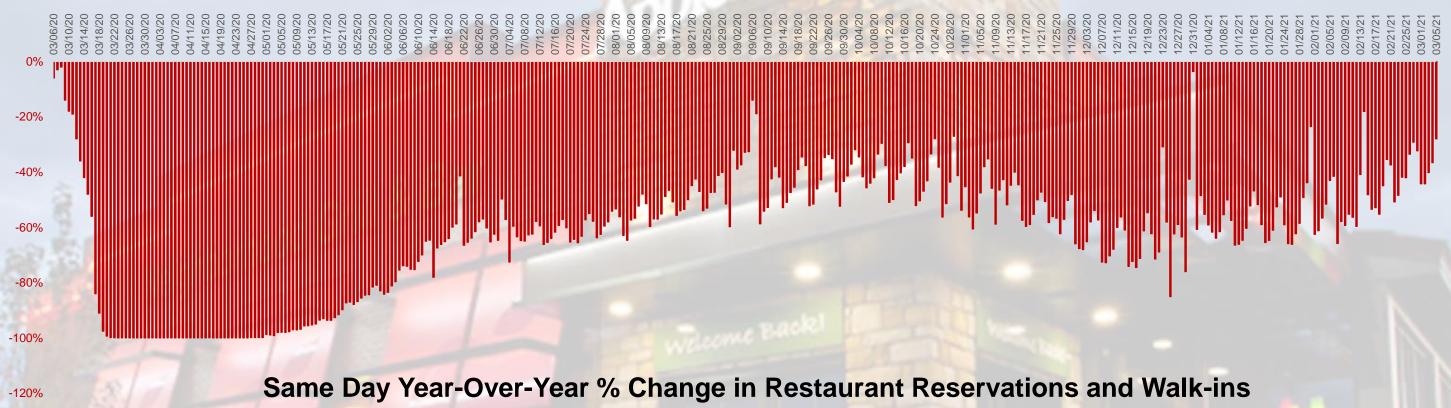
Source: Bureau of Economic analysis

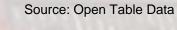
#### **Unemployment Rate**



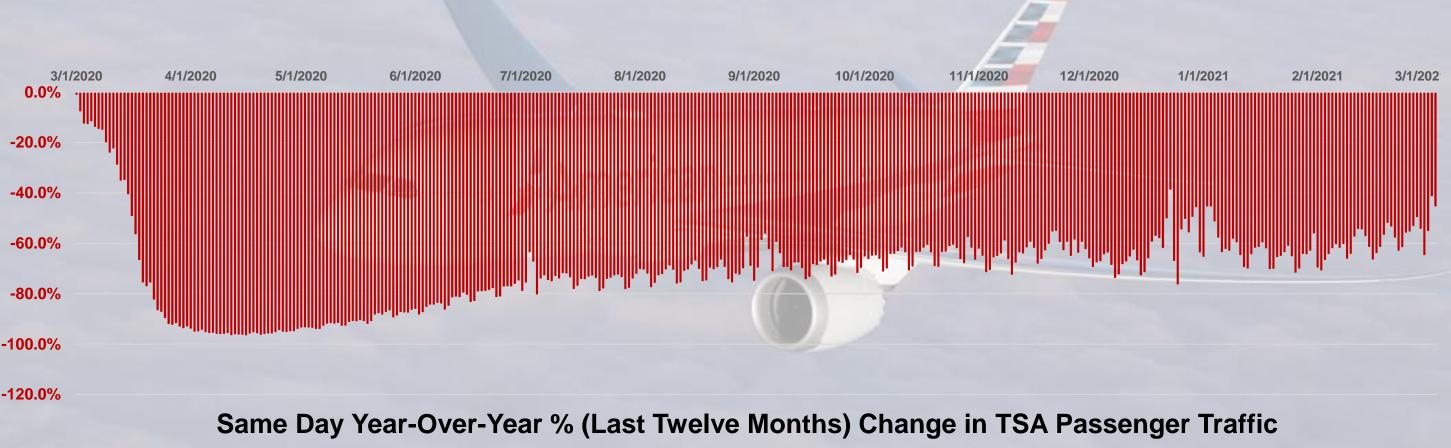
FM

#### **Restaurant Seated Reservations and Walk-Ins**





#### **Commercial Airline Travel**





#### **The Hospitality Industry**



#### **Hotel Room Occupancy** 70% 66% 66% \$180 \$167 \$163 61% \$160 60% 52% \$140 50% 44% \$120 40% \$100 \$85 30% \$80 \$60 20% \$40 10% \$20 0% \$-2018 2019 2020 2021 2022 2018 2019 2020

#### Hotel Room Revenue (\$B)

Estimated room revenue decline of 49%

Estimated room occupancy decline of 33%

FM

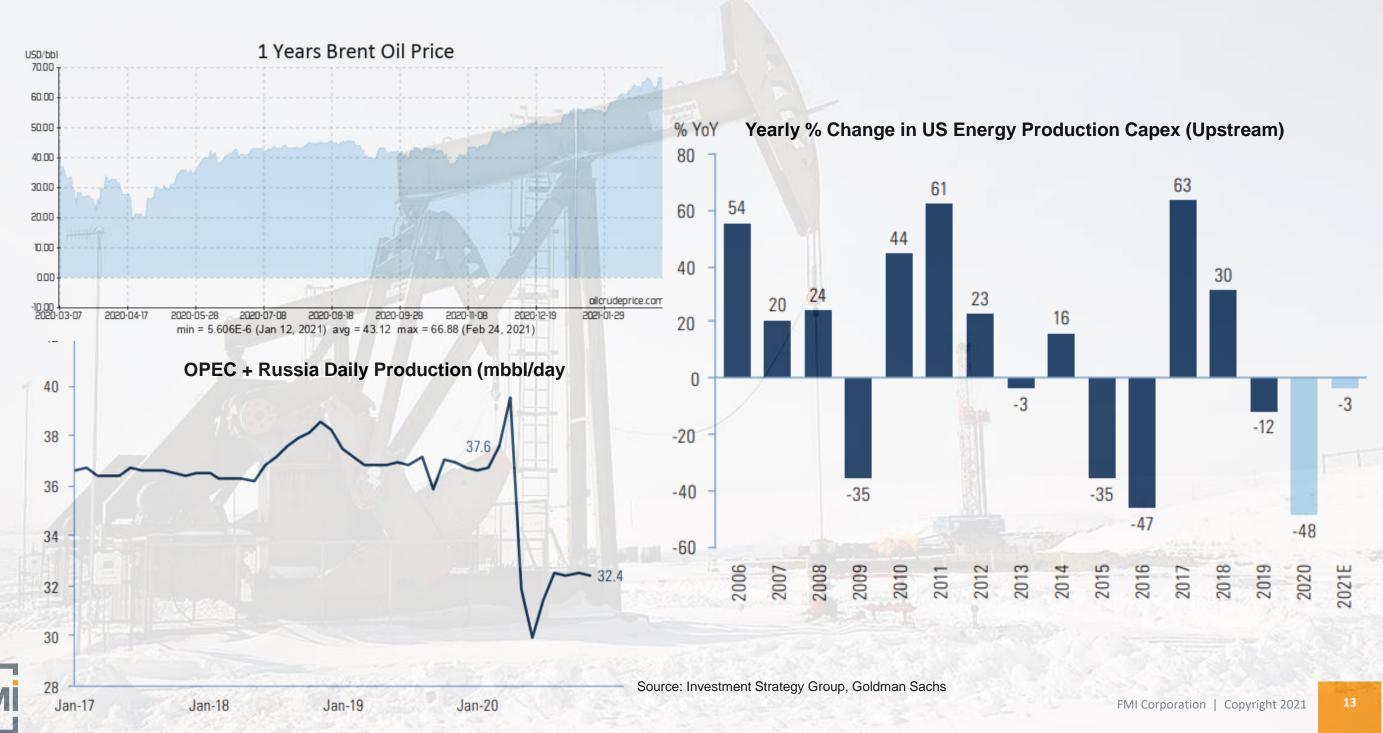
\$144

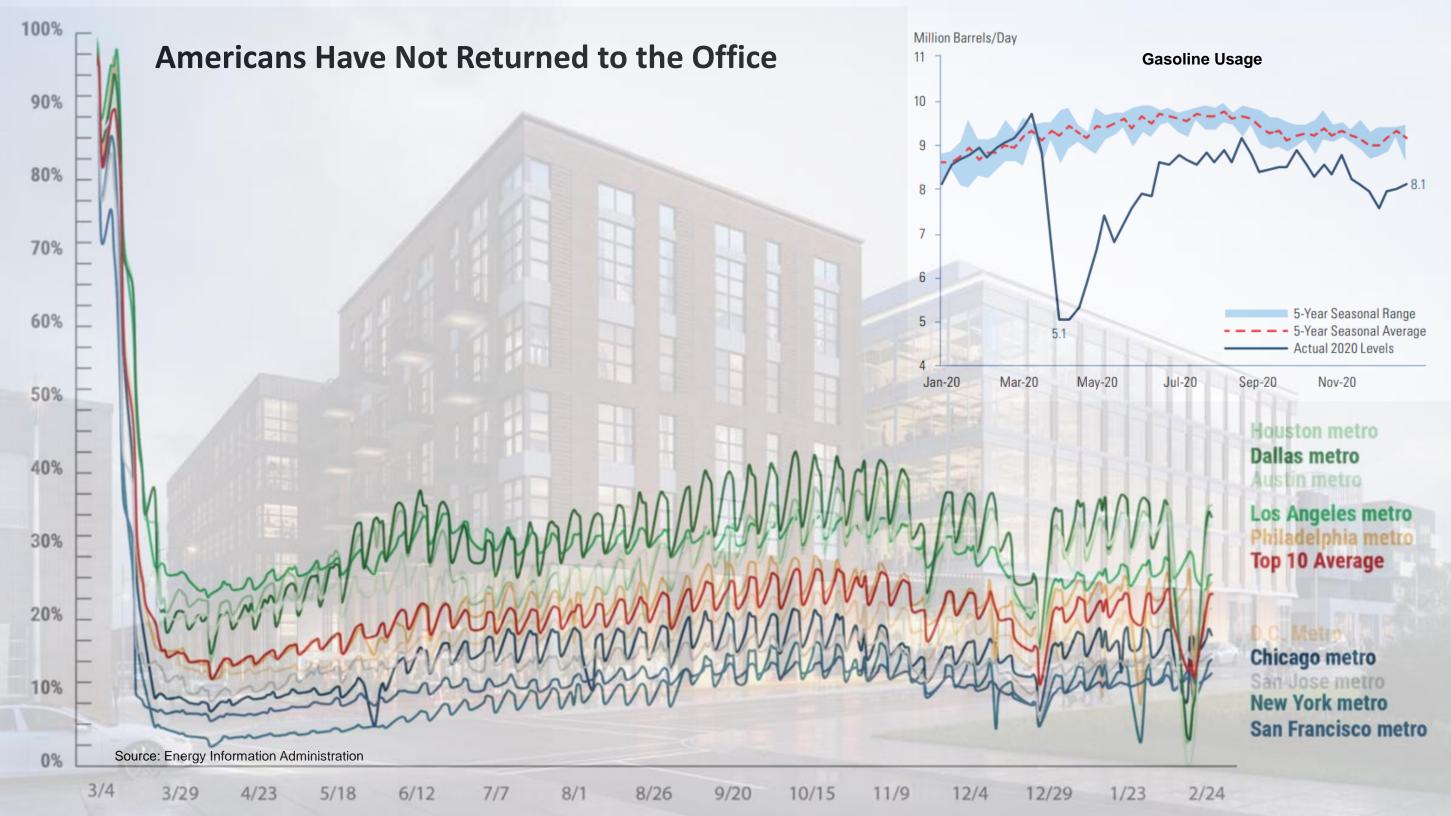
2022

\$110

2021

#### **Oil & Gas Production**





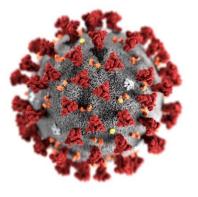
#### Impact on State and Local Revenue and Budgets

- State and local governments account for 13% of the American workforce
- State and local tax revenues represents 9% of US GDP
- Compared to prior recessions:
  - Income tax revenues will be less impacted due to federal unemployment assistance and concentration on lower wages
  - Consumption-based tax revenues have been more significantly impacted due to declines in usage (sales gas, hotels, etc.)
- State and local revenue declines are forecast to extend beyond 2020 into 2021 and 2022
- Federal stimulus aid to state and local governments in 2020 and early 2021 will make up a significant amount of the shortfall, but not completely and highly variable by state
- States with the largest revenue shortfalls in 2020 were Washington, Florida, California, New York and Nevada
- The Federal Reserve has established a program to support municipal bonds, but it has not seen significant need to date
- Even with federal support for revenue shortfalls, COVID-19 issues will continue to force state and local governments to reprioritize their budgets – including prioritizing education and social programs over social infrastructure

## **2020 COVID Impact on Utility Infrastructure Contractors and Suppliers**

#### **Utility Contractors**

- Short and long-term demand up
- Customers and/or geography impacted volume and profits
- Major challenges in large urban markets
  - New York
  - Chicago
  - Boston
  - San Francisco
- Permitting and inspections slowed down
- Labor availability challenges, particularly for union firms
- Storm work made the difference for many



#### Manufacturers

- Demand generally up across the board
- Supply chain challenges
  - Lead times
  - Raw material prices
  - Component shortages
- Productivity challenges due to COVID
- Higher volumes, lower margins, lots of headaches

You're not alone if you experienced flat to down revenue, lower productivity and a profit squeeze

## Do you remember when six million dollars....

B

.... seemed like a <u>BIG</u> number?



#### Congress has appropriated \$6 trillion of additional stimulus funding in 12 months

- **\$8B** Coronavirus Preparedness and Response Supplemental Appropriations Act (March 6, 2020)
- **\$19B** Families First Coronavirus Response Act (March 18, 2020)
- \$2.08T Coronavirus Aid, Relief, and Economic Security Act (the CARES Act) (March 27, 2020)
- \$483B Paycheck Protection Program and Health Care Enhancement Act (April 24, 2020)
- **\$902B** Deferred and reduced tax obligations (per above)
- \$900B Supplemental Appropriation (December 27, 2020)
- <u>\$1.97</u> COVID relief bill (March 6, 2021)
- \$6.3T Total (to date)

56N

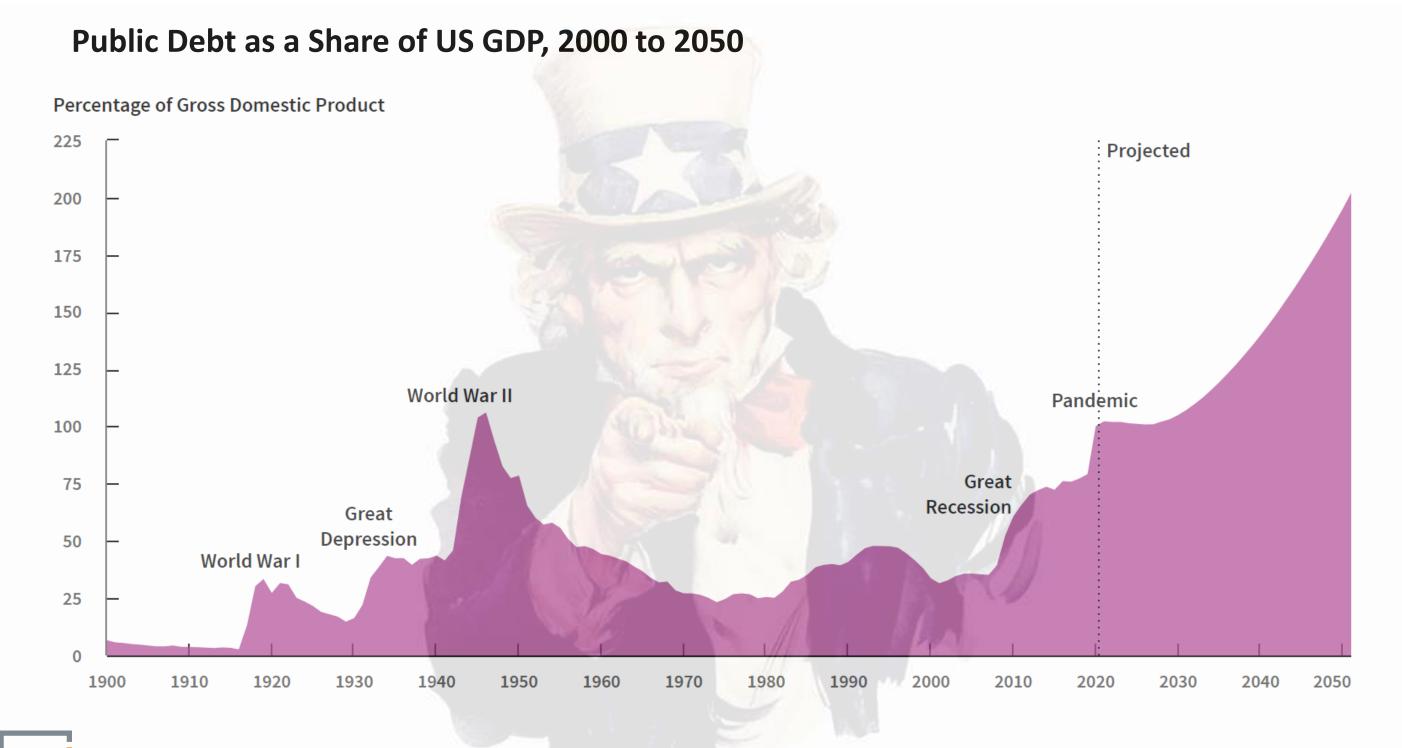


\$6 million takes annual growth 33.3% per year for 48 years to grow to \$6 trillion!

**\$6T** 

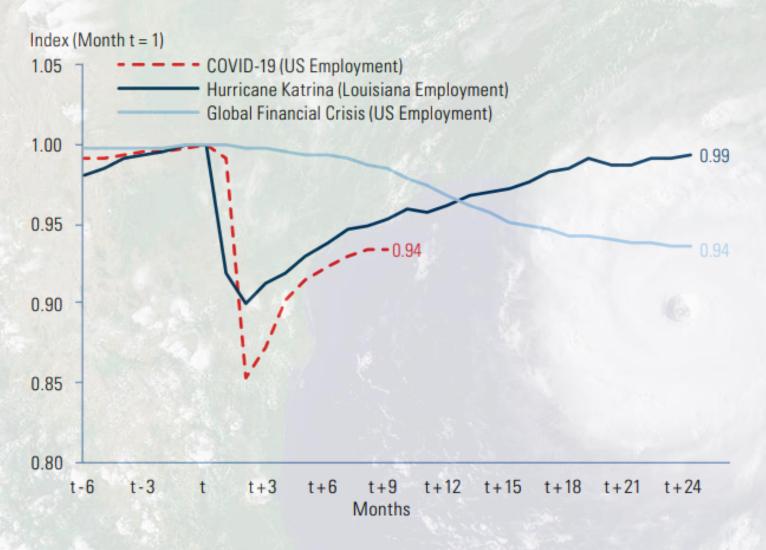
## A Federal Infrastructure Bill Could Be Next

- Democrats and Republicans both 'like' infrastructure
- Democrats are in general more inclined to fund it with federal dollars, and
  - Prefer greater federal regulation; and
  - The [Biden Administration] prioritizes social and green (clean) infrastructure bult using union labor;
  - Propose higher corporate and individual tax rates to help offset the spending
- Current elements of the Biden led plan Congress is likely to move forward with include:
  - \$2T or more of spending
  - Significant ties to clean energy and climate objectives (renewables, EVs, public transit)
  - Roads, bridges, schools, housing (new and retrofit), remediation and broadband
  - Increase in corporate tax rates



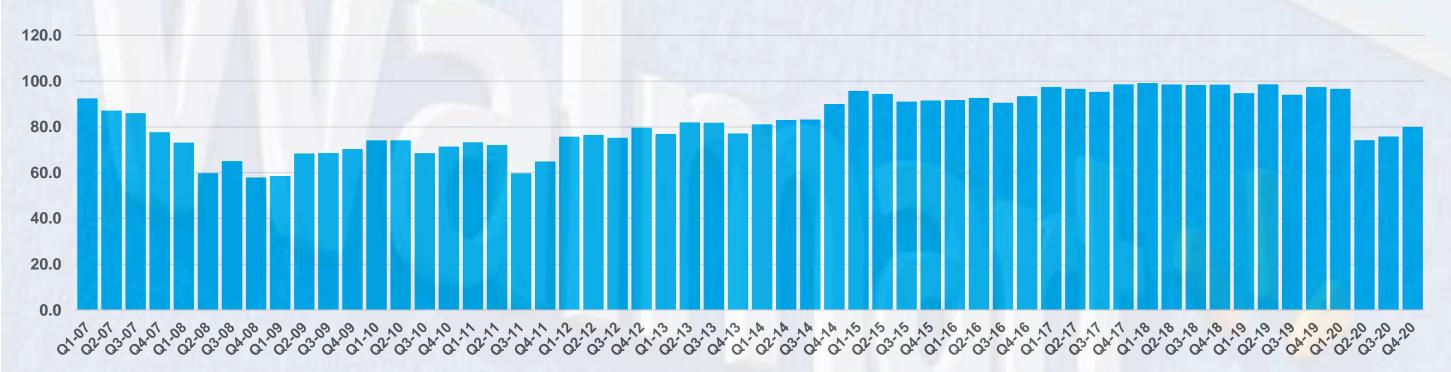
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## The Impact of COVID-19 on Employment Resembles a Nationwide Natural Disaster



Data through November 2020. Source: Investment Strategy Group, Haver Analytics.

#### **University of Michigan Consumer Sentiment**





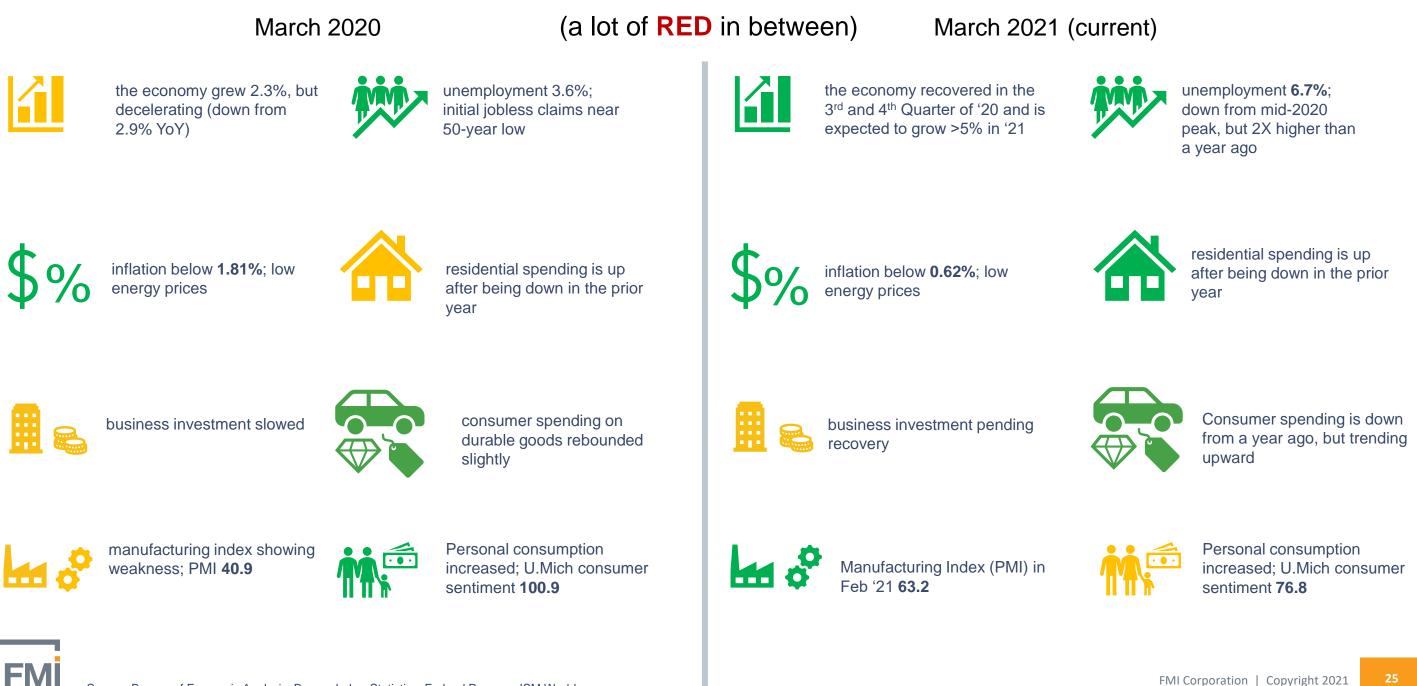
#### This about sums it up!

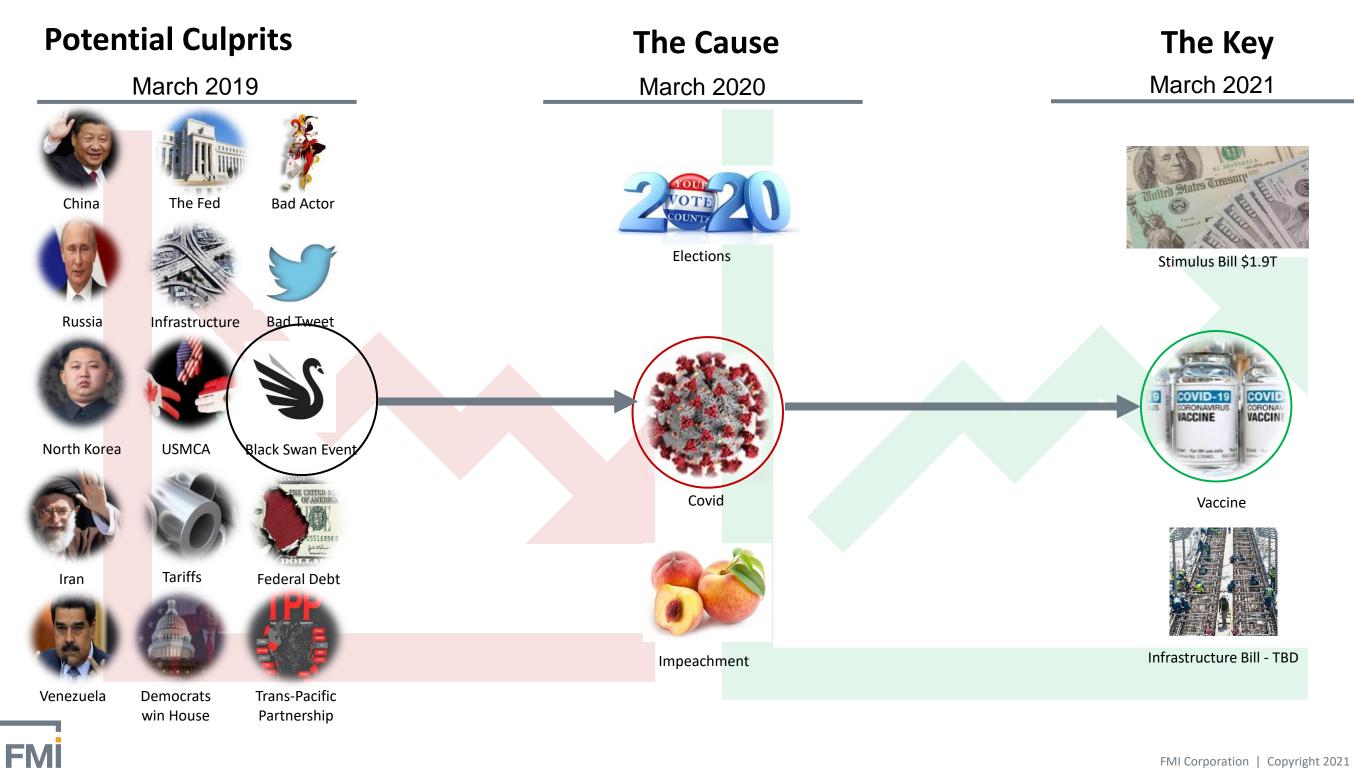


Near-Term Outlook



#### **Macro Drivers Last Year and Present**





#### **Progress of Vaccine and Rate of New Cases**

**UNITED STATES** 

Years of Age

% of Population ≥

Read more about how these data are reported.

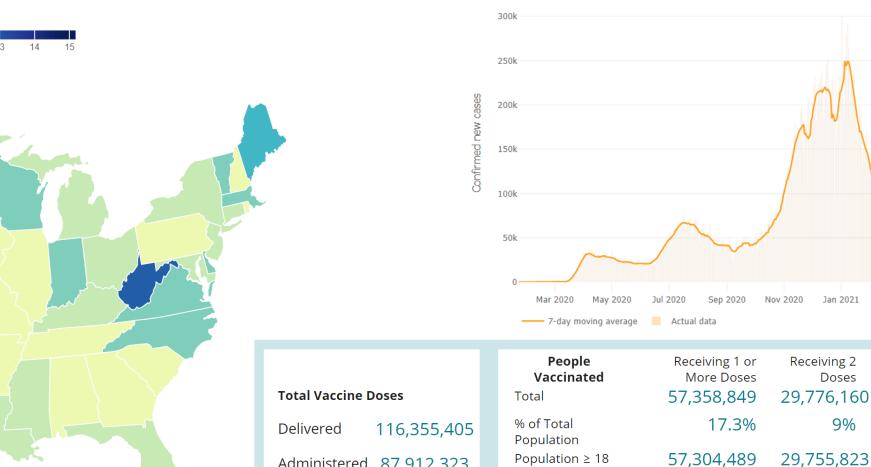
18 Years of Age

New cases confirmed each day (7-day-average)

DOWN

Mar 2021

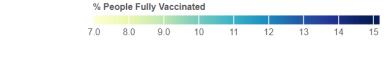
The first case of COVID-19 in United States was reported 408 days ago on 1/21/2020. Since then, the country has reported 28,890,034 cases, and 522,761 deaths.



Administered 87,912,323

Learn more about the distribution of

vaccines.





11.7%

22.5%

# The Digital Divide.... It's NOW or (possibly) never!

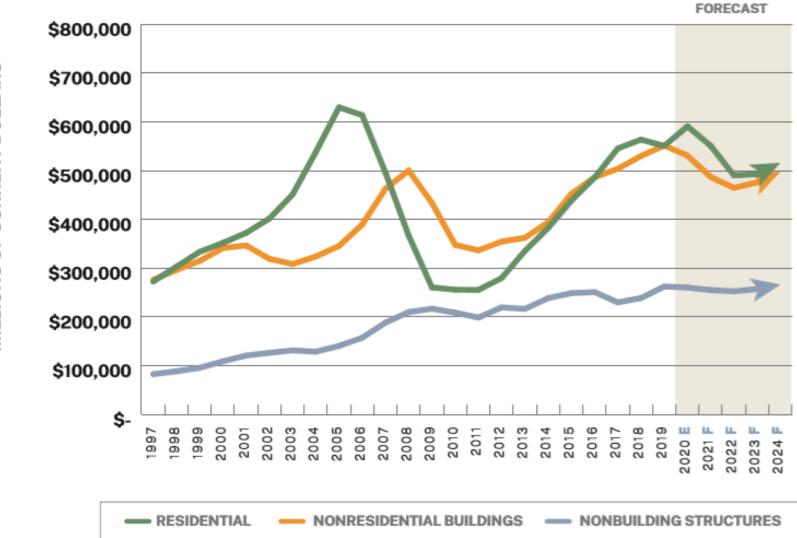
- Access and affordability have been issues since the beginning (mid-90's)
- Somewhere between 25 and 40 million households in the U.S. lack Broadband access
- FCC overstates access, ignores affordability, and sets a low bar for defining broadband
- Service providers overstate access, the FCC doesn't know, Federal and state efforts are splintered, industry lacks incentive
- Congress funded the Broadband Deployment Accuracy and Technological Availability (DATA) Act
  - \$24 million to develop accurate granular maps in 2021, plus \$9 million per year to maintain
  - In the Digital Opportunity Data Collection Order and Further NPRM, the Commission adopted a <u>crowdsourcing process</u> for fixed services to begin collecting public input on the accuracy of service providers' broadband deployment data.
- COVID-19 fallout has put a spotlight on lack of broadband access and affordability
- White House and both parties in Congress appear more united than ever to fund further deployment and have increased subsidies
- The Rural Digital Opportunity Fund auction \$9B to180 participants in 49 states and 5 million homes passed …
- Other responses to COVID have been targeted toward subsidizing schools and other low-income or at-risk populations

#### Dictionary

crowdsource: (verb) /'kroud\_sôrs/

To obtain information or input into a particular task or project) by enlisting the services of a large number of people, either paid or unpaid, <u>typically via the internet</u>.

#### Total Construction Spending Put in Place Estimated for the United States

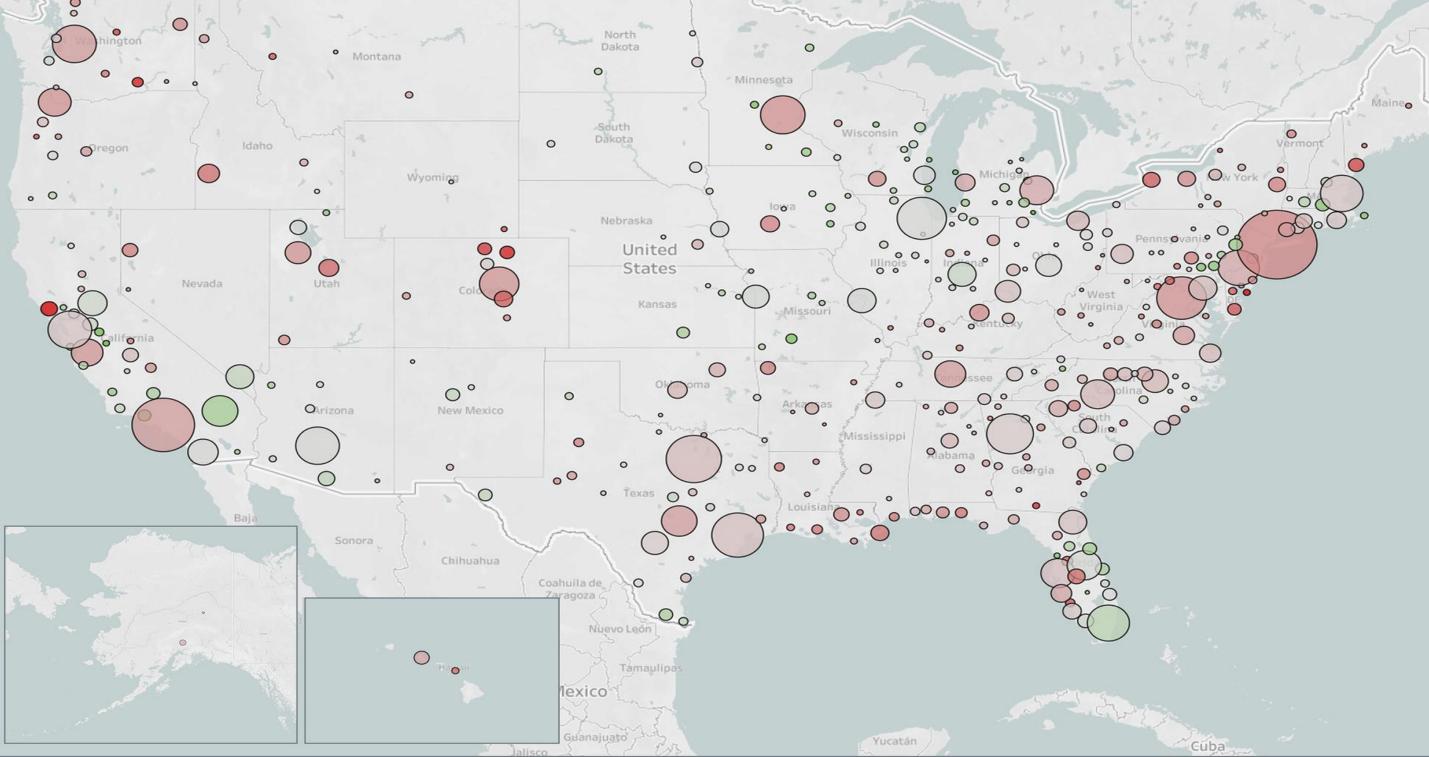


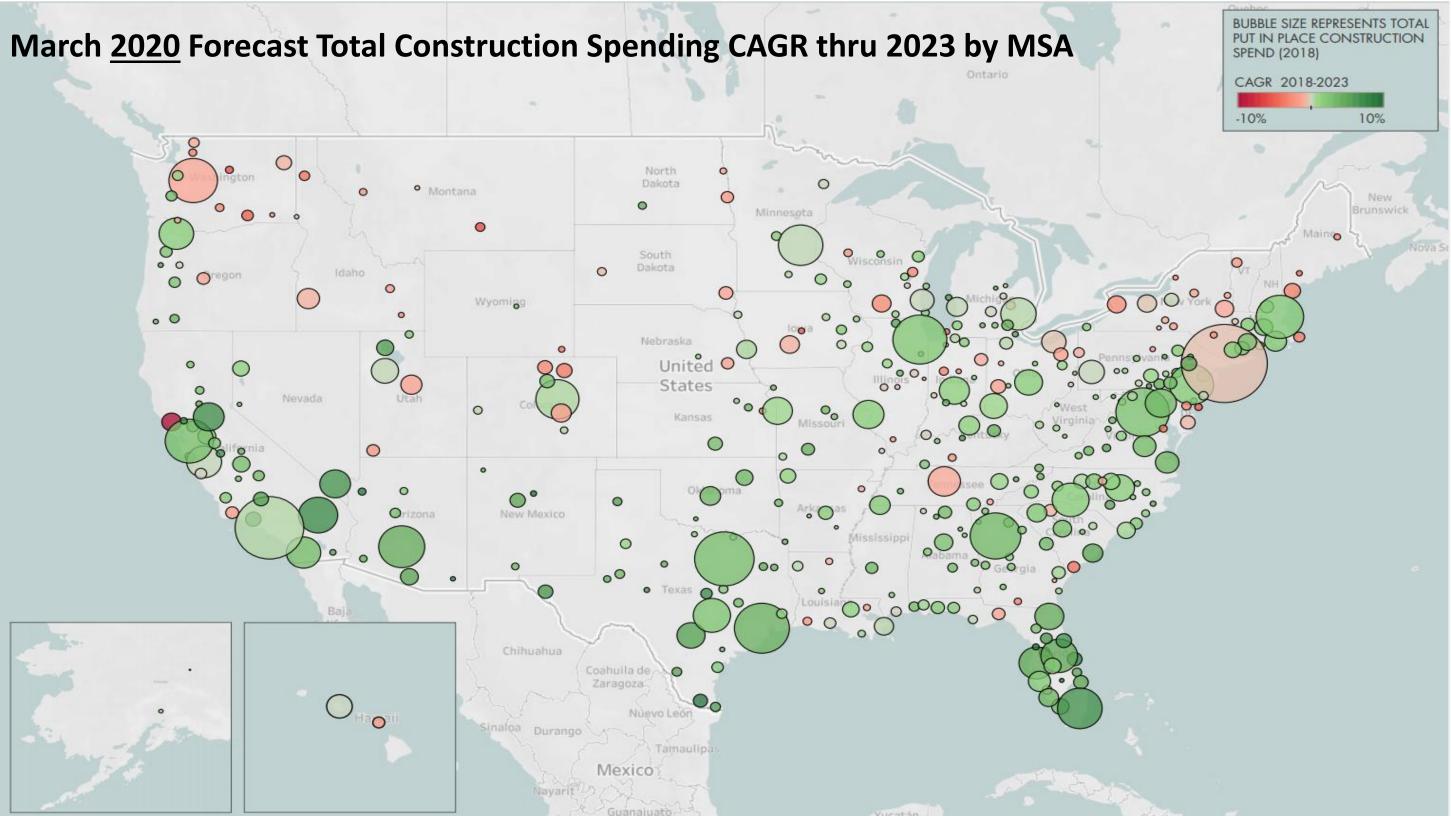
MILLIONS OF CURRENT DOLLARS



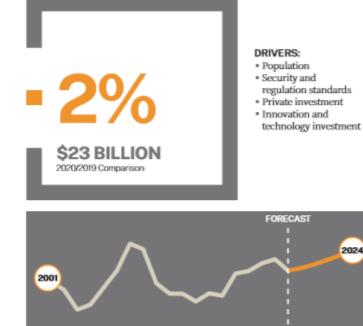
FMI Corporation | Copyright 2021

# March 2021 COVID-Revised Forecast Total Construction Spending CAGR thru 2024 by MSA





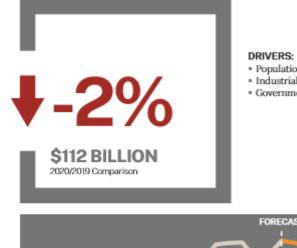
#### COMMUNICATION

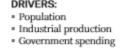


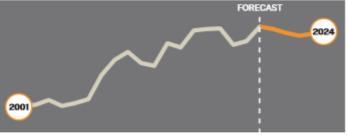
2020	STA	2%	\$23 B
2021	STA	3%	\$24 B
2022	STA	4%	\$24 B
2023	STA	4%	\$25 B
2024	STA	4%	\$26 B

2024

#### POWER

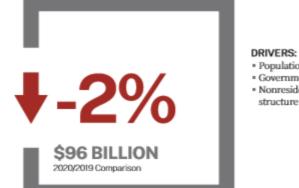






2020	DWN	<b>-2%</b>	\$112 B
2021	DWN	-3%	\$108 B
2022	DWN	-3%	\$105 B
2023	STA	2%	\$107 B
2024	STA	4%	\$111 B

#### HIGHWAY AND STREET



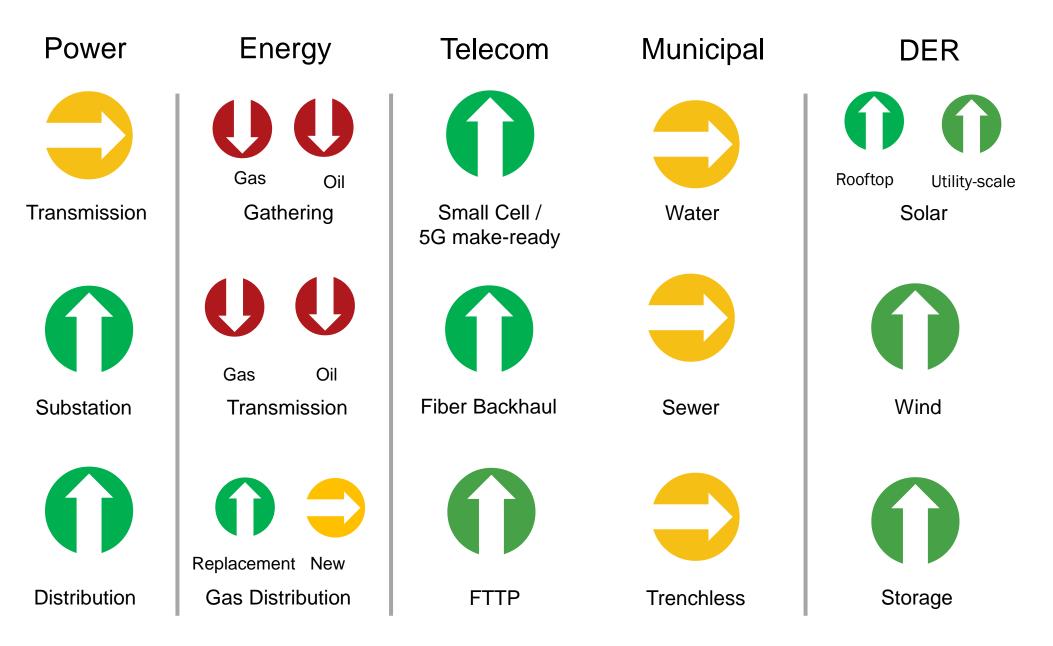


- Government spending
  Nonresidential
- structure investment



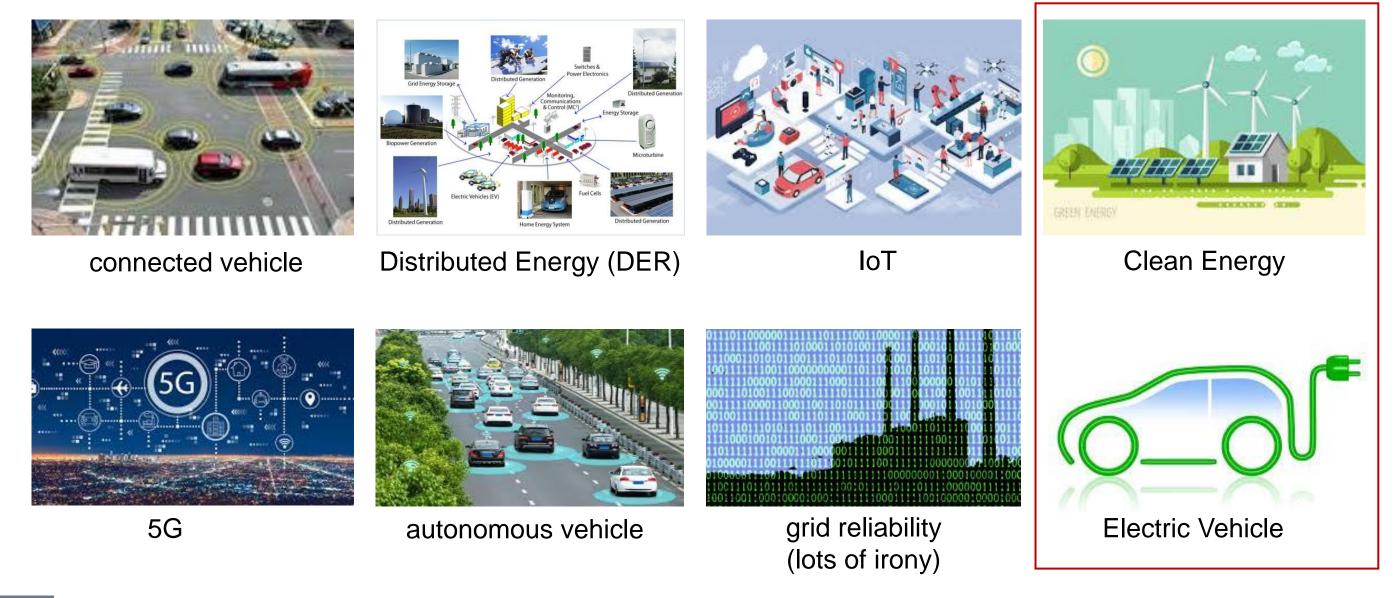
2020	DWN	<b>-2%</b>	\$96 B
2021	DWN	<b>-2%</b>	\$94 B
2022	STA	3%	\$96 B
2023	STA	4%	\$100 B
2024	STA	3%	\$103 B

## **Outlook in March 2021 re: Future of Utility Infrastructure**





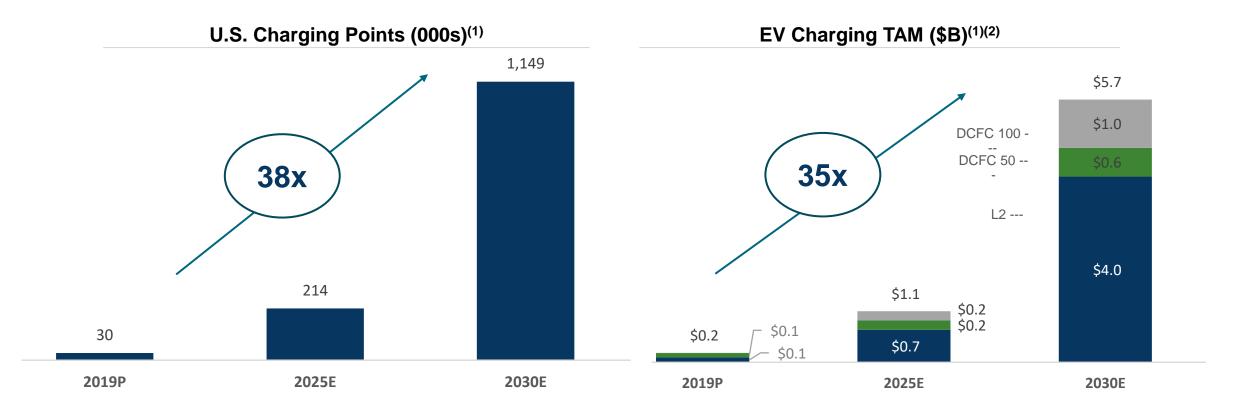
## **Drivers of Power and Communications Infrastructure Spending (2021)**





#### Forecast Market Growth for EV Charging Infrastructure and Services

A reliable network of fast charging infrastructure will be critical to support the rapidly expanding U.S. electric vehicle fleet. As the funding environment continues to pivot from dedicated "Government-mandated" dollars to privately-funded development programs, MaxGen EVI anticipates demand for its services to grow exponentially.



#### Adoption of EVs is creating a massive need for charging infrastructure...

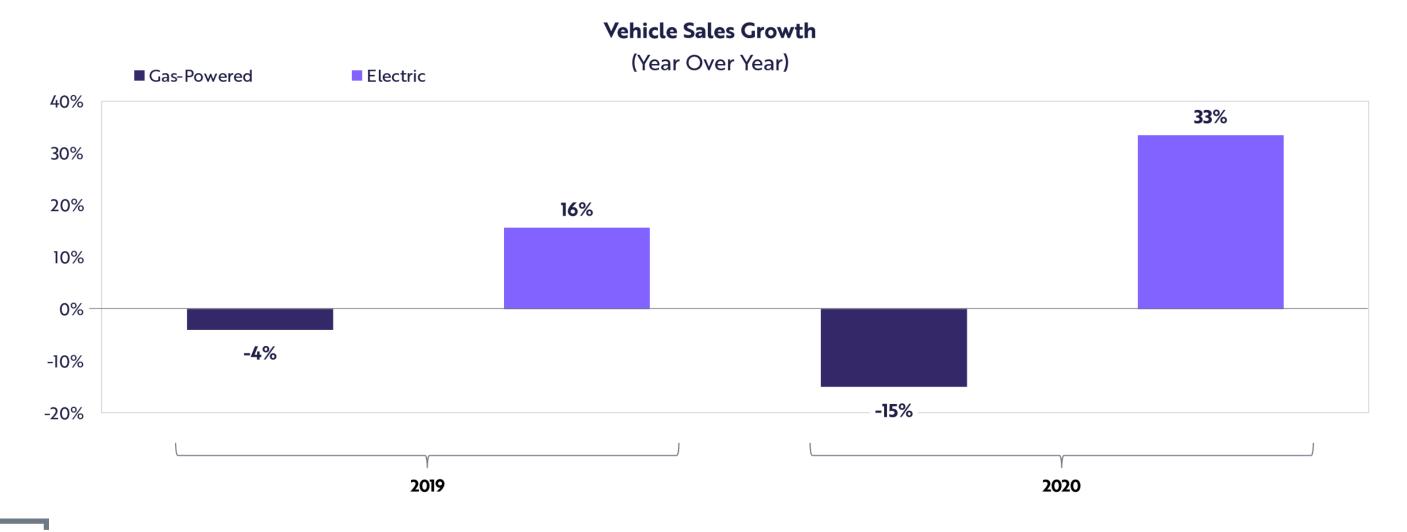
...and the services that support it...

(1): Assumes each charging point has two ports on average.

(2): Includes O&M services which make up a small portion of the total addressable market.

#### Electric Vehicle (EV) Sales Growth in Good Times and Bad...

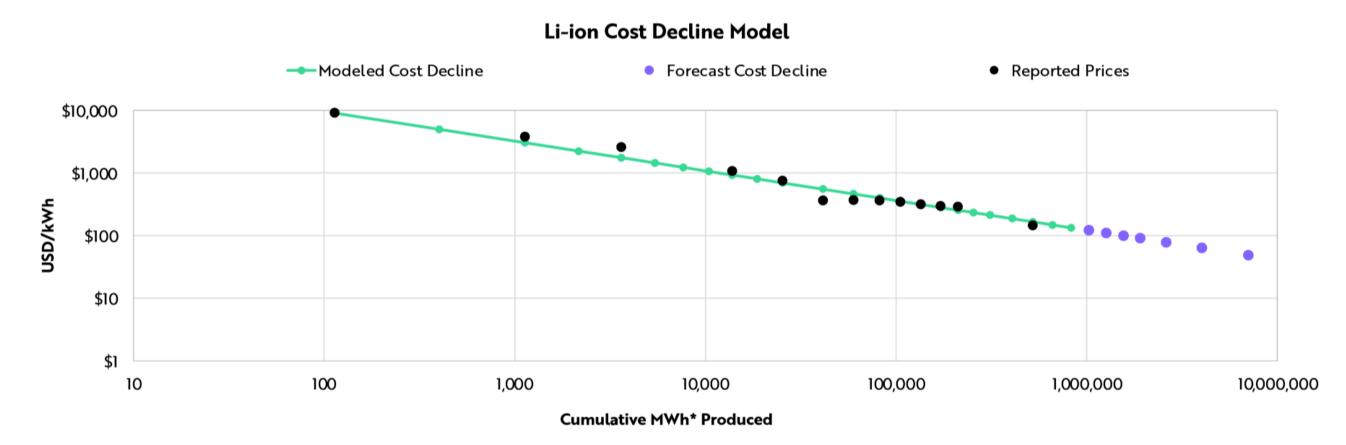
While sales of gas-powered vehicles decreased during the recent COVID-19 pandemic, EV sales continued to increase globally.



Source: ARK Investment Management

### Wright's Law Has Modeled The Decline In Battery Costs Successfully

According to Wright's Law, for every cumulative doubling of units produced, battery cell costs will fall by 28%. The largest cost component of an EV is its battery so these cost declines are critical to reaching price parity with gas-powered vehicles.



\*A MWh is 1,000 kWh.

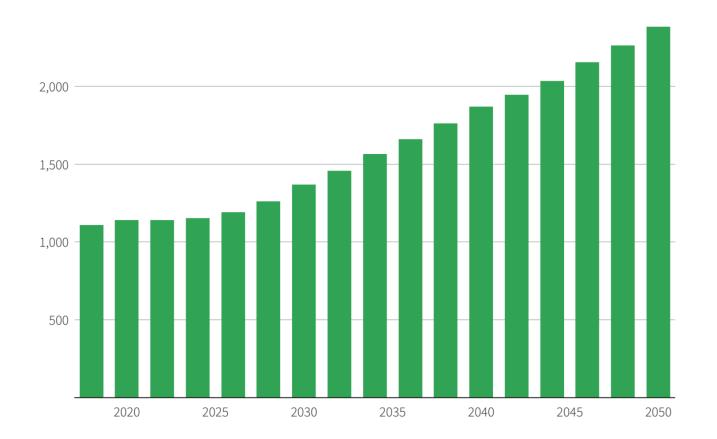
Forecasts are inherently limited and cannot be relied upon.

Source: ARK Investment Management LLC, 2020, based on data sourced from: Avicenne Energy, International Energy Agency (IEA), and Bloomberg New Energy Finance (BNEF).

### **If Regulation Drives EV Conversion**

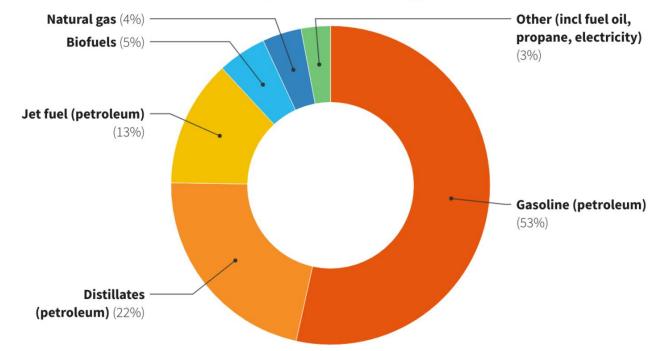
#### Estimated U.S. capacity if 66% of all cars are EVs by 2050

Gigawatt electric capacity needs to double to power 186 million light-duty EVs in 2050



### Fossil fuels power the U.S. transportation sector

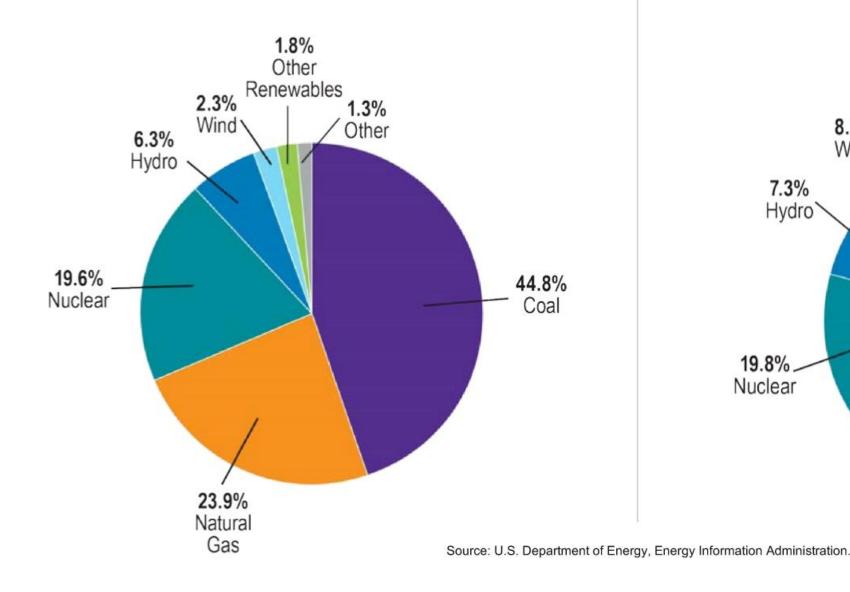
In 2019, more than 90% of the U.S. transportation sector's energy was sourced from fossil fuels





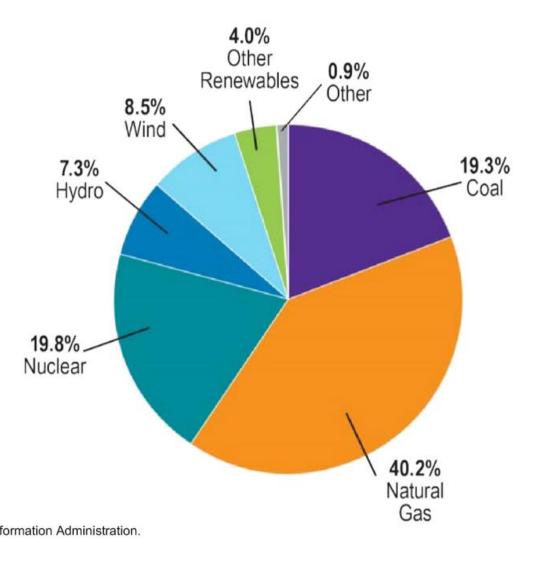
### Natural Gas Has Been the Driving Change in Fuel Mix, But Today is Being Challenged

### 2010 National Energy Resource Mix



FM





### **Thank You PCCA!**



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Dan Shumate dshumate@fminet.com (919) 889-5394



William Rhem wrhem@fminet.com (919) 785-9225



Spending Forecast Summary by Segment



### **Residential Construction Put-in-Place**

#### SINGLE-FAMILY RESIDENTIAL



UP

DWN

DWN

**STA** 

UP

2001

2020

2021

2022

2023

2024



2024

\$302 B

\$287 B

\$256 B

\$258 B

\$270 B

Income

Housing starts

Housing permits

FORECAST

8%

-5%

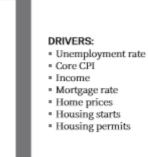
-11%

1%

5%

# \$85 BILLION 2020/2019 Comparison

MULTIFAMILY RESIDENTIAL



## FORECAST 2024 2001

2020	STA	0%	\$85 B
2021	DWN	-12%	\$75 B
2022	DWN	-10%	\$67 B
2023	STA	1%	\$68 B
2024	UP	7%	\$73 B

#### **IMPROVEMENTS**

2020/2019 Comparison



#### DRIVERS:

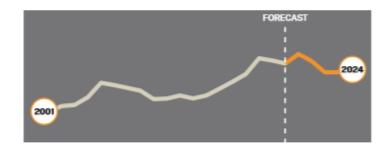
 Unemployment rate Core CPI

Income

- Mortgage rate
- Home prices

Housing starts

Housing permits



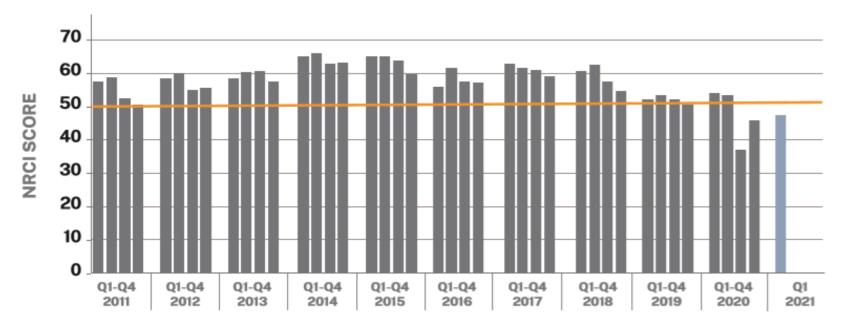
2020	UP	10%	\$203 B
2021	DWN	-7%	\$189 B
2022	DWN	-12%	\$167 B
2023	STA	0%	\$168 B
2024	STA	4%	\$174 B

### Nonresidential Construction Index (NRCI) Q1 2011 to Q1 2021

(Scores above 50 indicate expansion; scores below 50 indicate contraction)

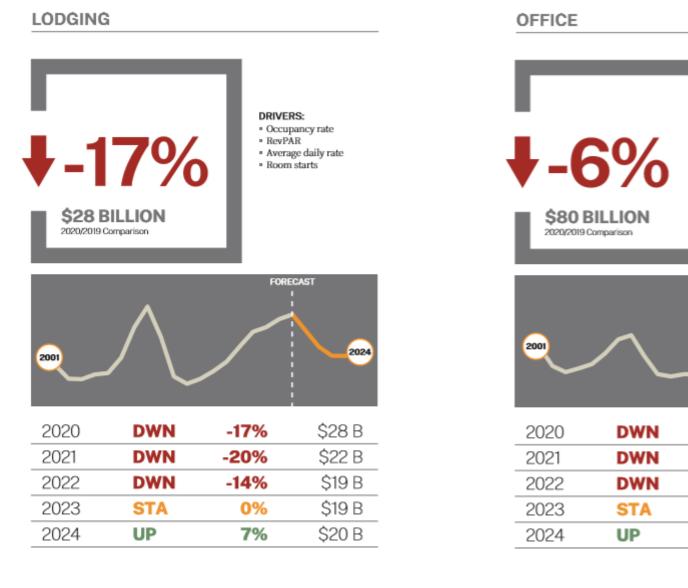
NRCI scores are based on a diffusion index where scores above 50 indicate improving or expanding industry conditions, a score of 50 represents conditions remaining the same, and a score below 50 signals worse conditions than last quarter (or contraction).





The data in the NRCI is presented as a sampling of construction industry executives voluntarily serving as panelists for this FMI survey. Responses are based on their experience and opinions, and the analysis is based on FMI's interpretation of the aggregated results.

### **NonResidential Construction Put-in-Place**



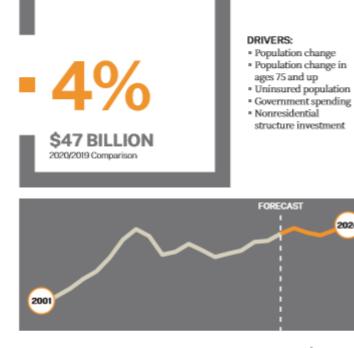
**FM** 

#### COMMERCIAL DRIVERS: DRIVERS: Retail sales Office vacancy rate Unemployment rate = CPI Income Home prices Housing starts Housing prices \$81 BILLION 2020/2019 Comparison FORECAST FORECAST 2024 2024 2001 2020 \$81 B \$80 B **STA** 1% -6% 2021 DWN \$73 B \$69 B -10% -14% \$66 B 2022 DWN -10% \$61 B -11% \$66 B \$62 B 2023 **STA** 1% 1% \$66 B 2024 UP 7% \$71 B 6%

### NonResidential Construction Put-in-Place (cont'd)

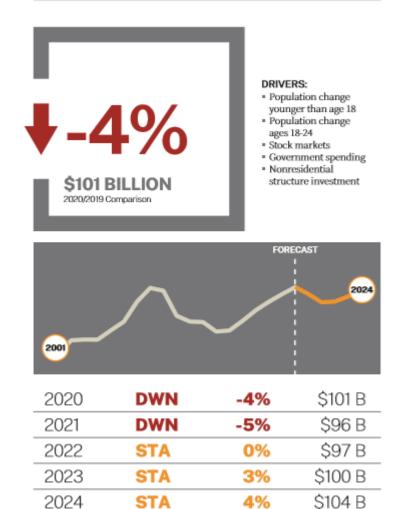
2024



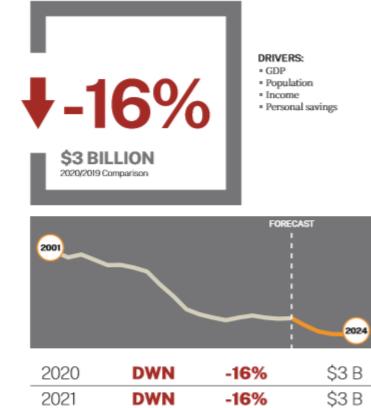


2020	STA	4%	\$47 B
2021	DWN	-3%	\$46 B
2022	DWN	-2%	\$45 B
2023	STA	3%	\$47 B
2024	STA	3%	\$48 B

#### EDUCATIONAL



#### RELIGIOUS



2021	DWN	-16%	\$3 B
2022	DWN	-8%	\$2 B
2023	DWN	-1%	\$2 B
2024	STA	4%	\$2 B

### NonResidential Construction Put-in-Place (cont'd)

#### PUBLIC SAFETY



**FM** 

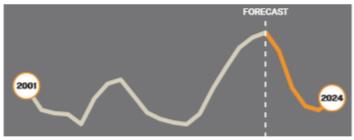
DRIVERS: Population Government spending Incarceration rate Nonresidential structure investment



2021	DWN	-2%	\$12 B
2022	DWN	-6%	\$11 B
2023	DWN	-2%	\$11 B
2024	STA	4%	\$11 B

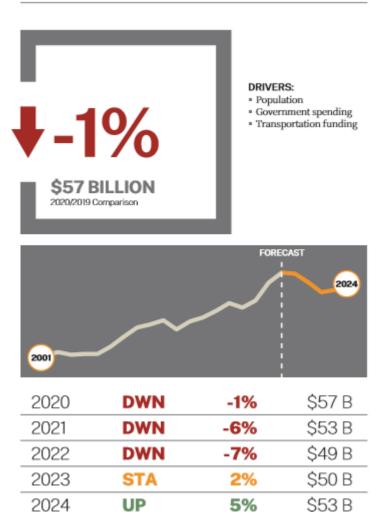
#### AMUSEMENT AND RECREATION





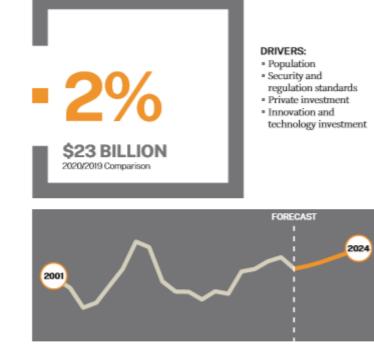
2020	DWN	<b>-9%</b>	\$26 B
2021	DWN	-21%	\$21 B
2022	DWN	-13%	\$18 B
2023	DWN	-3%	\$17 B
2024	UP	8%	\$19 B

#### TRANSPORTATION



### NonResidential Construction Put-in-Place (cont'd)

#### COMMUNICATION

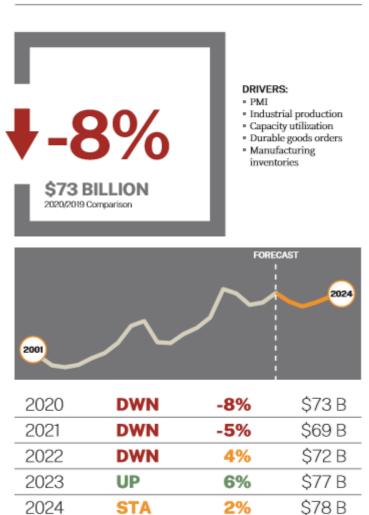


2020	STA	2%	\$23 B
2021	STA	3%	\$24 B
2022	STA	4%	\$24 B
2023	STA	4%	\$25 B
2024	STA	4%	\$26 B

#### MANUFACTURING

2024

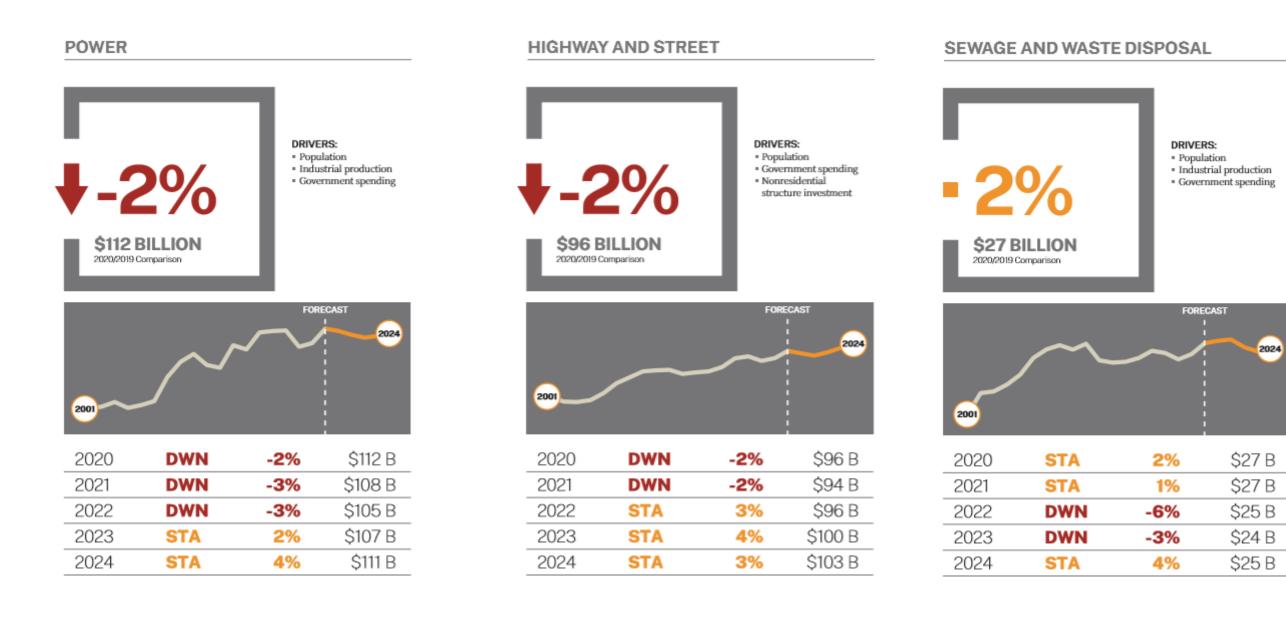
**STA** 



2%

### **NonBuilding Structures Construction Put-in-Place**

**FM** 

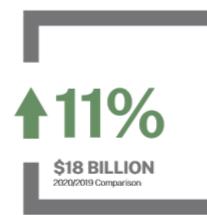


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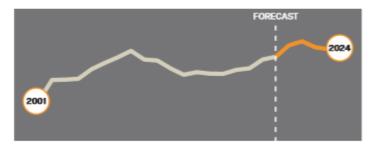
48

### NonBuilding Structures Construction Put-in-Place (cont'd)

#### WATER SUPPLY







2020	UP	11%	\$18 B
2021	STA	3%	\$18 B
2022	DWN	-5%	\$17 B
2023	DWN	-2%	\$17 B
2024	STA	1%	\$17 B

#### CONSERVATION AND DEVELOPMENT

