

# SMUD's Commitment to Public Safety Outreach

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Catherine Mankins

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September 11, 2018

Powering forward. Together.



# September 11<sup>th</sup>...A Day to Remember and Honor the Fallen



# Agenda

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- Overview—SMUD
- SMUD's Strategic Plan includes public safety
- Reaching at-risk workers
  - Changing unsafe behaviors
  - Creating positive customer experiences
- Reaching at-risk students and families
  - Beyond compliance approach
  - Improving safety
  - Increasing public awareness
- Outreach to the Community
- Vehicle Accident Risk Mitigation
- EMF and RF

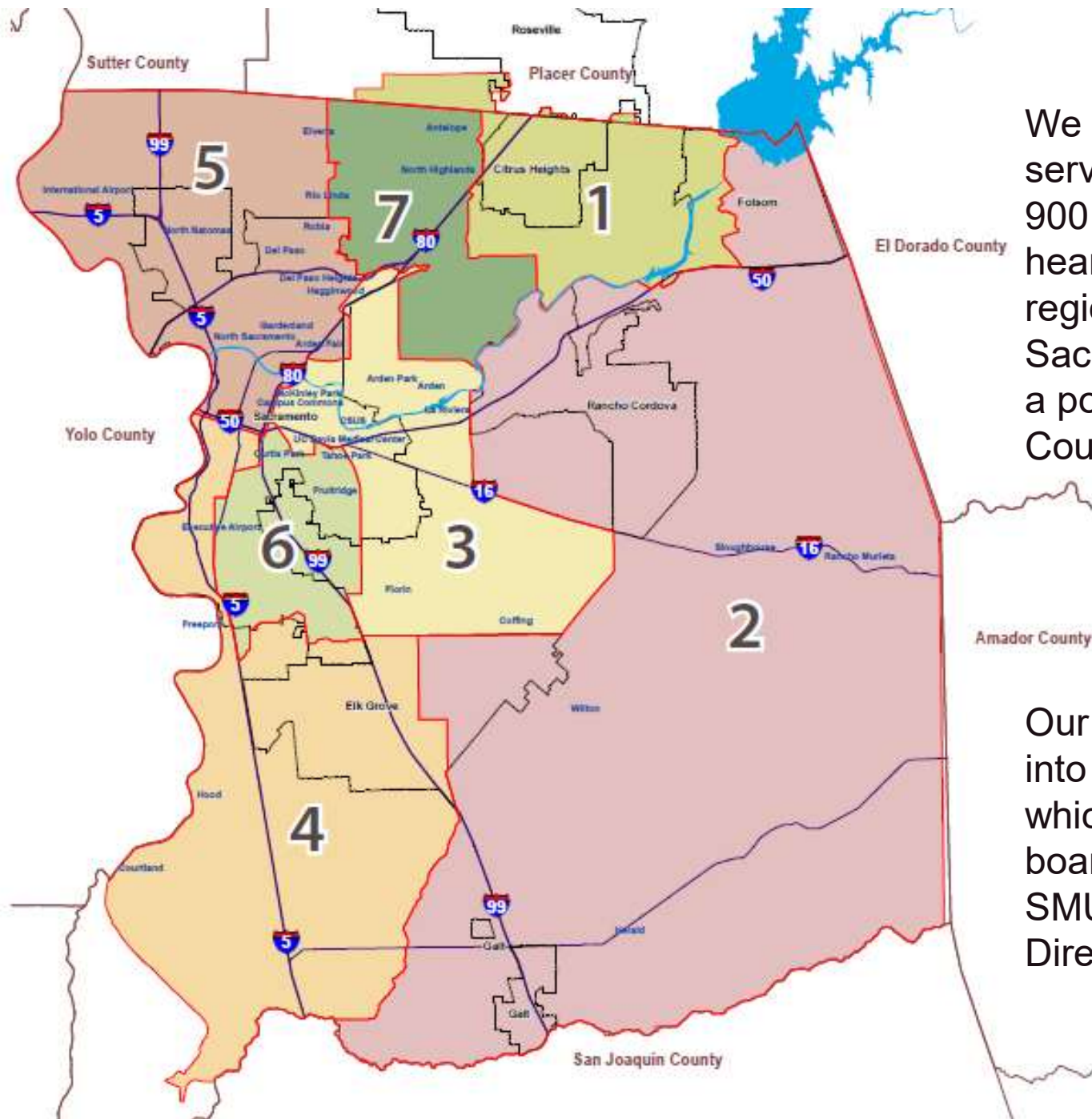
# The sixth largest community-owned utility in the US. Top J.D. Power scores for 16 consecutive years.

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- 550,000 residential meters service a population of about 1.5 million
- Our Strategic Plan is focused on enhancing the quality of life for our customers and community while ensuring SMUD's long-term financial vitality and viability
- *Safety for employees and the public are at the top of SMUD's 3.0 North Star 5-year strategic plan*







We provide electric service to approximately 900 square miles in the heart of the capital region. We serve most of Sacramento County and a portion of Placer County.

Our territory is divided into seven wards, each of which is represented by a board member elected to SMUD's Board of Directors.

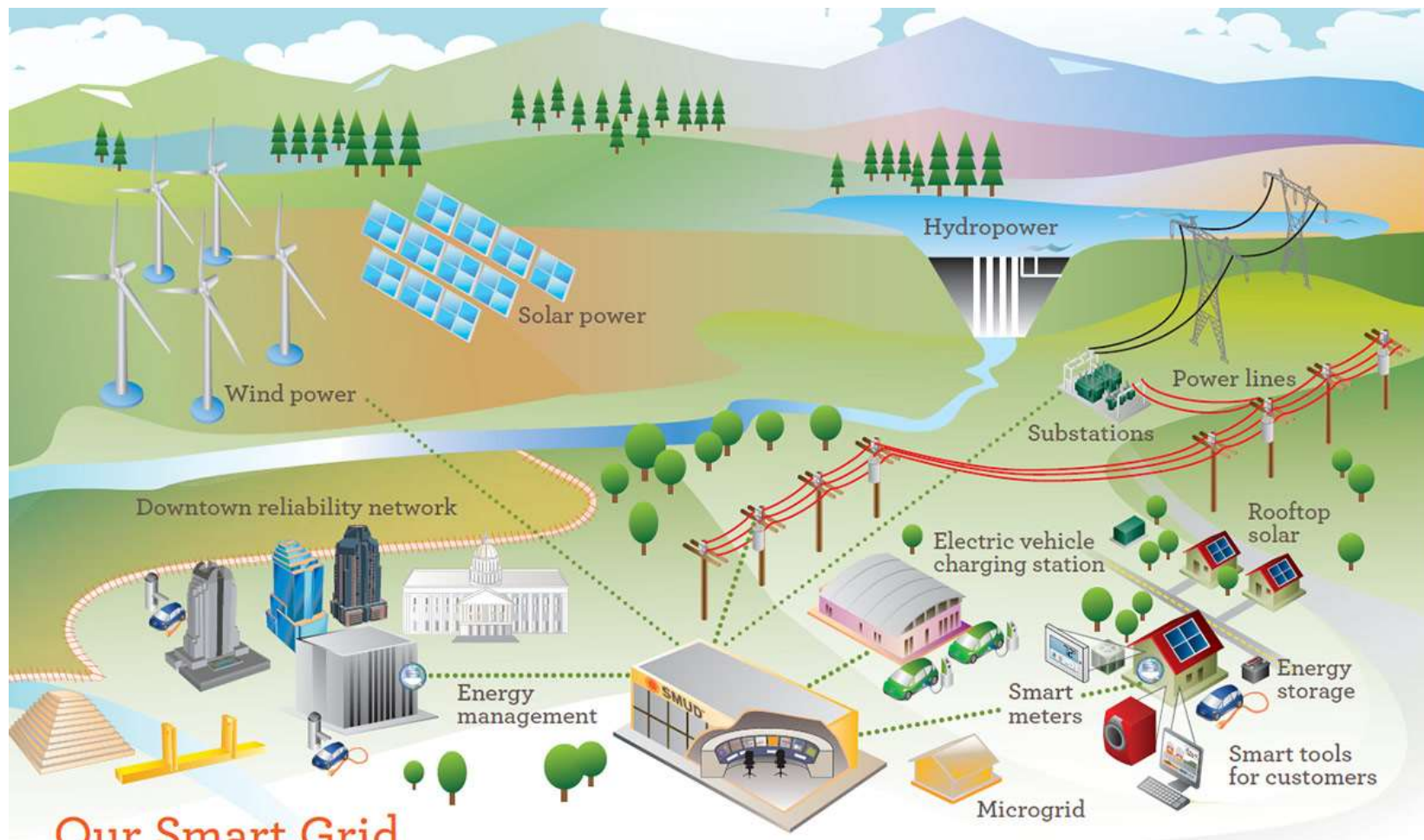
# SMUD's electric system

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- SMUD's Service area is 900 square miles
- Population served is 1.5 million
- 626,500 customers
- 2200 employees
- 477 miles of transmission
- 10,000 miles of distribution
- 2,200 MW of generation, comprised of:
  - Local Thermal (50%)
  - Hydroelectric (20%)
  - Purchased Renewable and Hydro (15%)
  - Other Purchased Power Resources (9%)
  - Solar and Wind (6%)







## Our Smart Grid

**Downtown reliability network** - an underground cable electrical system that ensures reliability for downtown Sacramento.

**Electric vehicle charging station** - an electrical system that charges vehicles that use one or more electric motors.

**Energy management** - the ability to optimize the grid's performance and reduce energy costs by shifting or reducing electricity use when needed, such as automated controls for air conditioning, lighting systems and major processing equipment.

**Energy storage** - a rechargeable system that has the ability to store energy generated during low-cost, off-peak periods for use during high-cost, peak periods or emergency conditions.

**Hydropower** - electricity generated from the energy of falling or flowing water.

**Microgrid** - a smaller version of a utility-scale power grid that incorporates its own generation and distribution system. A microgrid can operate in conjunction with the overall power grid or in the case of an outage, as its own self-contained system.

**Power lines** - carry electricity from generation sources to customers.

**Rooftop solar** - converts energy harnessed from the sun to electricity, for use in homes and businesses.

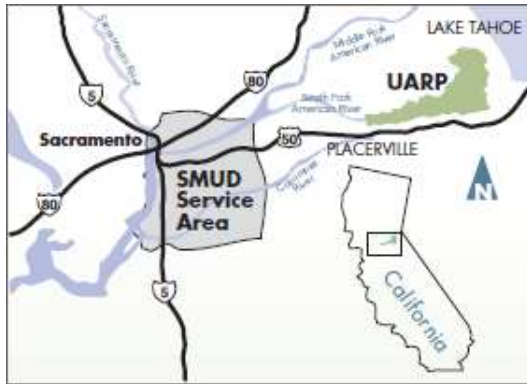
**Smart meters** - digital meters that enable two-way communication to remotely read electrical usage, detect outages, and accommodate the use of smart thermostats, home energy management systems and smart appliances to maximize energy efficiency.

**Smart tools for customers** - technology that helps customers customize and reduce their energy use, like smart appliances, home monitoring systems, smart thermostats, and online energy usage programs.

**Solar power** - electricity harnessed from the energy of the sun's rays.

**Substations** - "step down" the high voltage electricity generated at power plants to levels appropriate for use in neighborhoods and businesses.

**Wind power** - electricity produced from the energy of air flowing through wind turbines.



Sacramento Municipal Utility District

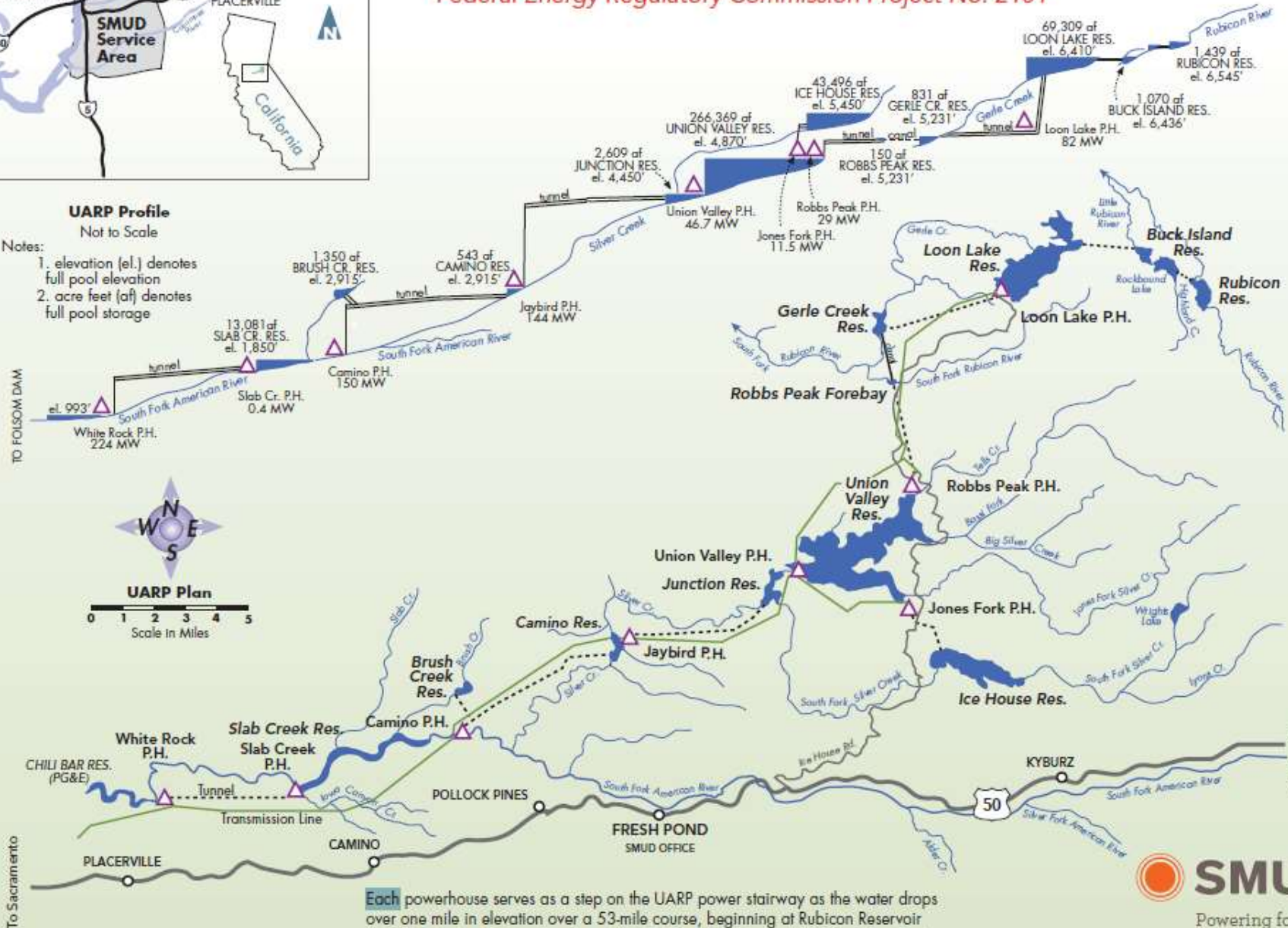
# Upper American River Project

Federal Energy Regulatory Commission Project No. 2101

## UARP Profile

Not to Scale

- Notes:
1. elevation (el.) denotes full pool elevation
  2. acre feet (af) denotes full pool storage



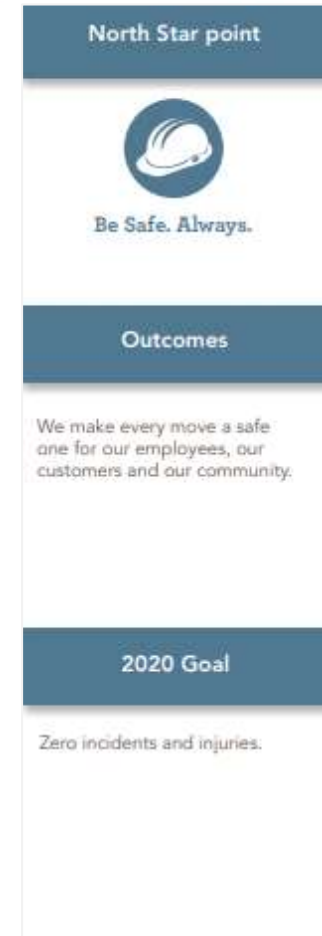
Each powerhouse serves as a step on the UARP power stairway as the water drops over one mile in elevation over a 53-mile course, beginning at Rubicon Reservoir (6,545 feet elevation) and ending at White Rock Powerhouse (993 feet elevation).



# Our service territory includes approximately 25,000 at-risk stakeholders targeted for safety messaging

Enhancing stakeholder safety is fundamental to the success of our Strategic Plan

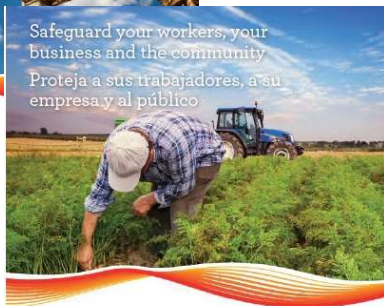
- **Contractors:**
  - Prevention-based hazard awareness training to help educate stakeholders and their employees.
- **Agricultural Workers:**
  - Address dangers workers face when working around overhead and underground electric utility and natural gas assets.
- **Stakeholders Along SMUD's Pipeline Right of Way:**
  - Increase public safety awareness among stakeholders located near the 76 miles of high pressure natural gas pipeline that serves our power stations.
- **Educators, Students, and Families:**
  - Promote utility public safety awareness among elementary and middle school principals, teachers, students and students' families.



# SMUD used the worker safety communications value chain to identify and reach at-risk third-party contractors and agricultural workers



Safeguard your workers, your business and the community  
Proteja a sus trabajadores, a su empresa y al público



Safeguard your workers, your business and the community  
Proteja a sus trabajadores, a su empresa y al público



Order FREE safety training materials today!  
Solicite el material GRATUITO de capacitación sobre seguridad



More than 23,670  
third-party  
contractors

More than  
1,000  
agricultural  
stakeholders



48 requests  
for additional  
utility hazard  
awareness  
information



24/7 access to additional  
utility safety training  
resources



# Case Study: Effectiveness evaluations demonstrate our educational efforts are helping to change unsafe behaviors and save lives

Of the **24,675** educational mailers distributed:

- About **90%** successfully delivered to stakeholders
- Approximately **24% recall** the mailing
- Average time spent with materials: **10 to 11 minutes**
- Average number of workers with whom materials were shared: **15 to 16 workers**
- Total percent of workers projected to change unsafe behaviors each year as a result: About **14%**, or **3,400 workers each year**



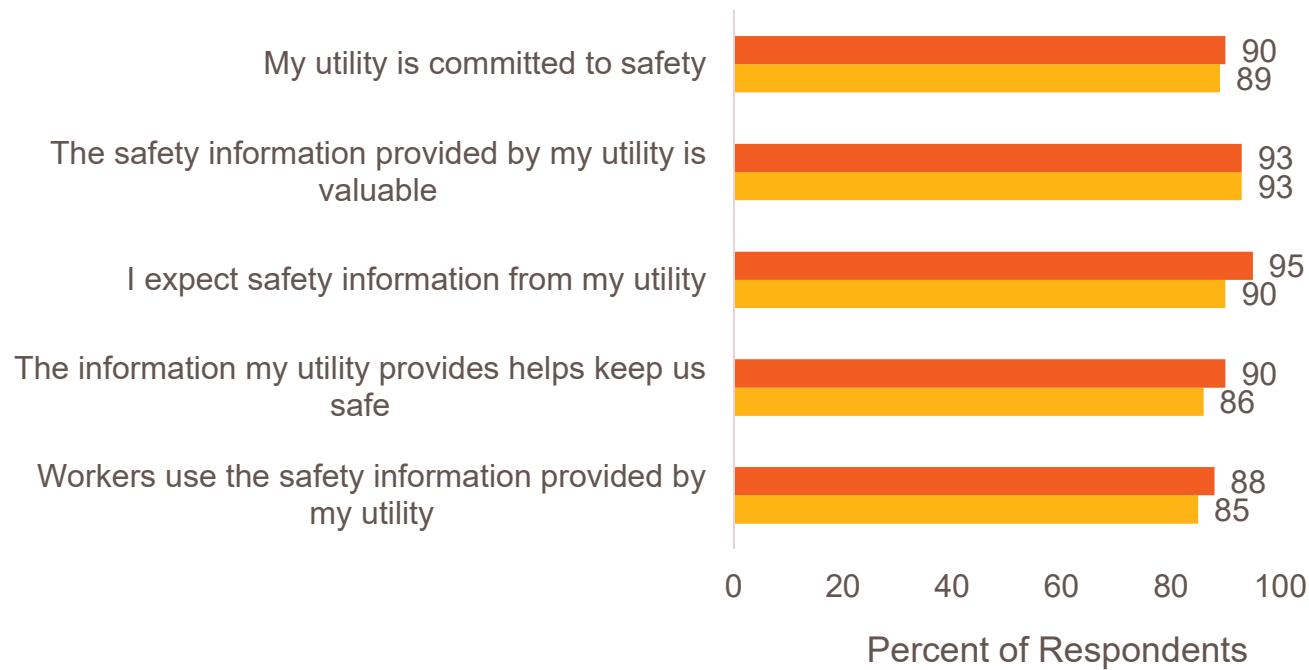
Sources: Culver Company National At-Risk Worker Program Effectiveness Data, SMUD Program Data





# Our public safety outreach efforts help to influence important customer satisfaction results

## At-Risk Worker Feedback



**For 16 consecutive years, SMUD has remained #1 in customer satisfaction in our region.\***

**Customer satisfaction and public safety are linked.**

■ SMUD ■ National Averages

Sources: Culver Company National At-Risk Worker Opinion and Satisfaction Data, SMUD Program Data, 2017

\* JD Power and Associates 2001 to 2017



# Annually, SMUD reaches out to teachers, students and families with a broad range of electrical and natural gas pipeline safety educational resources

SMUD offers a wide range of resources, including:

- Free workshops and classes for students and teachers
- Electricity fairs and other events
- Scholarship programs
- Streaming educational videos and lesson plans
- Standards-based in-classroom materials, supplemented with lesson planning guides and student pre/post tests

We also use targeted mailings to ensure we satisfy our natural gas pipeline public awareness commitments (RP 1162)



Educators are reached through their preferred communication channels, and students are provided age-appropriate safety content to increase safety knowledge and promote behavior change

## School Program Value Chain

**Offer:** SMUD mails to 4<sup>th</sup> grade educators and/or principals at every school in our service territory

**Engage:** Educators request and receive age-appropriate curriculum-based safety materials and lesson plans

**Deliver:** Educators (the trusted expert) deliver safety lessons and booklets to students

**Share:** Students take the booklets home and share them, and the website with their families



Order FREE energy-related educational materials from SMUD.  
Simply fill out this card and mail it, fax it to 978-463-1715, or order online at [smudsafety.com/educator](http://smudsafety.com/educator).

Name: \_\_\_\_\_  
Role (e.g., teacher, principal, librarian): \_\_\_\_\_  
School name: \_\_\_\_\_  
Is this a homeschool? ☐ Yes ☐ No  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Email: \_\_\_\_\_  
Which subject(s) do you teach? \_\_\_\_\_  
Which grade(s) are you ordering for? \_\_\_\_\_  
How many teachers will be using these materials? \_\_\_\_\_  
Comments: \_\_\_\_\_

Title	# of Booklets
Electrical & Natural Gas Safety World, Gr 3-6, #26385	
Electrical & Natural Gas Safety World—SPANISH, Gr 3-6, #26555	
Stay Safe Around Electricity and Natural Gas, Gr 3-6, #27990	

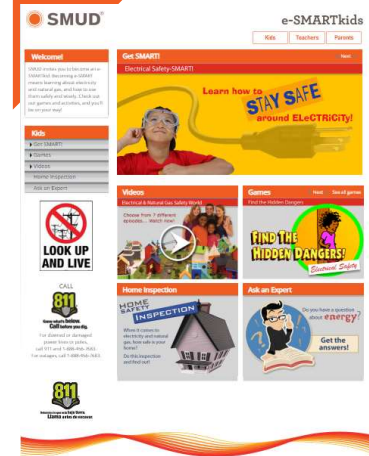
Thank you for your order. Materials will arrive in 2-4 weeks.

#10972



**SMUD**  
Stay Safe Around Electricity and Natural Gas  
Teacher's Guide  
This guide is designed to help you deliver safety lessons to your students. It includes lesson plans, activities, and a glossary. The guide is divided into two sections: Electrical Safety and Natural Gas Safety. Each section contains a lesson plan, a list of activities, and a glossary. The guide is designed to be used by teachers, librarians, and other adults who work with children. It is a free resource from SMUD.

Teacher's guides help deliver safety messages.

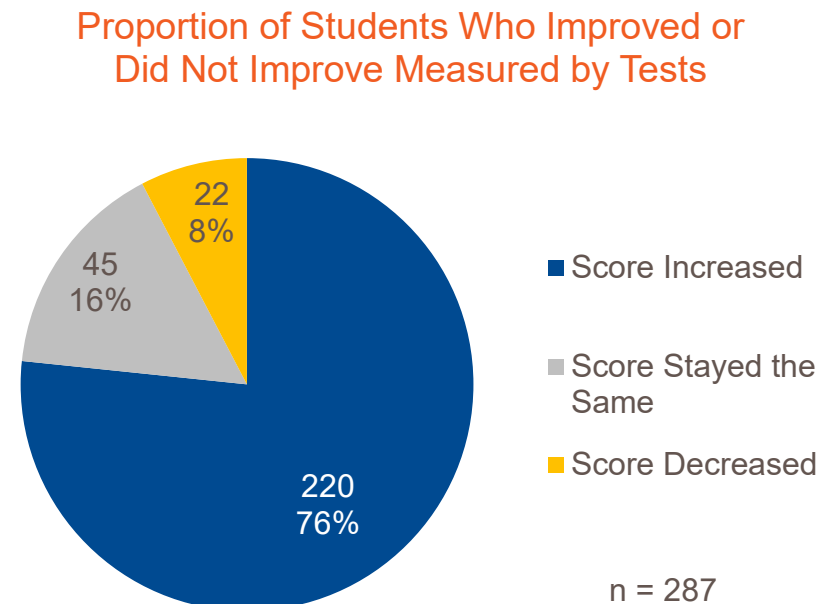
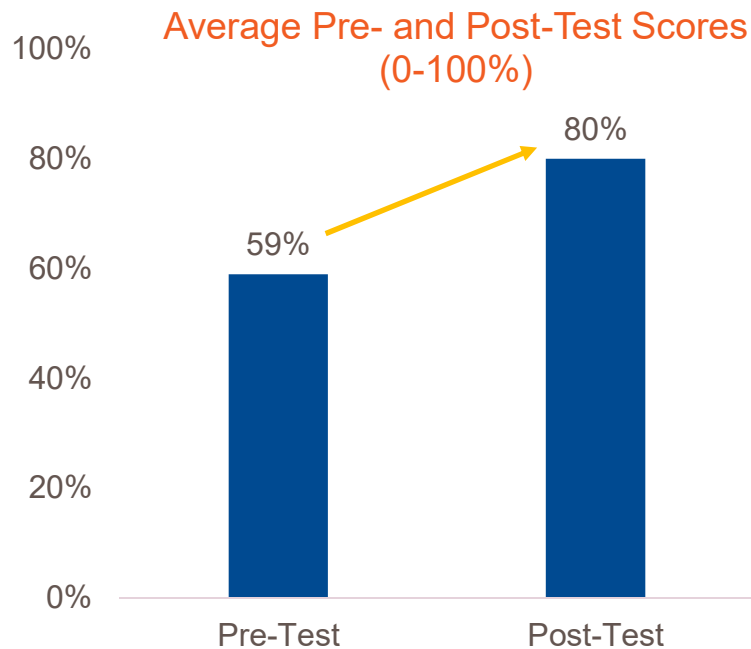




## Case Study: Research demonstrates school utility safety programs change behaviors and reach adults—SMUD’s customers—in their homes

Teachers greatly appreciate the effectiveness of the program materials, and many expressed enthusiasm for the program and the positive impact it had on students and their families.

Results conclusively show that children are safer around utilities, more aware of the energy sources used in their homes, and more energy-use conscious after participating in the program.

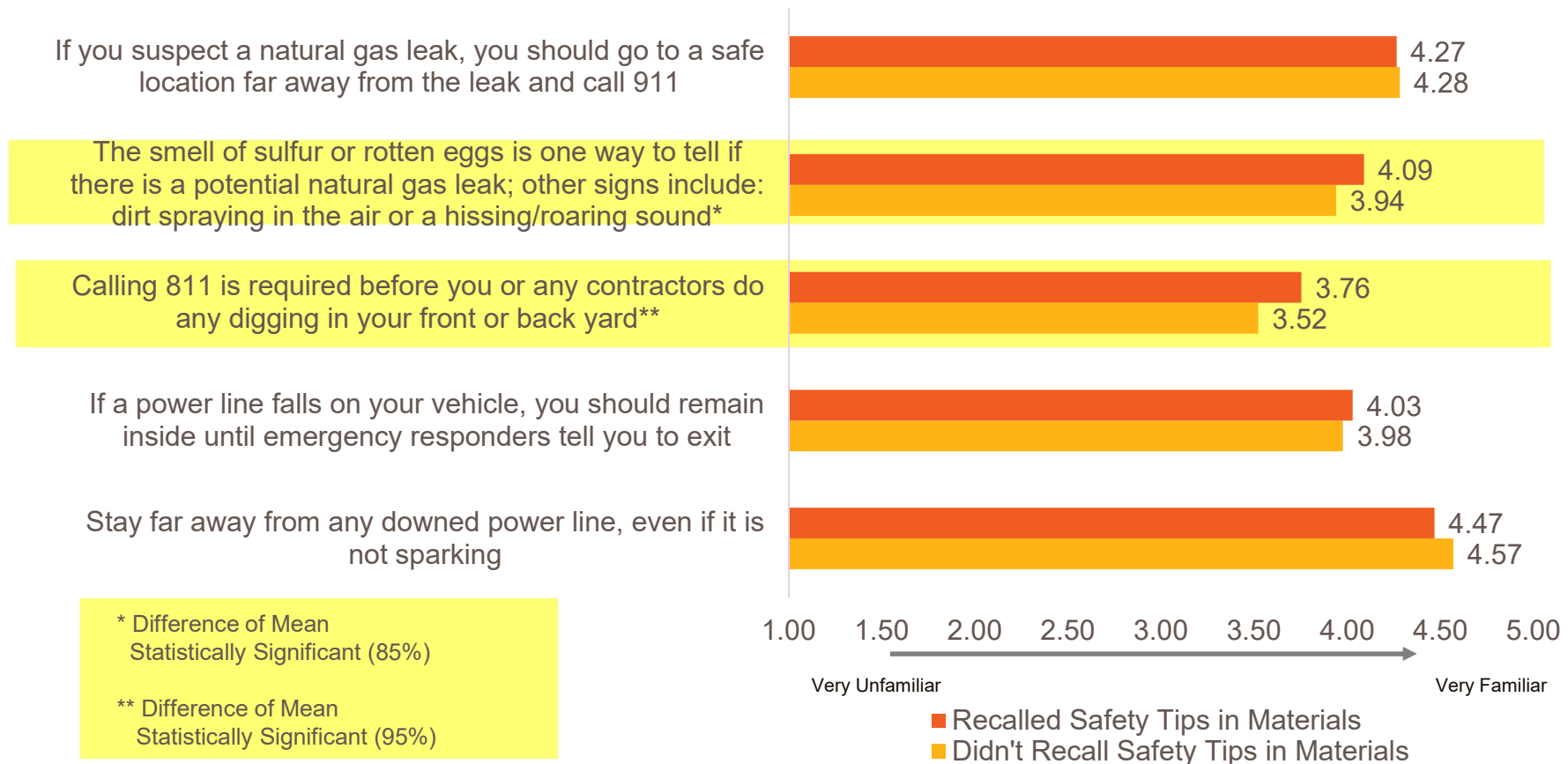


**Extended Reach of Safety Messaging:** **92% of educators** report that students are taking the safety materials home, extending the reach of our safety messaging and building trust.



# Case Study: Classroom-based materials increase student and parent safety awareness around our utility assets

## Level of Familiarity (1 to 5) with Safety Tips in School Materials



Source: Culver Company Parent Engagement Survey Data.



# Community Outreach Elements

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- Display of SMUD's Electrical Safety Board and other safety materials (811 Call Before You Dig, etc.) at local fairs and community events.
- Close collaboration with SMUD's Gas Pipeline group for outreach.
- On-going poster and billboard campaign – Safety for Life messaging. Initiating a bill board campaign, depicting “Look Up & Live.”
- SMUD's Emergency Preparedness Program – public and groups.
- Collaboration with SMUD Marketing & Communications for bill insert and press releases of safety messages (storm, balloon & kite safety, “Call Before You Dig,” etc.)
- Provide training to local fire departments and agencies on electrical hazards. Developing an e-learning refresher course on electrical hazards for emergency responders.



## Look Up and Live!

**All power lines  
can cause  
serious injury  
or death.**



# Community Outreach Elements

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## Vehicle vs. Pole Incident Reduction

- In 2005, SMUD began recording the results of CHP root cause analysis of vehicle vs. pole incidents.
- Analysis of the data implies that the public's driving habits, rather than external influences, are the primary factor.
- Leading causes include: unsafe driving, such as poor situational awareness, loss of vehicle control, and drivers found to be under the influence.
- In 2017 there were 241 incidents recorded.

# Community Outreach Elements

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## Vehicle vs. Pole Incident Reduction Efforts

- Established committee and provided budget to implement mitigations to identify and implement options to reduce the severity of car-pole related accidents.

Safety measures for consideration include:

- removal or relocation of poles,
  - pole redesign
  - addition of pole barriers
  - adding improved pole visibility strips.
- Added benefits
    - Improve reliability through reduced outages due to accidents and reduce costs due to unrecovered accident related expenses (Labor, material, etc.).
    - Building community partnerships, through city collaborations.

# Poles with multiple hits

- Possible/considered mitigation efforts
  - Increased visibility strips
  - Relocation
  - Raptor Installation





# Pilot program to evaluate Raptor™

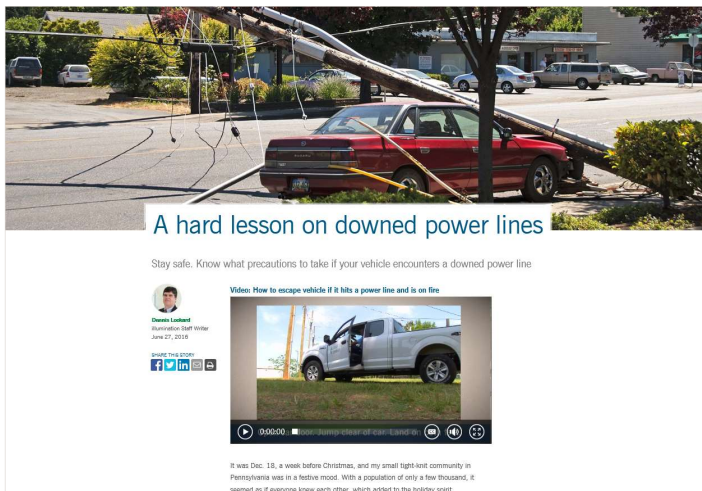
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**Raptor™ is a pole barrier system**

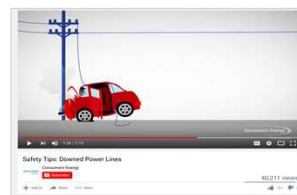


# Other utility car pole safety outreach

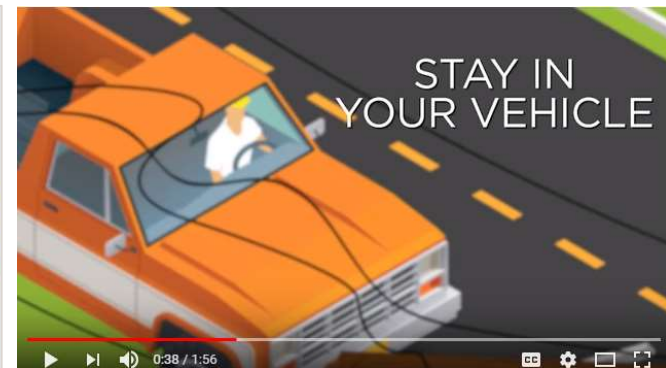
- Websites, infographics & videos -



<https://www.fortisalberta.com/Safety>

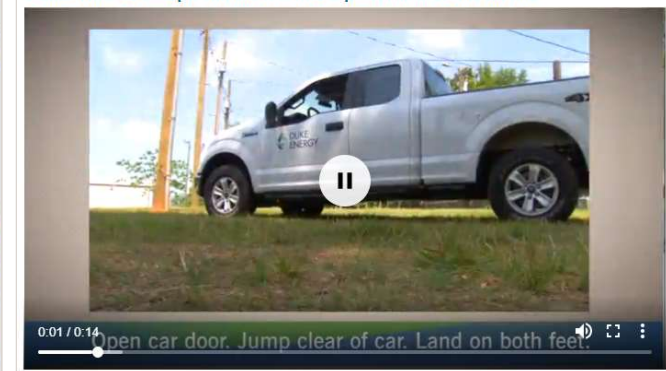


<https://www.youtube.com/watch?v=vqL9SQyXuAk>



[www.youtube.com/watch?v=5\\_of0FzWx4](http://www.youtube.com/watch?v=5_of0FzWx4)

Video: How to escape vehicle if it hits a power line and is on fire



<https://illumination.duke-energy.com/articles/a-hard-lesson-on-downed-power-lines>



# Web – smud.org/DriveSafe

## In development



**Include draft web page  
smud.org/DriveSafe**

- Learn what we're doing to prevent car pole accidents
- Tips to avoid hitting a power pole
- What to do if you hit a power pole
- Statistics
  - Outages, # of poles, costs, etc.

# Community partnership

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- Parent-Teen Workshop for SMUD Customers
  - Scheduled with SMUD Education team
  - Opportunity for SMUD Leader to speak briefly about Distracted Driving campaign
- Train the Trainer workshop for local student leaders
  - Invites to all high schools in SMUD territory
  - Opportunity for SMUD Leader to speak briefly about Distracted Driving campaign
- Participation in 2 SMUD Safety days in 2019
  - To include distracted driving activity for participants
- Logo placement on website



# Questions & Discussion

Thank you!

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