



Building a More Resilient and Reliable Grid with Composite Poles

Kansas Corporation Commission | July 31, 2026

Agenda

- **Background – Why Composite?**
- **Use Cases for Composite Utility Poles**
 - Wildfire Mitigation
- **Wildfire Mitigation Case Studies**



Courtesy Resilient Structures, San Miguel Power, CO



We are proud of our 30 years of innovation and 20 years of utility structure solutions. Looking forward to another 30 years!

We Built Resilient Structures From the Ground Up

\$400M

Dollars invested in composite material science R&D and commercialization

71

Patents we currently hold

13

Trademarks we have registered

Zero

Number of RS Pole failures due to extreme weather.
**That's right.
It has never happened.**

Success Starts with Our Poles

Our 11 composite modules create more than 260 pole configurations.



Resilient Structures is ISO 9001:2015 certified.

RS Poles feature a service life that exceeds 80 yrs & are backed by a 41-year warranty.



Applications from communications, distribution & transmission up to 345KV.

Engineered Resiliency at a Global Scale



RS Poles are deployed by **500+ Utilities in 30+ Countries** across 5 continents.

3 State-of-the Art Factories



Tilbury, Ontario



St George, Utah and Houston, Texas

2005

Introduced first filament wound composite utility pole

2007

Tilbury, Ontario plant started

2023

Houston plant established

Founded as Recycled Solutions
1995

First major installation at Great Lakes Power
2006

St. George, Utah plant established
2020



We've manufactured approx.

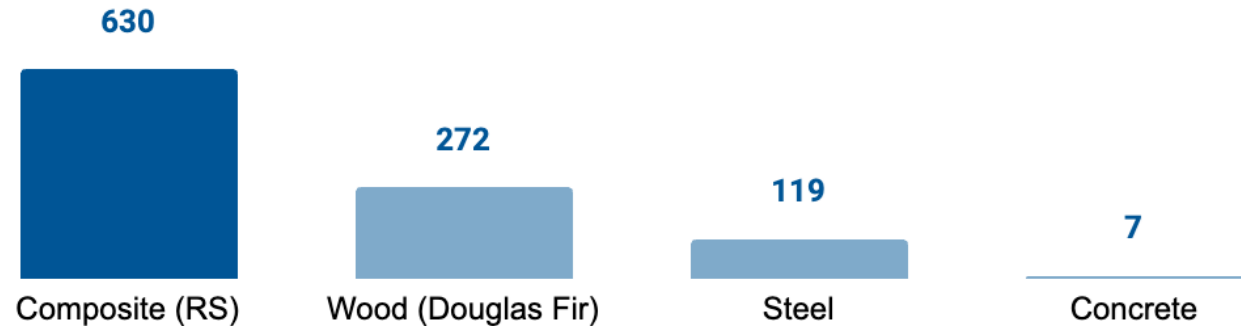
1,200 linear miles of our composite utility poles combined. That would line the distance from El Paso, Texas to Montgomery, Alabama!

Unique Properties of Composite Poles

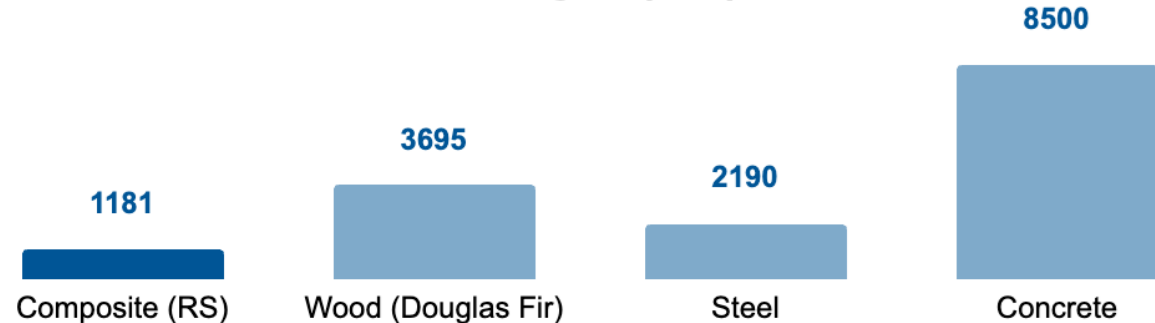
- High specific strength
- Lightweight
- High structural reliability
- Weather resistant (UV stable)
- Corrosion, rot & pest resistant
- Long Life (80+ years)

- **Non-conductive**
- **Self-extinguishing**
- **Fire-resistant**
- **Minimize ignition potential**

Specific Strength (psi·ft³/lb)



Pole Weight (lbs)



Reference: Resilient Structures – www.resilient-structures.com, example 75 ft. pole

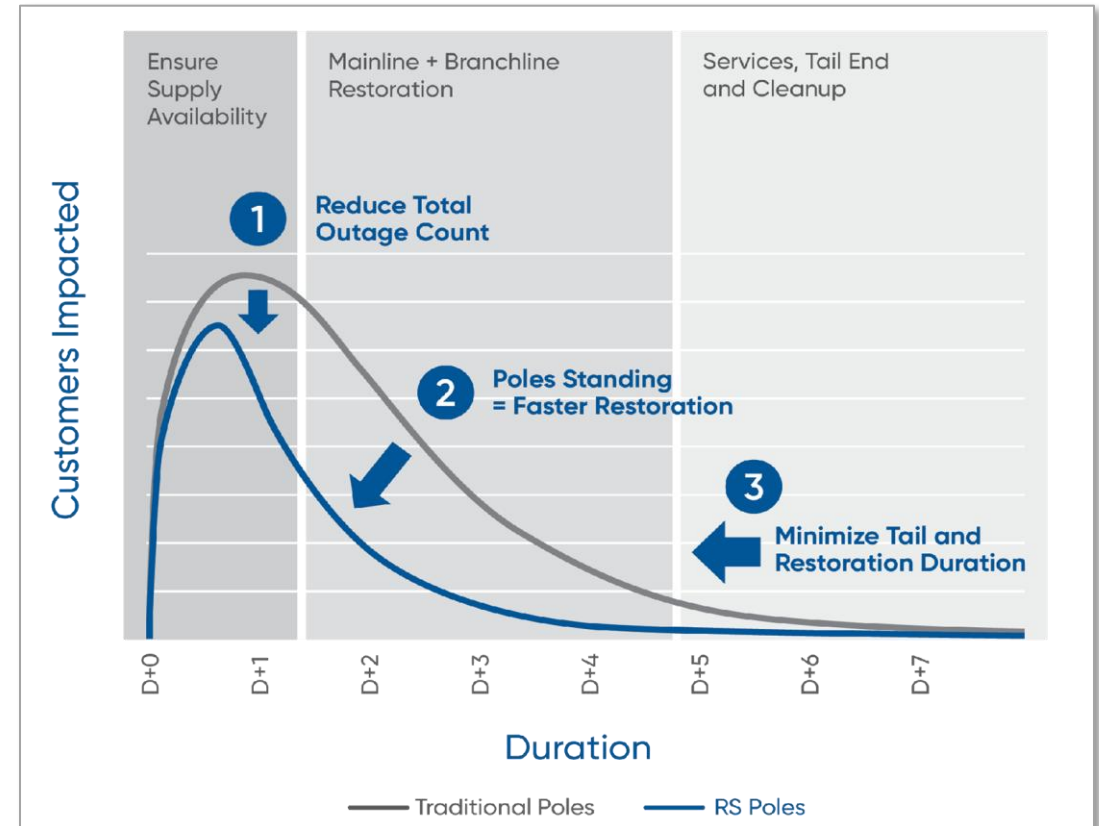
How Composite Poles Support Grid Hardening Strategies

ELIMINATING WEATHER RELATED FAILURES

- Reduces initial failures
- Reduces recovery cost
- Reduces recovery time

IMPACT OF STRATEGIC COMPOSITE POLES USE

- ✓ Targeted use yields more resilient infrastructure hardened against extreme weather & wildfire
- ✓ Ensures unplanned pole failures & storm related cost premiums are mitigated
- ✓ Achieves substantial cost savings over the life vs. traditional pole materials – Lowest TCO



Lower TCO by 20-50%

Based on utility scenarios – grid health, weather & fire impacts, strategic use cases application

Composite Pole Use Cases

- ① Critical Structures & Circuits
- ② Structures with High Installation Costs
- ③ Locations Where Conventional Structures Don't Last

Today's focus



“Composite poles are as strong as concrete but more economical...”

Entergy Texas CEO, speaking on Fox26 News Houston on July 10, 2024

Use Case #3 - Locations where Conventional Structures Don't Last

- Wildfire prone regions
- High wind prone regions
- Moist areas and wetlands
- Salt and alkaline/acidic impacted environments
- Destructive wildlife (woodpeckers, pests) regions



Ackerman Test Method

New benchmark for full-scale wildfire pole testing

Development: In 2011 RS & Dr. Mark Ackerman co-developed, drawing on 20+ years of wildfire research. Conducted over 40+ full-scale wildfire simulated pole tests.

Methodology: Full-scale test with vertically oriented poles

- Realistic wildfire heat transfer/flux and exposure duration
- Sustained mechanical loads during fire exposure
- Post-fire full scale pole bend test confirms residual strength

Credibility: Acceptance by major North America utilities capturing accurate representation of real-world wildfire exposure to poles.



Configurations:

Unshielded, Shielded,
Shielded + Additional thermal
protection layer inserted

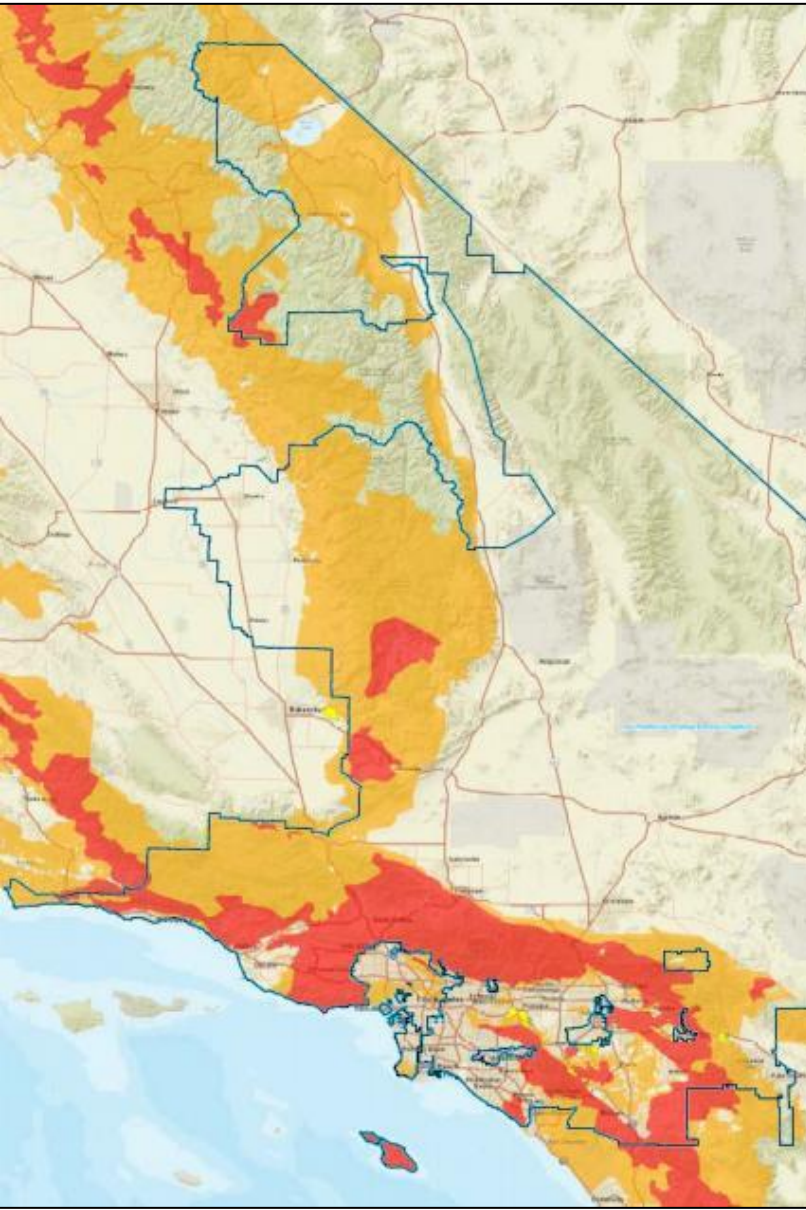
Exposure Duration

1 to 3 minutes, exceeding typical
conditions found in grass land
and even coniferous forest fires

Loading:

Both unloaded and
with a sustained
1,325 lbs. tip load

SCE Case Study

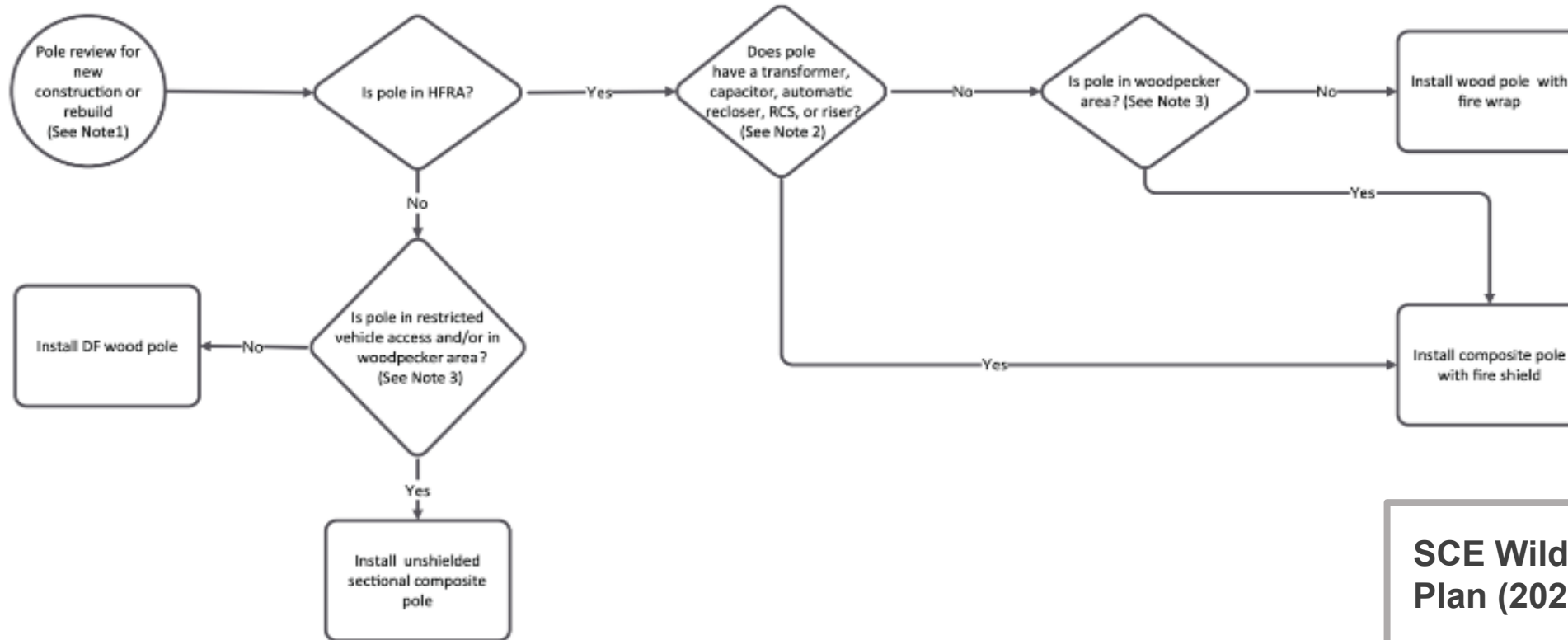


- Catalyst - Thomas Fire (2017), Woolsey Fire (2018)
- Grid Hardening in High Fire Areas - Key Initiatives:
 - **Public Safety Power Shutoff (PSPS)**
 - **Replace distribution conductors with covered conductor**
 - **Implement Fire-Resistant structural materials**
 - Use of Composite Poles in HFTA
 - Simulated Fire Testing – Ackerman Test & Actual Wildfires
 - Testing to Validate Ignition Prevention Capability

- 5 million customers in a 50,000 square mile service territory via 4,300 distribution circuits
- Approximately 91,000 miles of distribution lines supported by 1.4 million distribution poles
- HFRA: Tier 2 & Tier 3 risk areas plus some non-CPUC HFRA ~ 1,100 distribution circuits

Example Utility Decision Tree - Use Cases

Figure 10–2: Pole Decision Tree for New Construction and Rebuilds in HFRA



Note(s):

1. The decision tree applies to new primary pole lines and pole replacements only.
2. Equipment that do not have ground attachments to the pole will be installed on wood pole with fire wrap.
3. This decision box is also applicable to animals, insects, fungus, moisture, and other severe environmental conditions.

SCE Wildfire Mitigation Plan (2023-2025)

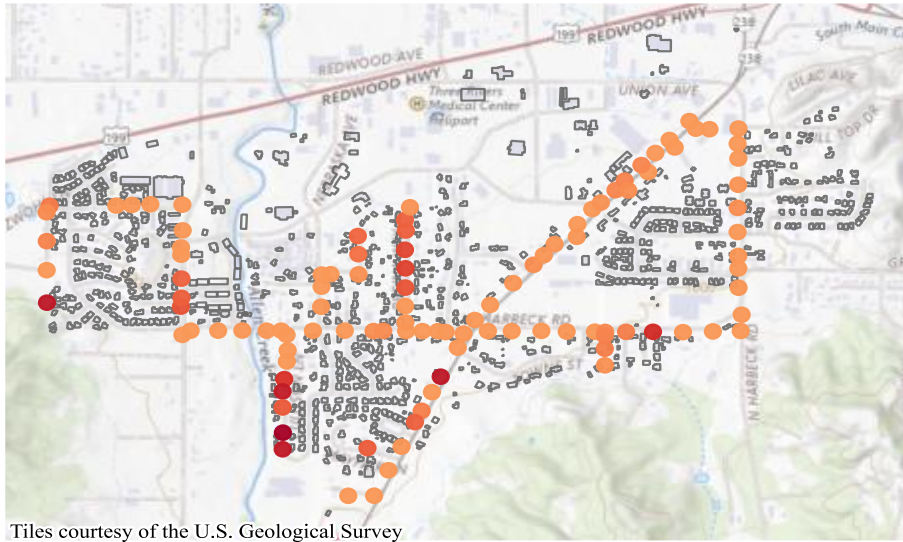
<https://www.sce.com/wildfire/wildfire-mitigation-efforts>

Wildfire Impact Modeling on Adjacent Urban Areas

- For all-wood construction, many pole failures due to secondary urban ignitions of wood poles and loss of capacity
- For all-composite construction, all poles retain sufficient load capacity and survive due to self-extinguishing ability

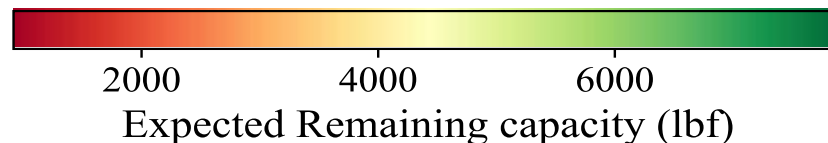
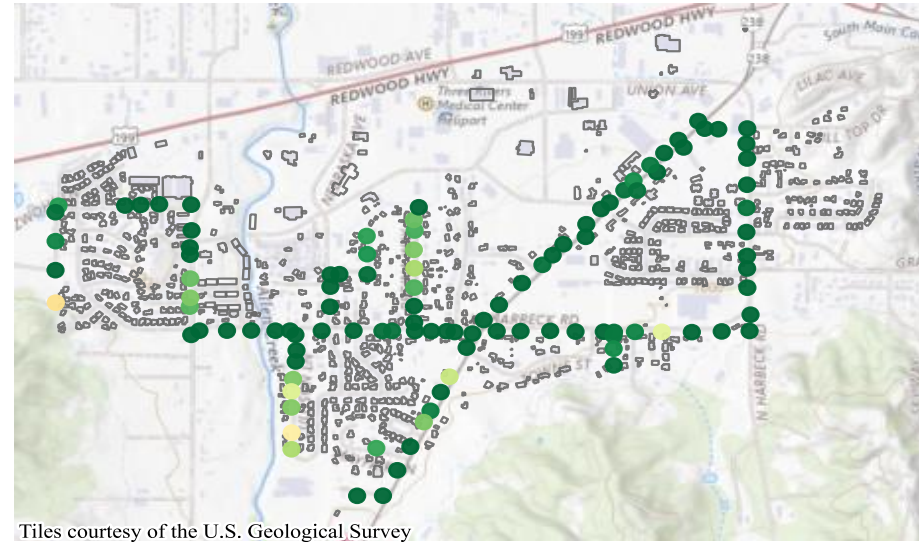
SYP Wood

(a) Class 1 Wood Poles



Composite

(b) RSM0204 Poles





Thank You!

Scott T. Holmes
Chief Technology Officer
Scott.Holmes@RSpoles.com
(484) 653-8520

