

5G and Small Cells



NECPUC

June 3, 2019



CTIA Represents the U.S. Wireless Industry

Members Include:

-  Wireless carriers
-  Device manufacturers
-  Suppliers
-  App companies

5G Will Satisfy Consumers' Growing Data Usage

4G MADE NETWORKS FASTER AND OUR LIVES EASIER

5G WILL BE A MASSIVE LEAP



5G Benefits And Wireless Network Investment



3M

NEW JOBS



\$500B

CONTRIBUTION
TO GDP



\$275B

NEW WIRELESS
INVESTMENT



\$160B

SMART CITY BENEFITS
AND SAVINGS

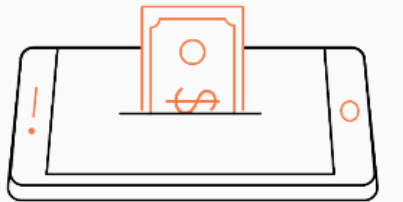
"How 5G Can Help Municipalities Become Vibrant Smart Cities," Accenture Strategy, Jan 12, 2017, available at: https://newsroom.accenture.com/content/1101/files/Accenture_5G-Municipalities-Become-Smart-Cities.pdf

5G Economic Benefits: New England

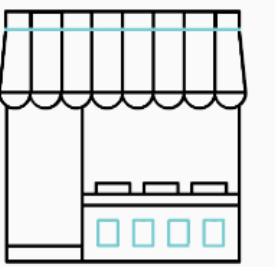
- **Boston, MA**
 - 6,395 jobs created
 - \$305 million in Smart City benefits
 - \$1.04 billion in estimated GDP growth
- **Burlington, VT**
 - 394 jobs created
 - \$12.6 million in Smart City benefits
 - \$64 million in estimated GDP growth
- **Hartford, CT**
 - 1,223 jobs created
 - \$75.6 million in Smart City benefits
 - \$199 million in estimated GDP growth
- **Manchester, NH**
 - 1,038 jobs created
 - \$64.1 million in Smart City benefits
 - \$169 million in estimated GDP growth
- **Portland, ME**
 - 624 jobs created
 - \$38.6 million in Smart City benefits
 - \$102 million in estimated GDP growth
- **Providence, RI**
 - Over x jobs created
 - x million in Smart City benefits
 - x million in estimated GDP growth

Improving Communities Across America,
from small towns to big cities.

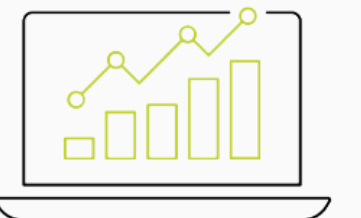
✓ \$275B New Wireless Investment



✓ 3 Million New American Jobs

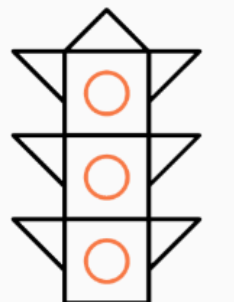


✓ \$500B Contribution to GDP

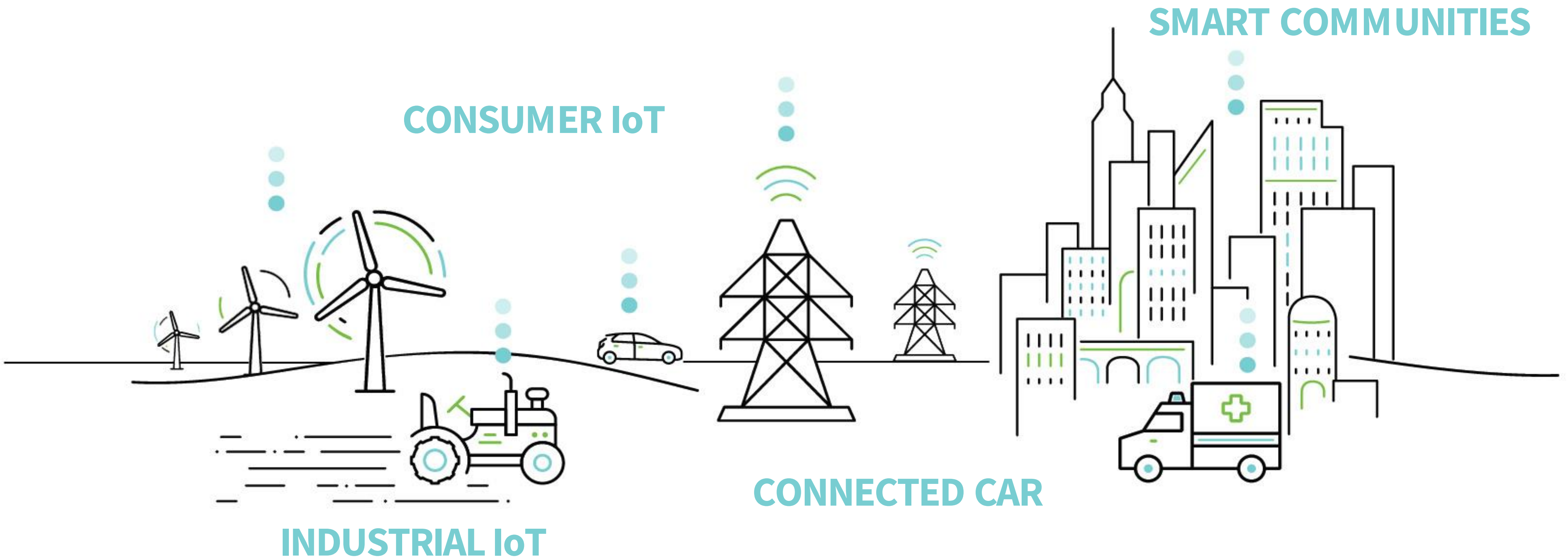


✓ \$160B in Smart Community
Benefits & Savings

by reducing energy usage, decreasing traffic
congestion and reducing fuel costs



5G Connecting Everything



Health and Safety



HEALTH CARE

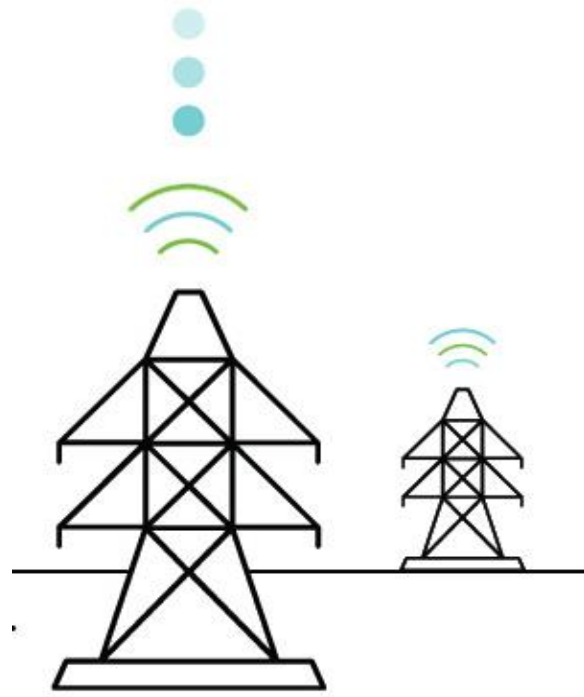
Wireless connectivity will save lives and \$305B per year in health costs.



PUBLIC SAFETY

5G can help save lives. A 60 second improvement in first responder response time translates to a reduction of 8% in mortality.

Smart Communities and Connected Cars



SMART GRIDS

Wireless-enabled energy distribution can help save \$1.3T



AUTONOMOUS CARS

Wireless-powered self-driving cars could save over **20,000 lives**, and nearly \$450B, each year.

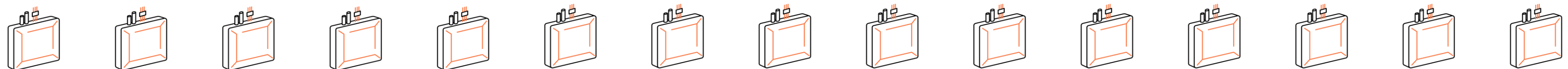
Tomorrow's Infrastructure

WHAT IS NEEDED

●●● Total towers (1983 – today) **150,000 +/-**



●●● Small cells needed by 2023 **over 450,000**



Small Cell Examples

OVER PRIMARY AND SECONDARY ELECTRIC



Small Cells

In Town



National 5G Strategy

Key Public Policies to Ensure Continued U.S. Leadership

- **Five-year schedule of spectrum auctions**
- **Free market leadership in 5G development**
- **Modernized procedures and policies**



Jackie McCarthy

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LEARN MORE AT [CTIA.ORG](https://www.ctia.org)