



How Robust Safety Outreach Can Help Address Community Inequities

Integrating risk analysis, outreach metrics,
and program design

May 17, 2022

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Culver Company: Experts in strategic planning for utility public safety

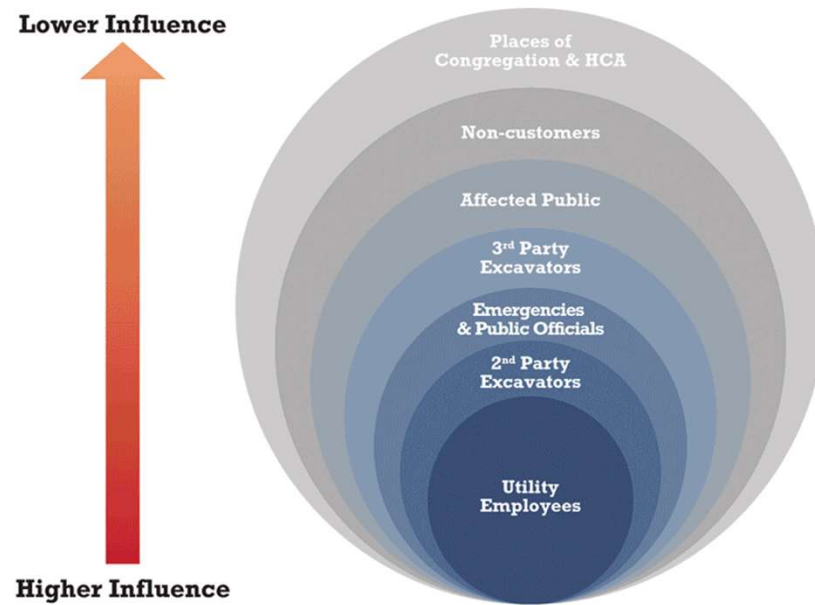
Culver Company's strategy framework for structuring and continuously improving your utility public safety awareness programs includes:

- Educational products to meet all utility sizes
- Public safety awareness plan review
- Utility public safety awareness program design, implementation, evaluation, & refinement
- Primary research on program effectiveness (national benchmarks and company baseline)
- Public safety risk assessment and tactical solutions to fill gaps
- Data analytics
- Litigation and regulatory support
- Risk management reporting



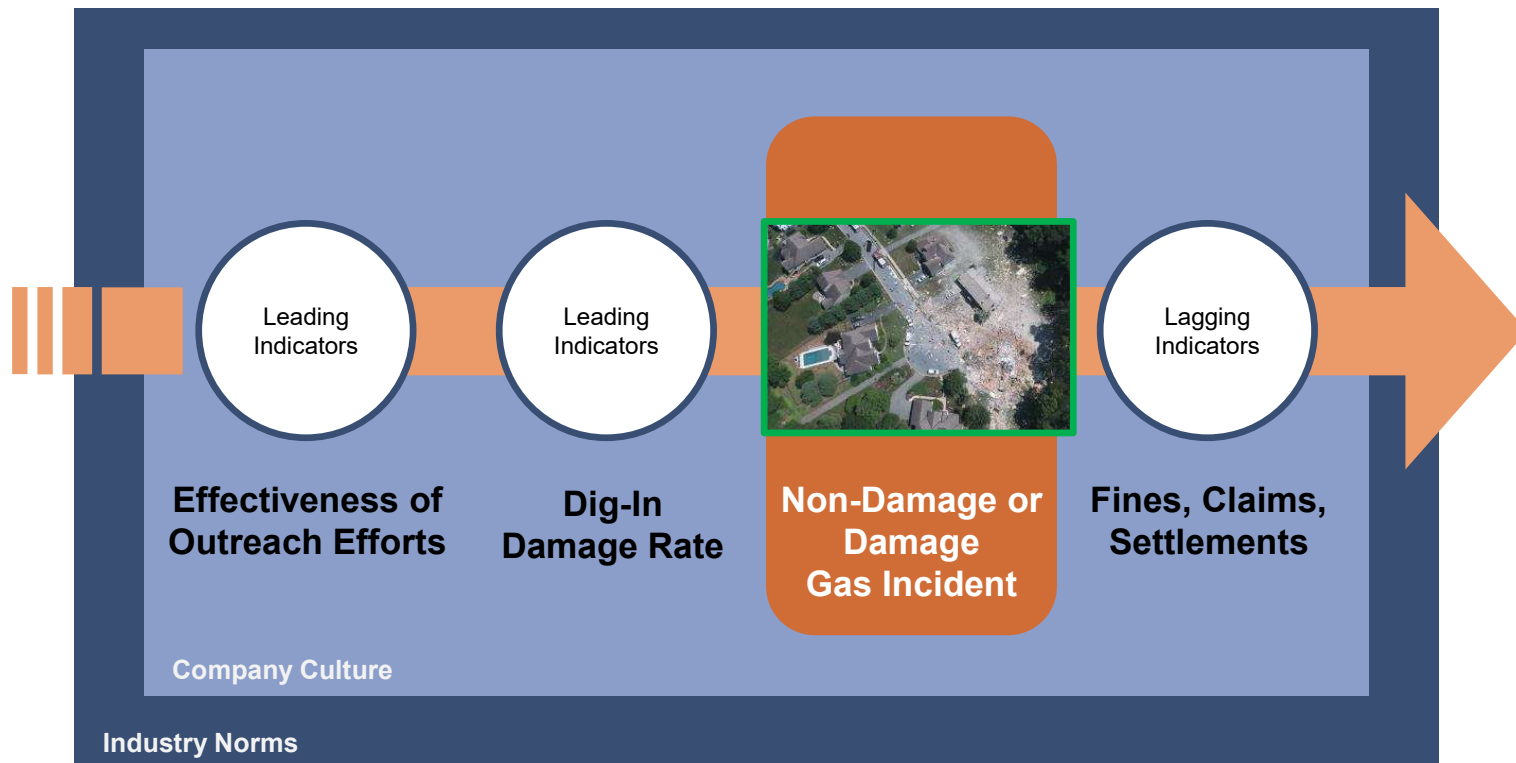
Understanding The Audience

Knowing the target audience and developing programs based on risk and influence



Measure What Matters

Investing in impact-based leading indicators can help utilities prevent incidents

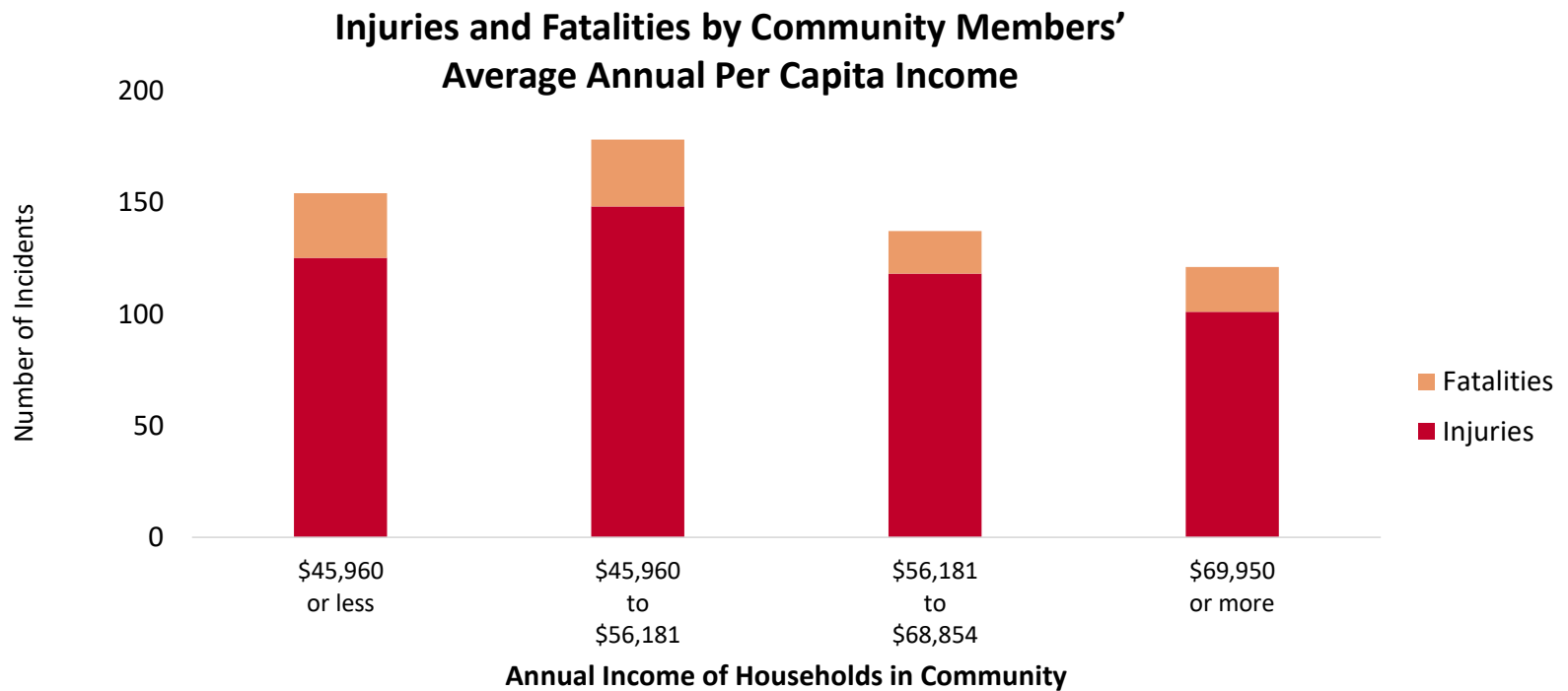


Robust public safety outreach programs meet or exceed regulatory requirements, incorporate best practices, and identify and prioritize emerging risks



Public Safety Approach in Action: Schools

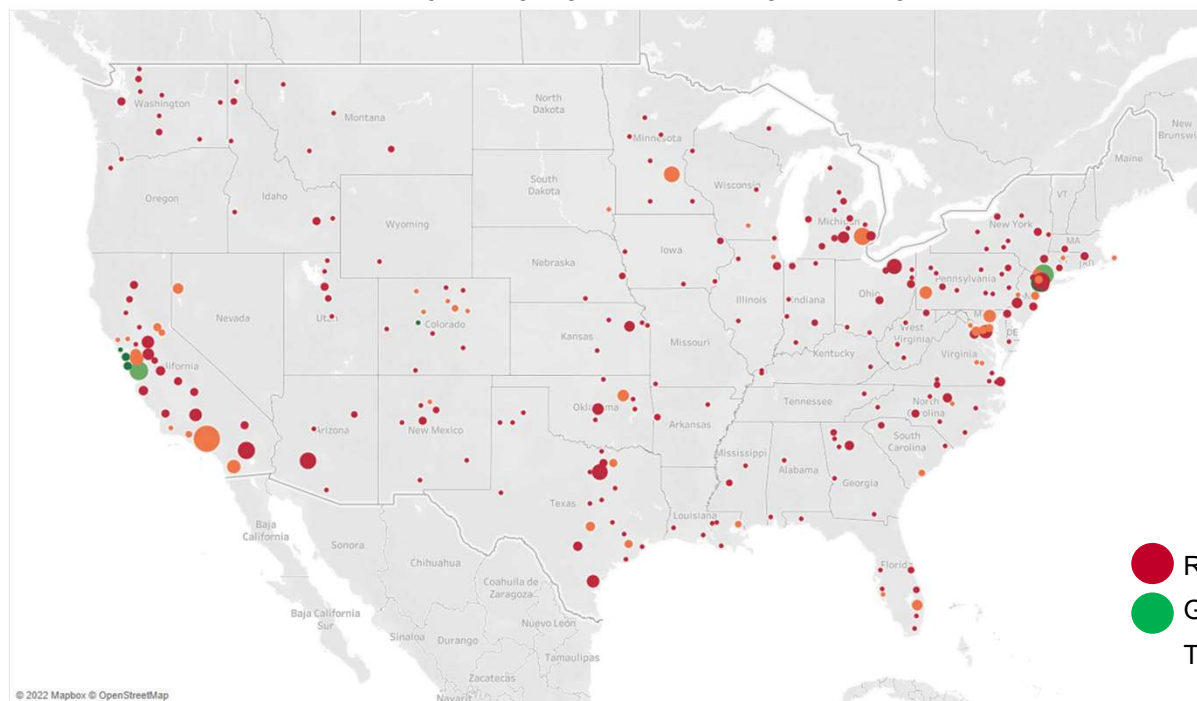
Communities in citizens' incomes fall below average have incurred more natural gas incidents



Bureau of Economic Analysis within the U.S. Department of Commerce provided us with Per Capita Income for each county in the U.S. For our analysis we used 2019 income data. The Pipeline and Hazardous Materials Safety Administration within the U.S. Department of Transportation provided us with gas incident information from 2010 to 2020 by county and ZIP code.

The inequity exists nationwide, with lower-income communities across the U.S. incurring more incidents

Incident Frequency by Community Per Capita Income



Higher-income communities had a 26% lower density of leaks than lower-income communities
Environmental Science and Technology Journal
(May 2022)

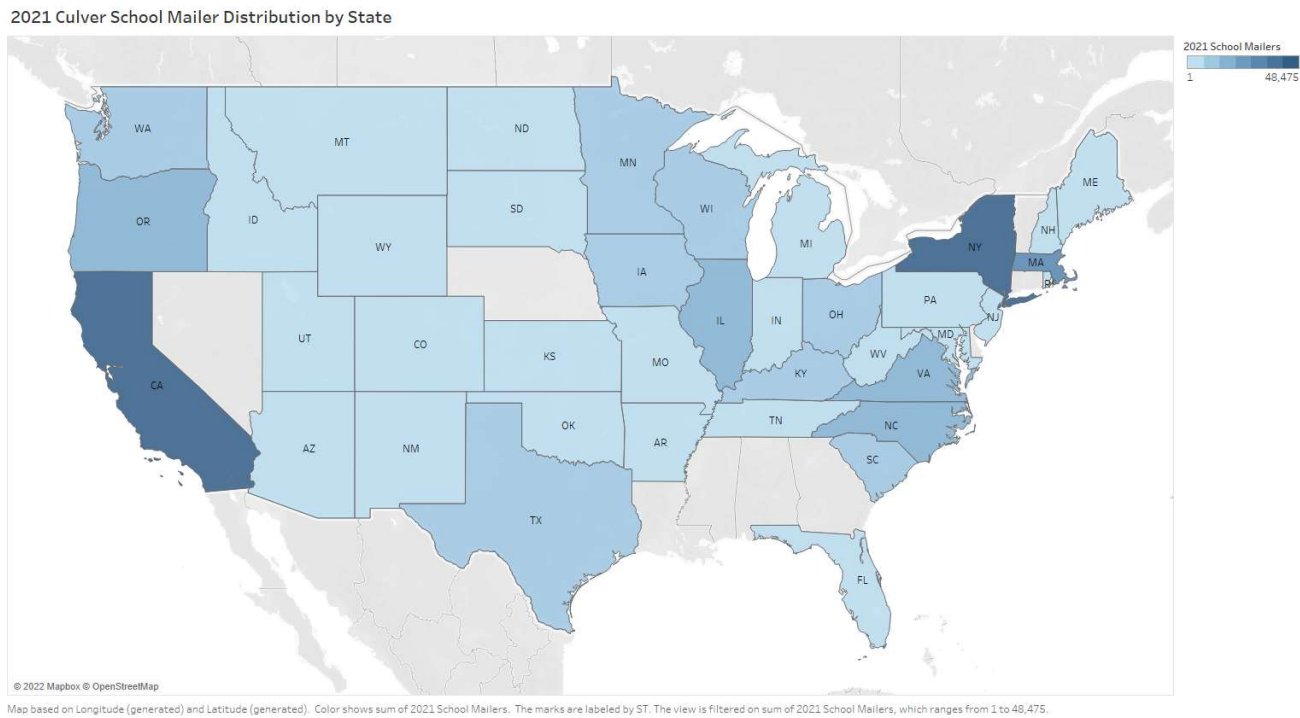
- Red dots are lower income
- Green dots are higher income
- The larger the dot, the higher the incident frequency

© 2022 Mapbox © OpenStreetMap
Map based on Longitude (generated) and Latitude (generated). Color shows average of 2019 Per Capita Income. Size shows count of ZIPs(2). Details are shown for County.

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School Case Study

Culver's school program is comprehensive, spanning much of the U.S. In 2021, Culver delivered 317,867 school educational mailers to teachers nationwide

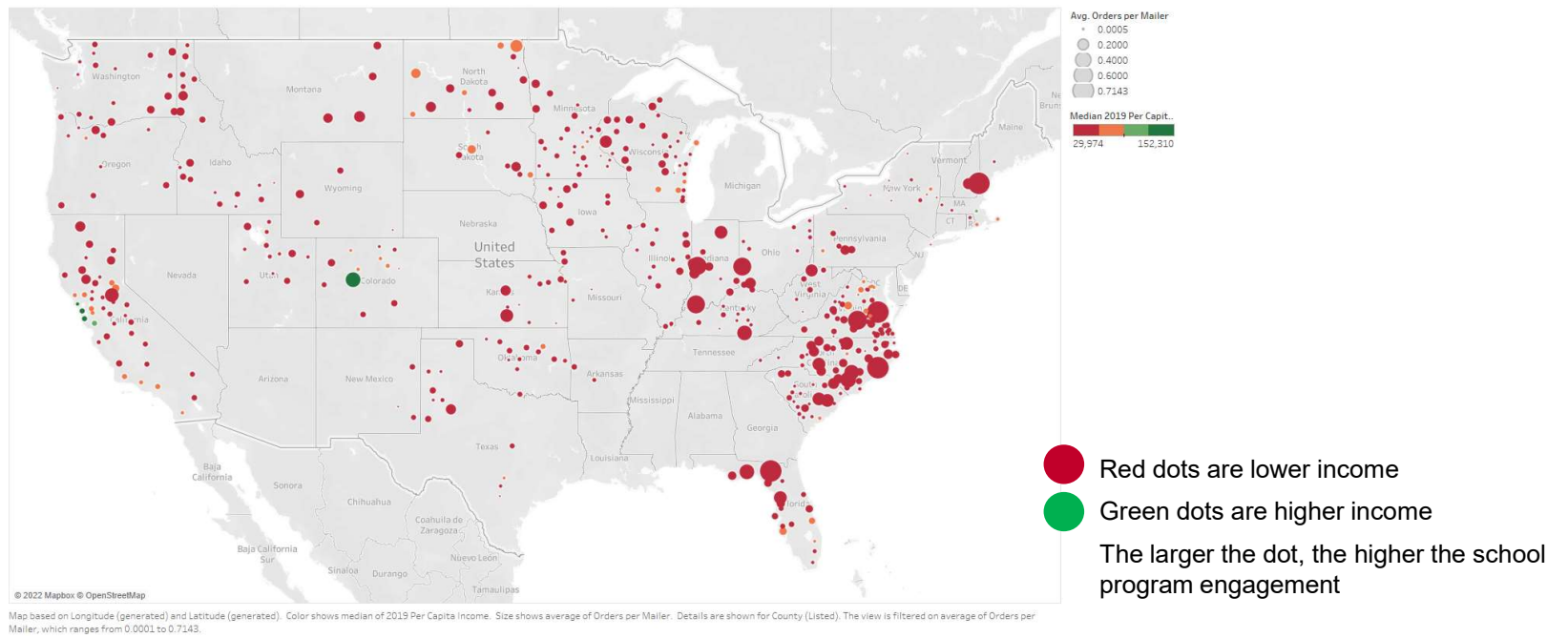


Culver Company School Program Data, 2021

School Case Study

In 2021, we received 7,759 orders and distributed over 1.7M safety educational booklets;
Lower-income communities demonstrated higher engagement

2021 Culver School Order Engagement by County with Income

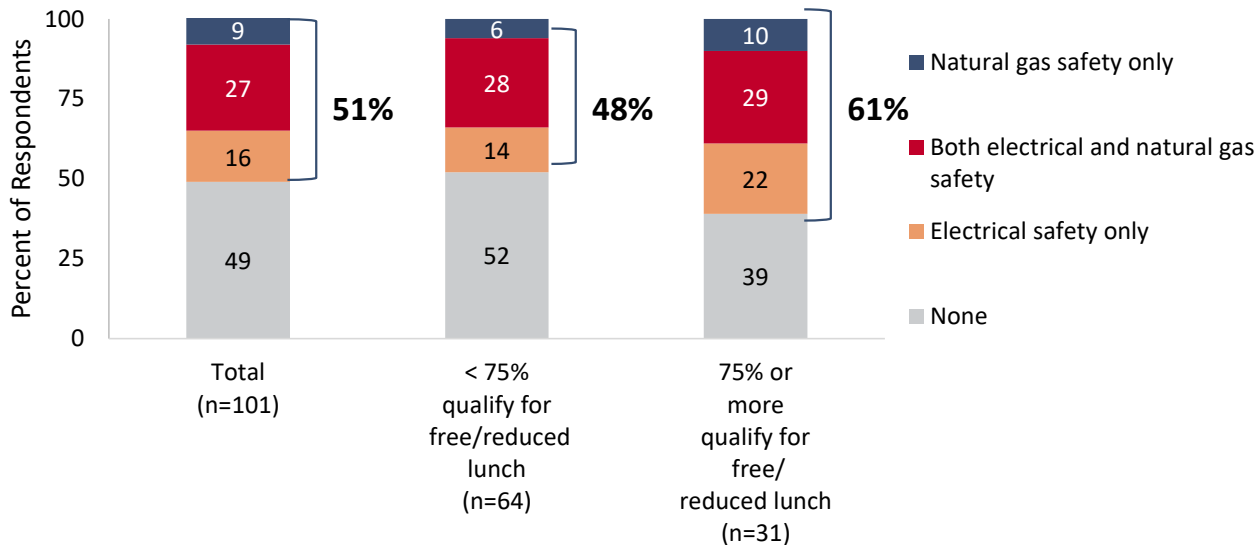


Culver Company School Program Data, 2021

Bureau of Economic Analysis within the U.S. Department of Commerce provided us with Per Capita Income for each county in the U.S. For our analysis we used 2019 income data

Our NextGen Research conducted with teachers nationwide provides insights into how we can equitably engage communities

Safety Topics Taught in Their Schools



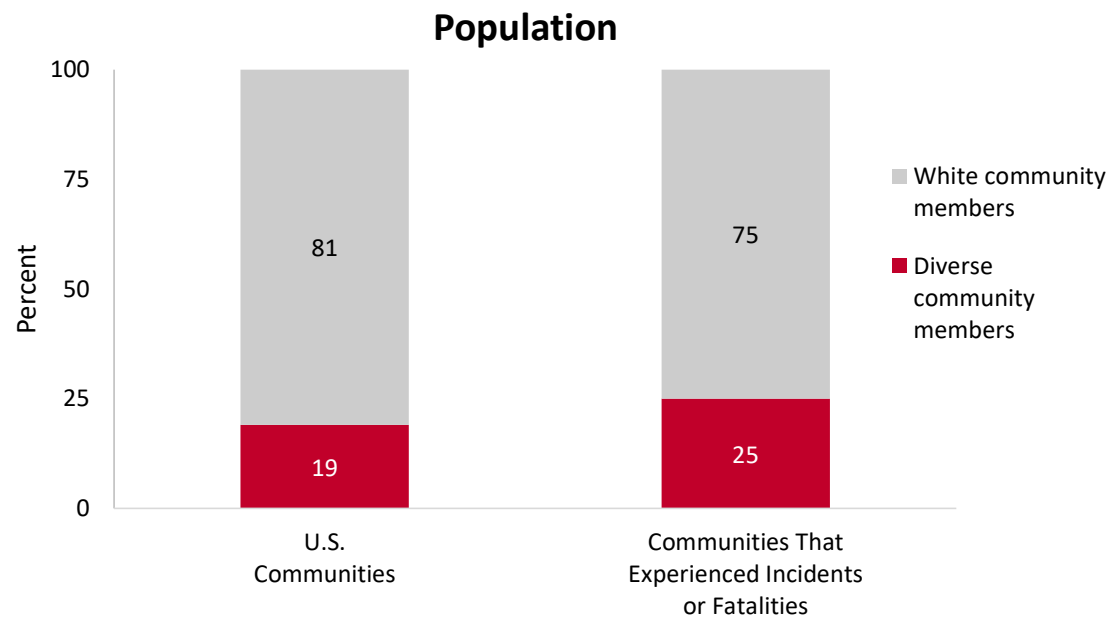
- Overall, about half of schools teach safety
- Directionally, schools with a higher percentage of students receiving free/reduced lunch are more likely to teach energy safety (61%)

Which of the following safety topics, if any, are currently taught at your school?

Source: Culver Company NextGen Educator Research, 2022

Public Safety Approach in Action: Contractor

Like income, a link exists between community diversity and gas incidents. The U.S. Census reports that 19% of community members are diverse. However, this is higher among communities that have experienced a natural gas incident (25%)

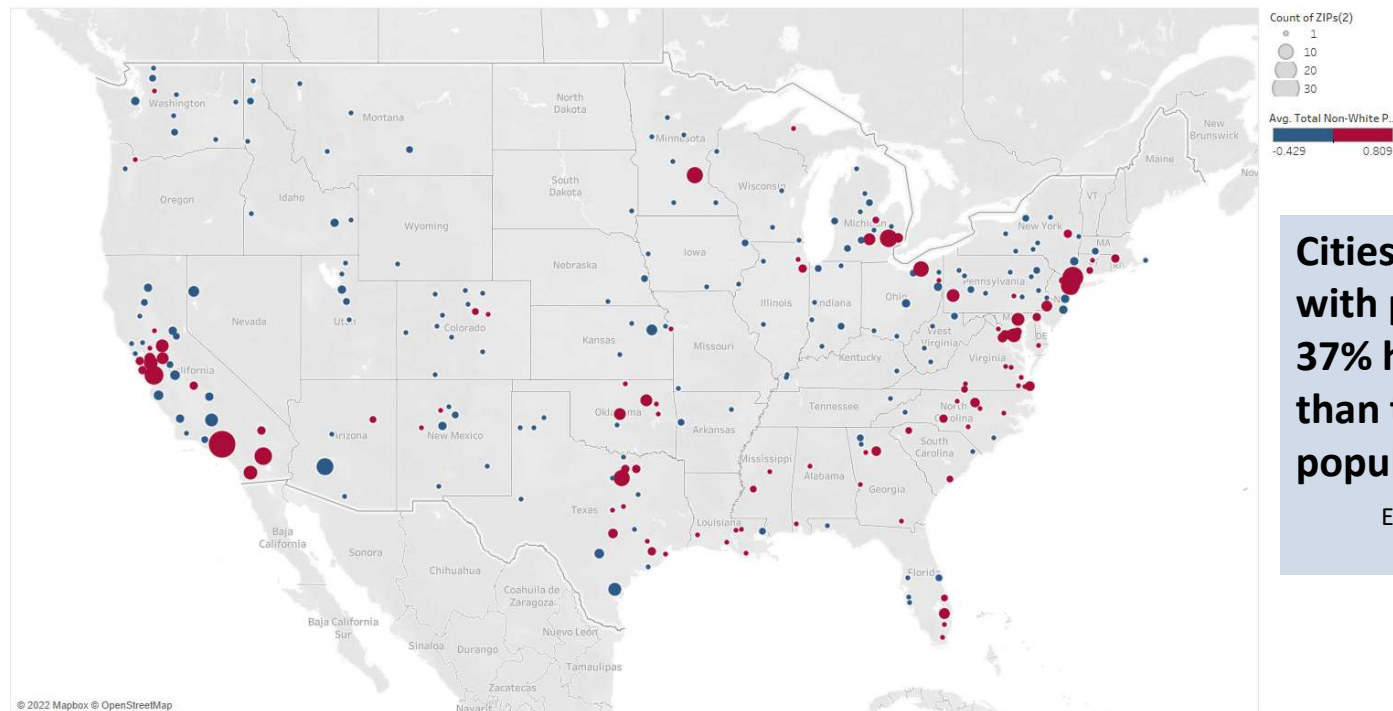


U.S. Census Bureau provided us with estimated population characteristics for each county in the U.S. based on data collected in the 2010 Census. For our analysis we used 2019 estimates to calculate a total non-white population percentage for each county.

The Pipeline and Hazardous Materials Safety Administration within the U.S. Department of Transportation provided us with gas incident information from 2010 to 2020 by county and ZIP code.

Risk Assessment

This inequity spans the U.S.



Cities predominantly populated with people of color have a 37% higher gas leak density than those with mostly white populations

Environmental Science and Technology Journal
(May 2022)

© 2022 Mapbox © OpenStreetMap

Map based on Longitude (generated) and Latitude (generated). Color shows average of Total Non-White Population %. Size shows count of ZIPs(2). Details are shown for County.

U.S. Census Bureau provided us with estimated population characteristics for each county in the U.S. based on data collected in the 2010 Census. For our analysis we used 2019 estimates to calculate a total non-white population percentage for each county.

The Pipeline and Hazardous Materials Safety Administration within the U.S. Department of Transportation provided us with gas incident information from 2010 to 2020 by county and ZIP code.

Opportunity to Make a Difference

Firms operating in more-diverse communities employ similarly-sized workforces as those seen in less-diverse communities, employing about 35 at-risk workers on average, representing an important opportunity to get the word out

More-Diverse Communities 35 Employees



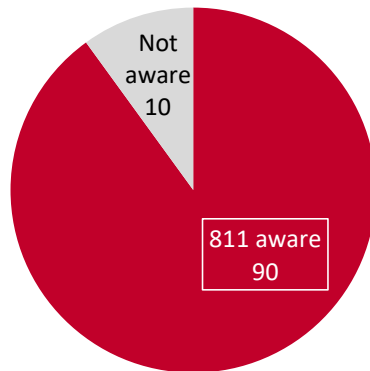
Less-Diverse Communities 31 Employees



Relevance

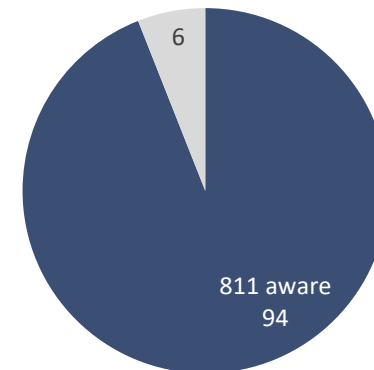
Contractor organizations in more-diverse communities are significantly less likely to know about 811

More-Diverse Communities



Percent of Respondents

Less-Diverse Communities



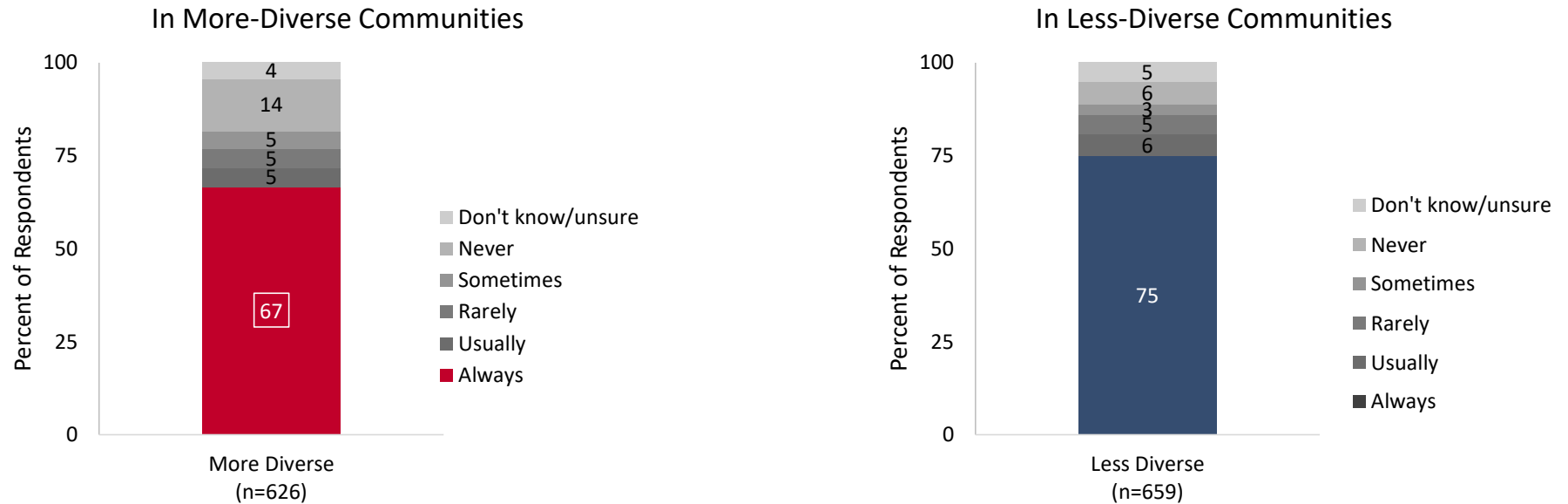
Percent of Respondents

Significantly differs at 95% (more diverse vs. less diverse)

Safety Behaviors

Contractor organizations operating in more-diverse communities are significantly less likely to say someone in their organization always calls 811 before digging in a new spot

How Often Someone in Their Organization Calls 811 Before Digging in a New Spot

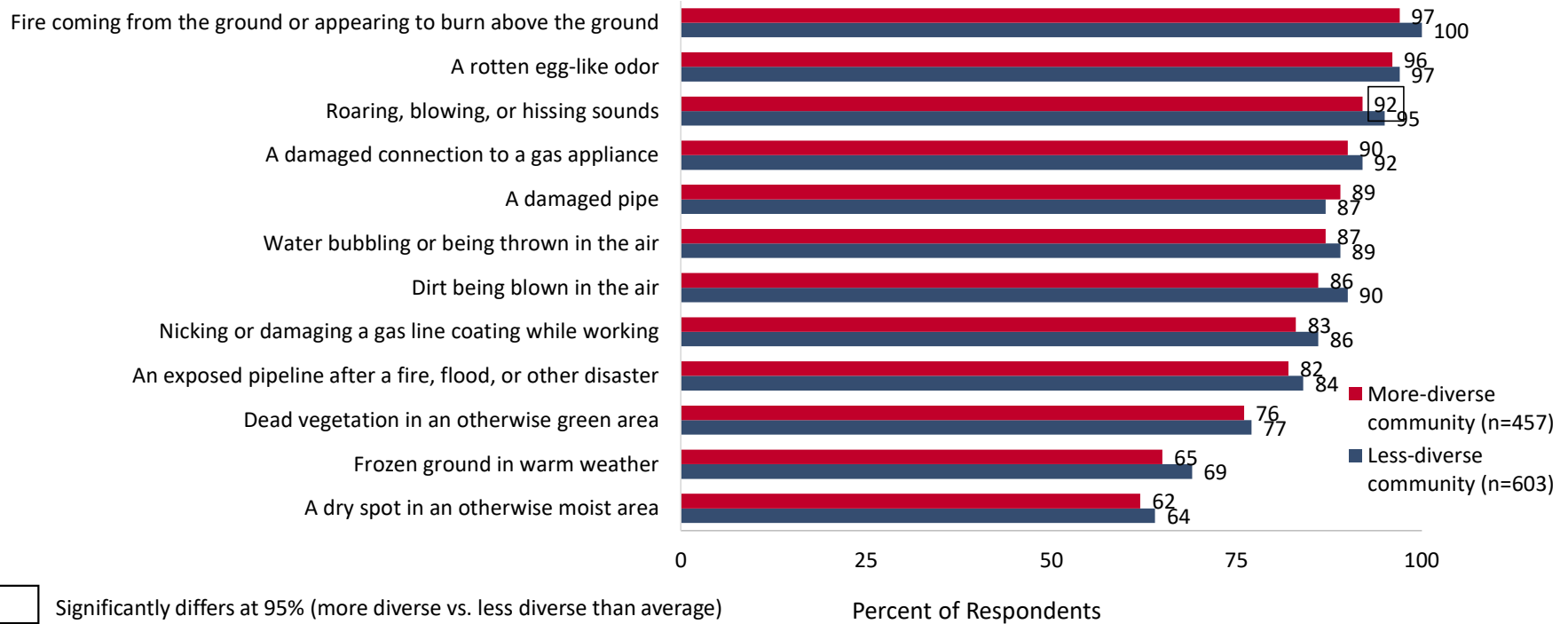


67 Significantly differs at 95% (more diverse vs. less diverse)

Gas Leak Sign Awareness

Directionally, contractors in more-diverse communities are less likely to recognize natural gas leak signs. They are significantly less likely to know roaring, blowing, or hissing sounds may indicate a leak

Know the Following Gas Leak Signs

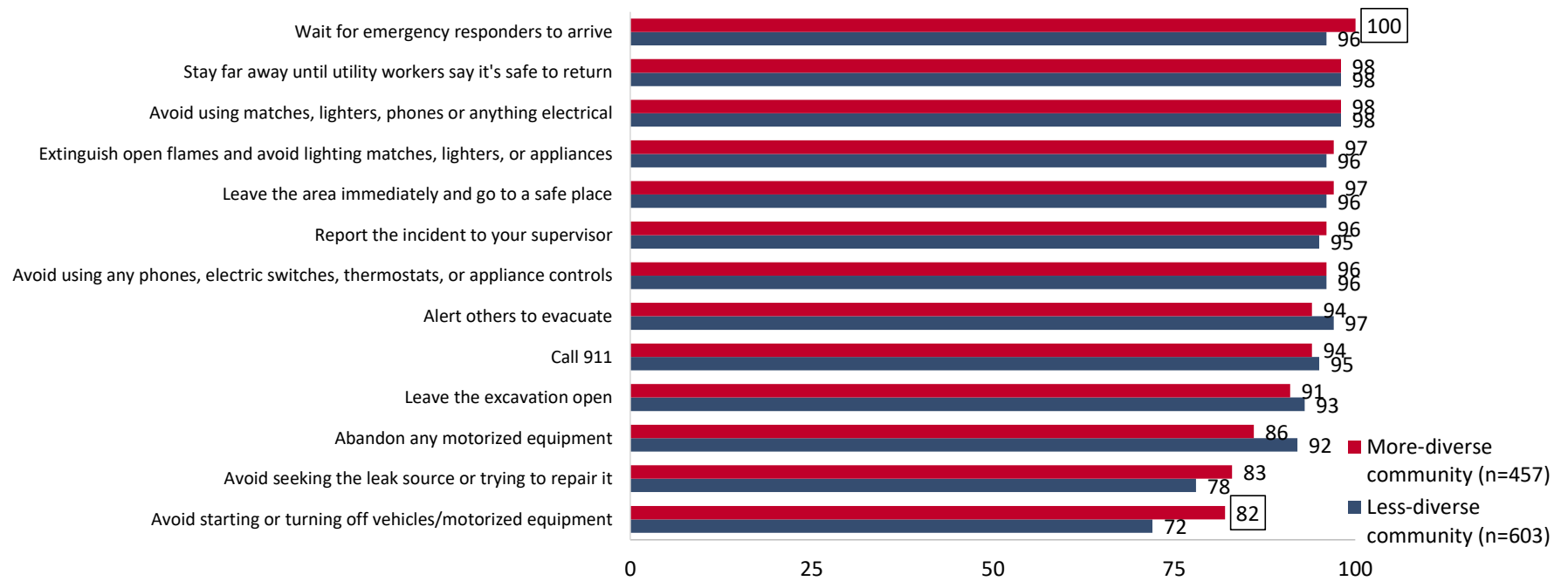


Culver Company Proprietary At-Risk Worker National Benchmark, 2021

Gas Leak Sign Response

While contractors operating in more-diverse communities are less likely to recognize gas leak signs, they are more likely to know to wait for emergency responders and to avoid starting or turning off vehicles or motorized equipment

Know the Following Gas Emergency Response Protocol



100 Significantly differs at 95% (more diverse vs. less diverse than average)

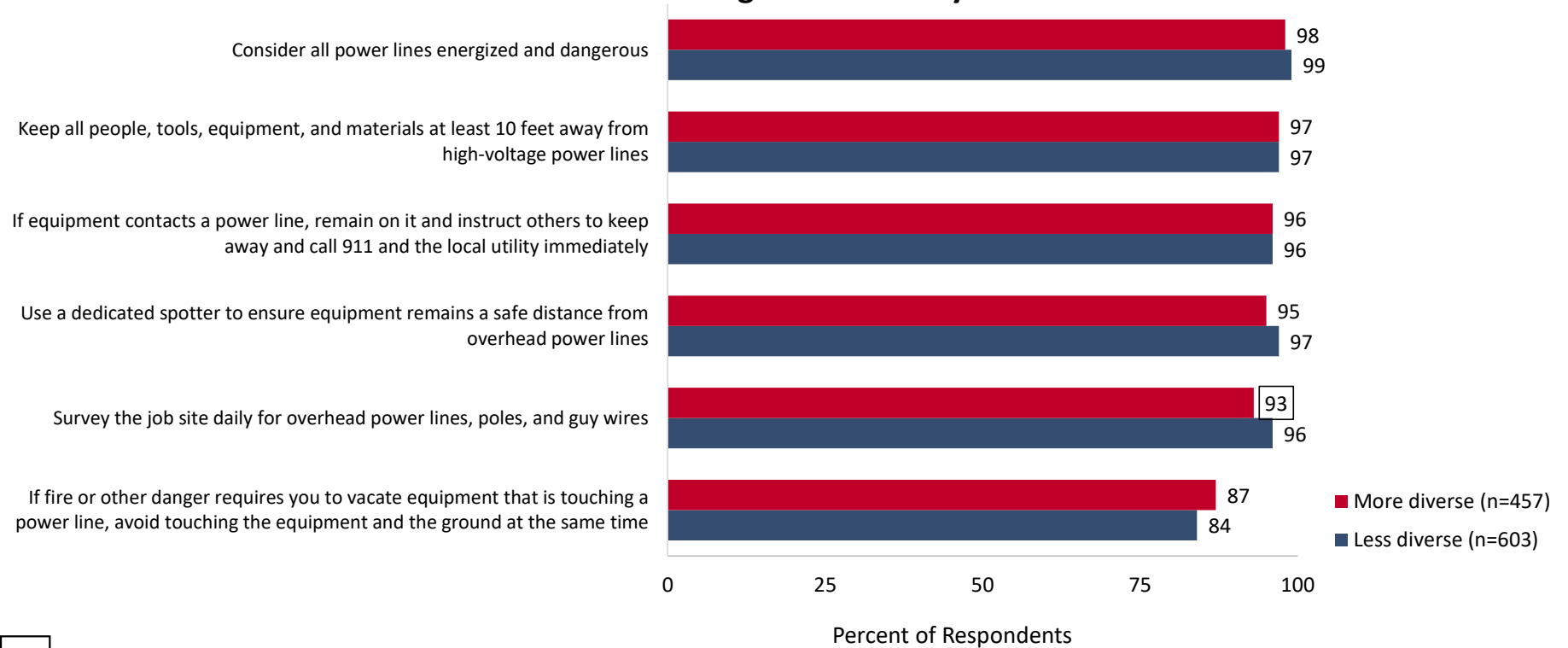
Percent of Respondents

Culver Company Proprietary At-Risk Worker National Benchmark, 2021

Electric Emergency Response

Contractors in more diverse communities are significantly less likely to know to survey the job site daily

Know the Following Electric Safety Protocols

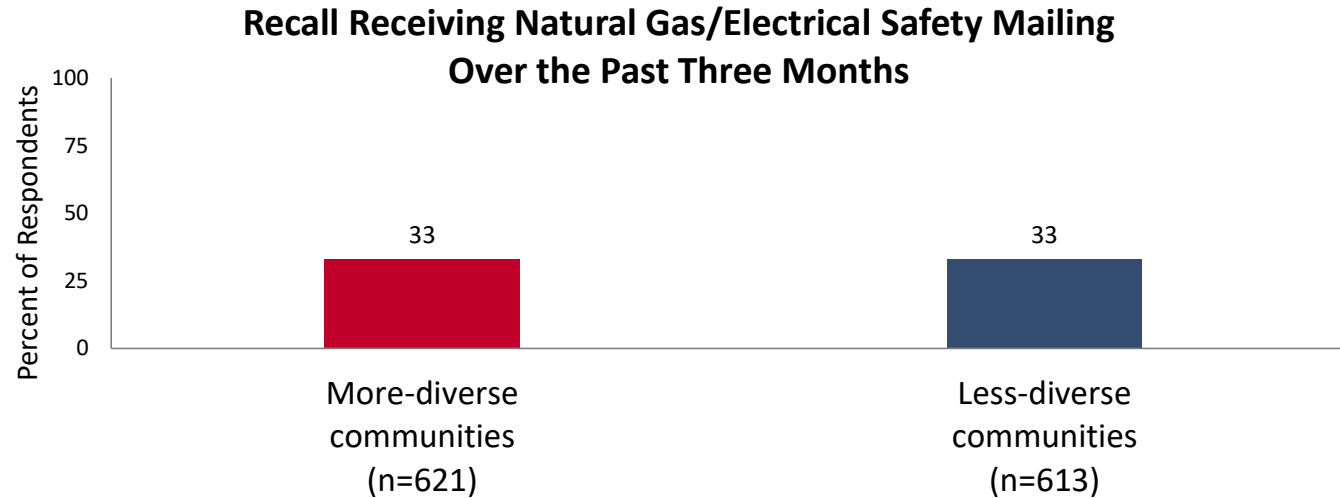


□ Significantly differs at 95% (more diverse vs. less diverse than average)

Culver Company Proprietary At-Risk Worker National Benchmark, 2021

Recent Safety Mailing Recall and Impact

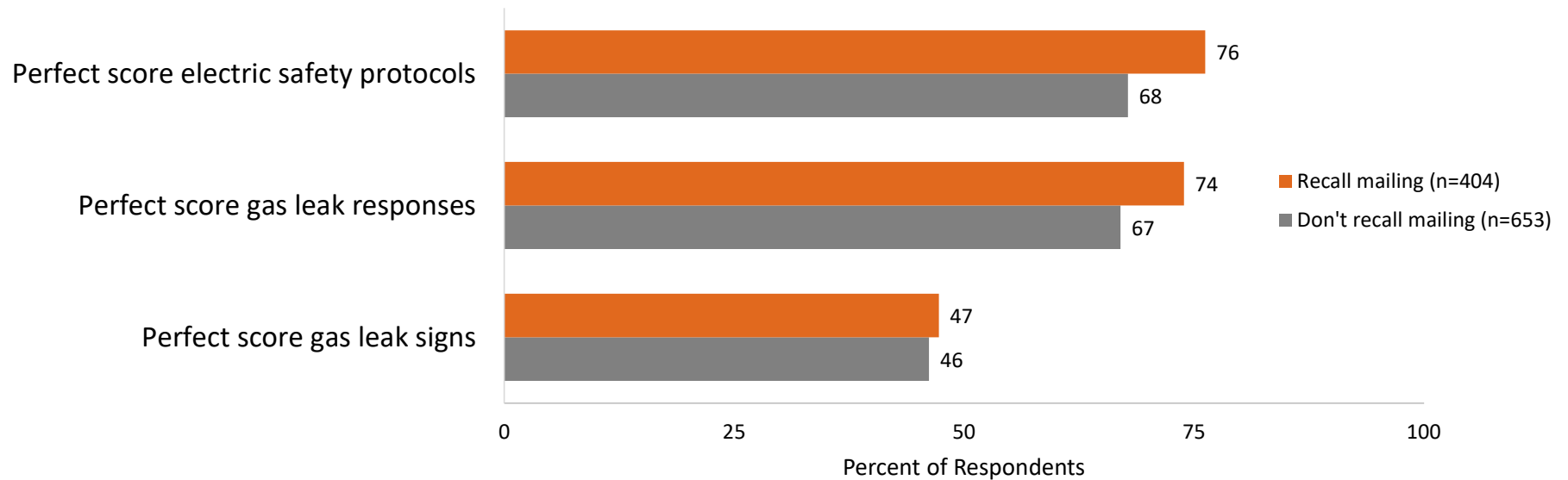
Contractors located in more-diverse communities are equally as likely as those in less-diverse communities to say they recall receiving a recent natural gas/electrical safety mailing



Recent Safety Mailing Recall and Impact

Excavators who recall receiving a recent utility safety mailing demonstrate directionally higher levels of gas leak response knowledge and tend to be more versed in electrical safety

Contractor Natural Gas and Electrical Safety Protocol Knowledge

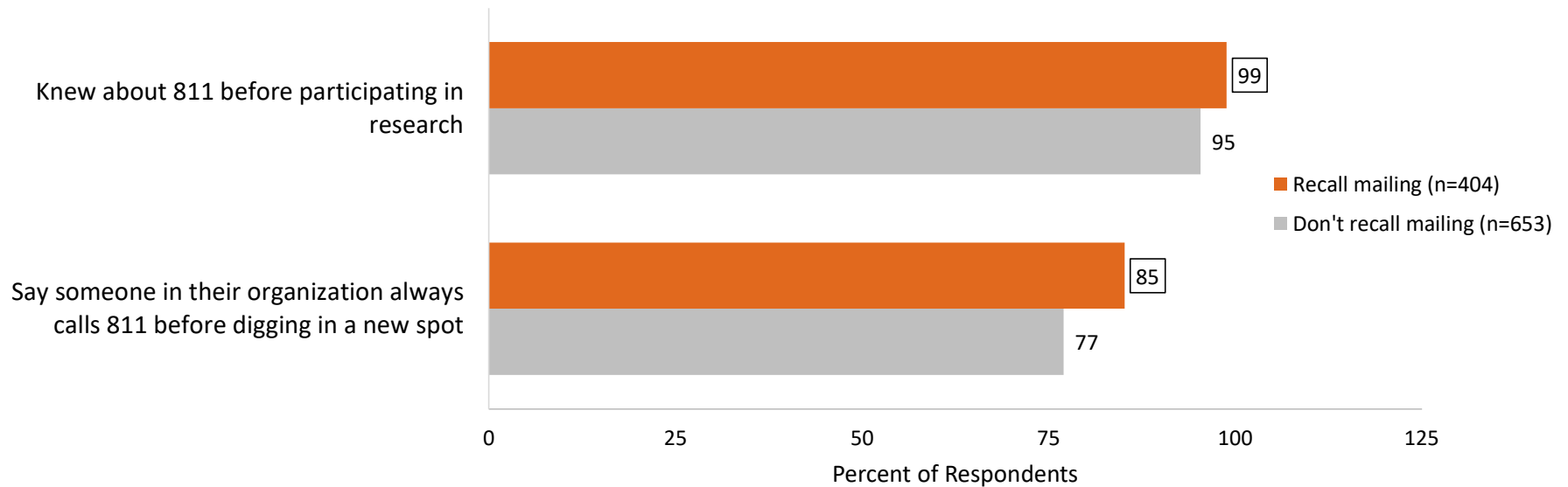



Significantly differs at 95% (recall vs. don't recall recent mailing)

Recent Safety Mailing Recall and Impact

Excavators who recall receiving a recent utility safety mailing are significantly more likely to know about 811 before participating in the research

Damage Prevention Knowledge and Behavior



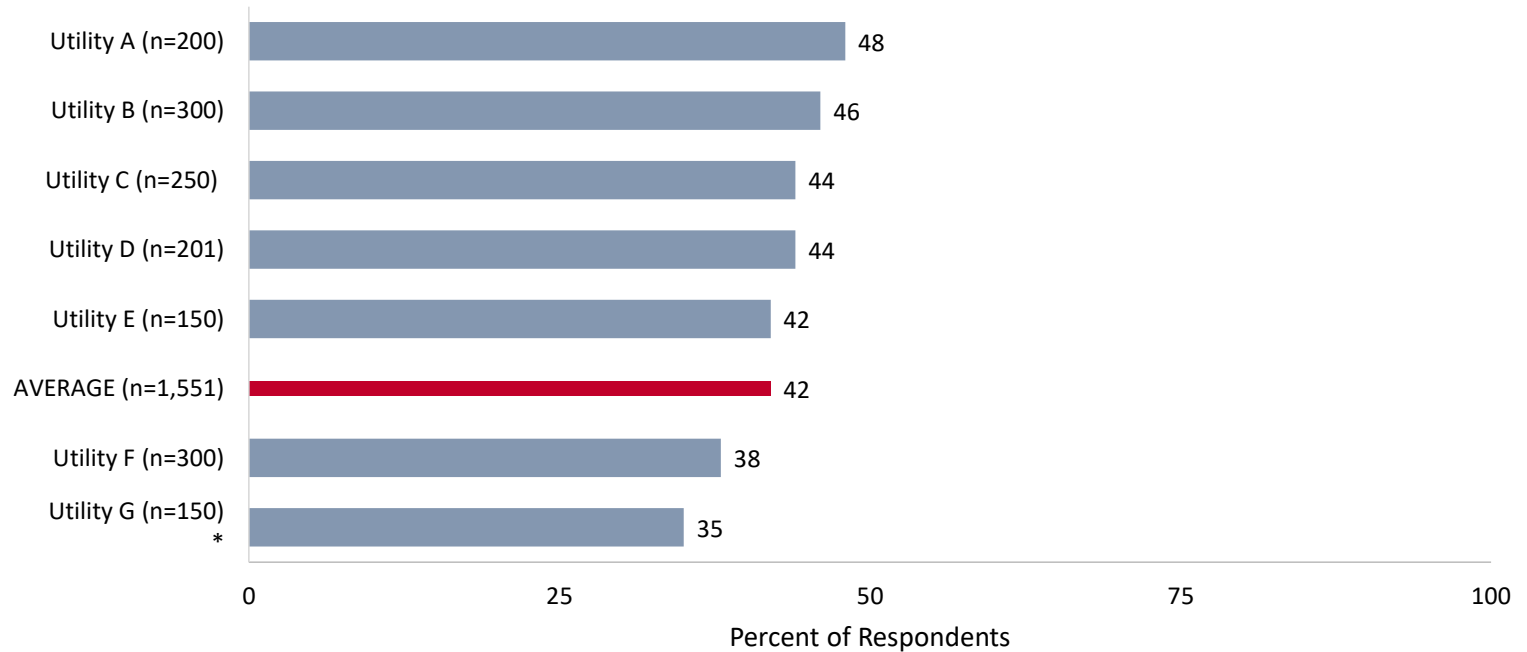
 Significantly differs at 95% (recall vs. don't recall recent mailing)

Utility Benchmark

Benchmark

Overall, 42% of contractor organizations recall receiving utility safety information over the past 12 months

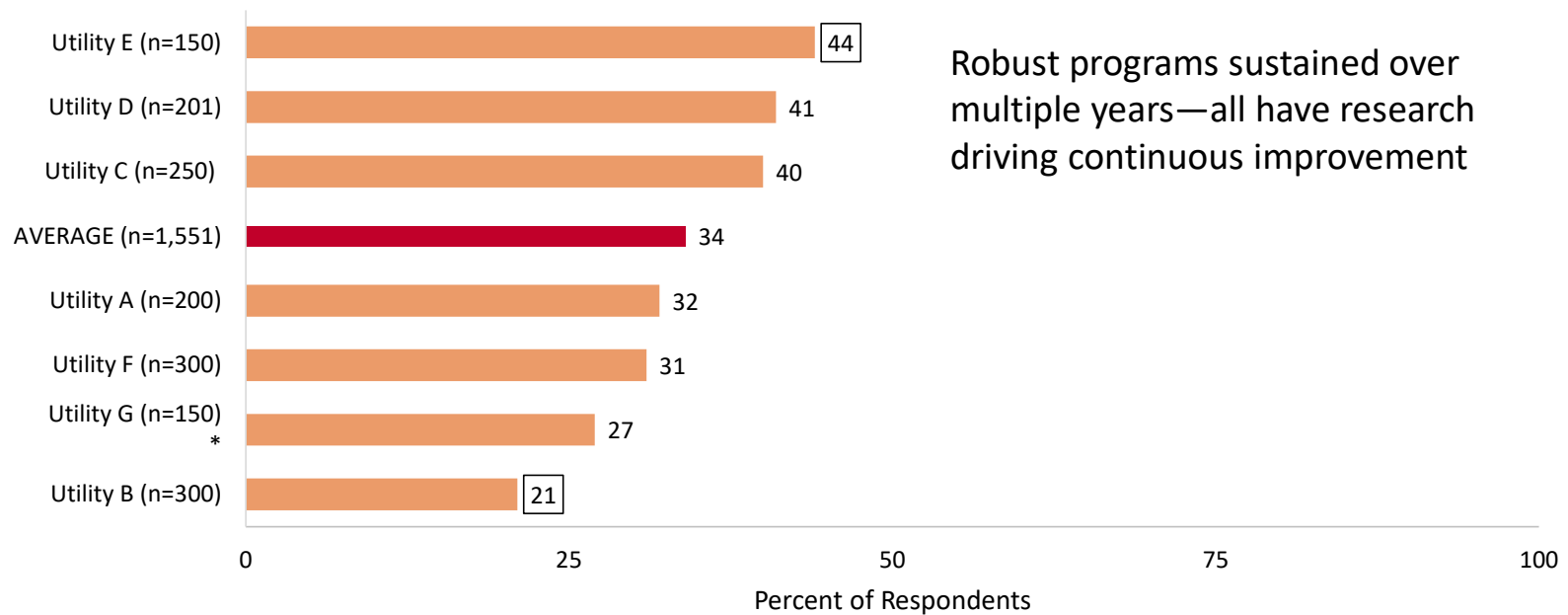
2021 Recall Receiving Utility Safety Information Over the Past 12 Months




Benchmark

34% of contractor firms specifically recall receiving a natural gas and/or electrical safety mailing over the past three months. This differs by utility

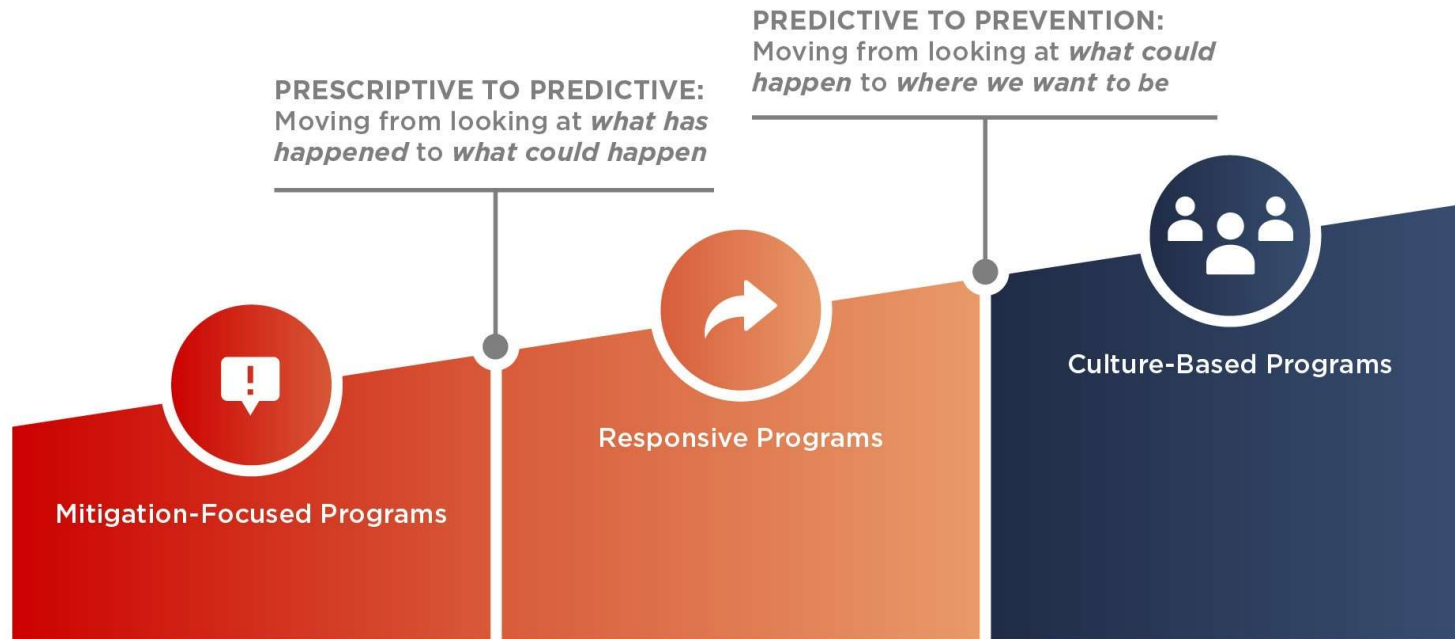
Recall Receiving a Natural Gas or Electrical Safety Mailing Over the Past Three Months



 Significantly differs at 95% from AVERAGE

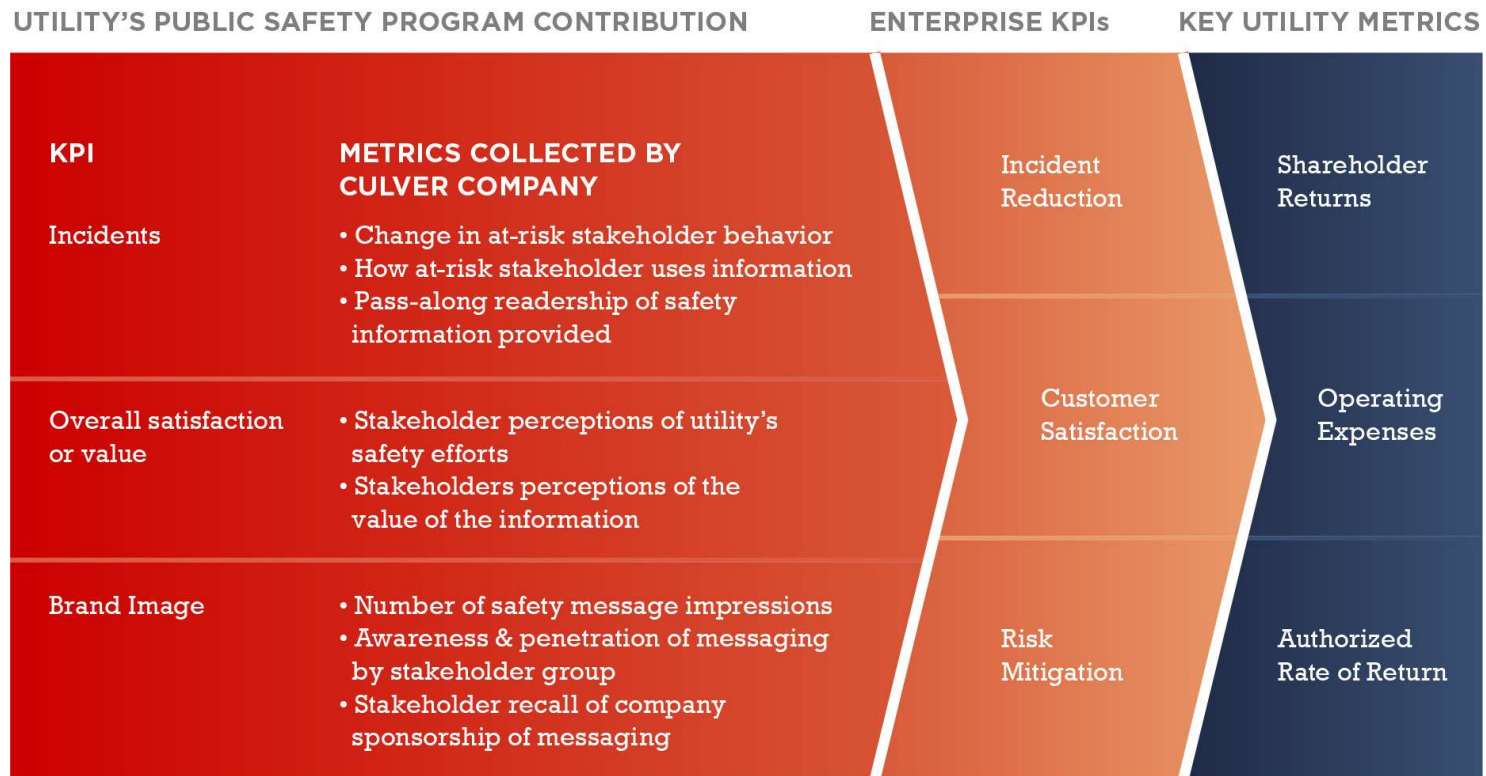
Culver Company Proprietary At-Risk Worker National Benchmark, 2021

Evolution of public safety programs in a changing environment



How Public Safety Impacts You

Public safety outreach contributes to key performance metrics



Key Takeaways

Our industry's commitment to safety outreach that equitably protects all communities elevates the importance of understanding stakeholders' needs and behaviors



- Use data to ensure outreach is effective and that it meets the needs of underserved communities
- Leverage publicly available data to identify and respond to emergent trends, risks, and opportunities
- Conduct primary research and benchmark findings to identify best practices and gaps
- Strategically expand stakeholder audience