

WESTERN AREA POWER ADMINISTRATION

An Agency of the U.S. Department of Energy

# Desert Southwest Region

FY2012 TEN-YEAR CAPITAL PROGRAM MEETING

# AGENDA

- Purpose of the Ten-Year Capital Program
- Types of Projects
- Update on Assets
- Major Accomplishments for FY2011
- Update on Approved Pre-Payment Projects
- Construction Projects Scheduled for FY2012
- Voting Process
- Proposed FY2012 Pre-Payment Projects



# Purpose of the Ten-Year Capital Program

- Describes the challenges, goals, strategies, and accomplishments of Western's Desert Southwest Region
- Identify specific areas of the electrical system that need attention with regard to maintenance and construction
- Identify funding program levels that are needed in order to maintain the reliability of Western facilities and transmission lines
- Does not include the Trust Program — Western support to external customers

# Funding Challenges for DSW

- Appropriated funding is not consistent
- Continuous Resolutions indirectly dictate the execution of projects
- Infrastructure is aging at a faster rate than funding is being acquired
- Pre-payment funding option has significantly helped the DSW position, but additional funding is still needed

# Strategy for Project Selection and Prioritization

- ① Condition of electrical assets
- ① Risk analysis
- ① Amount of appropriated funding
- ① Other sources of funding
- ① Projects identified in the OASIS queue

# Three Sections of the Capital Program

## ➤ Construction Projects

- Typically exceed \$750K and require the use of non-federal labor
- Funded through federal appropriations

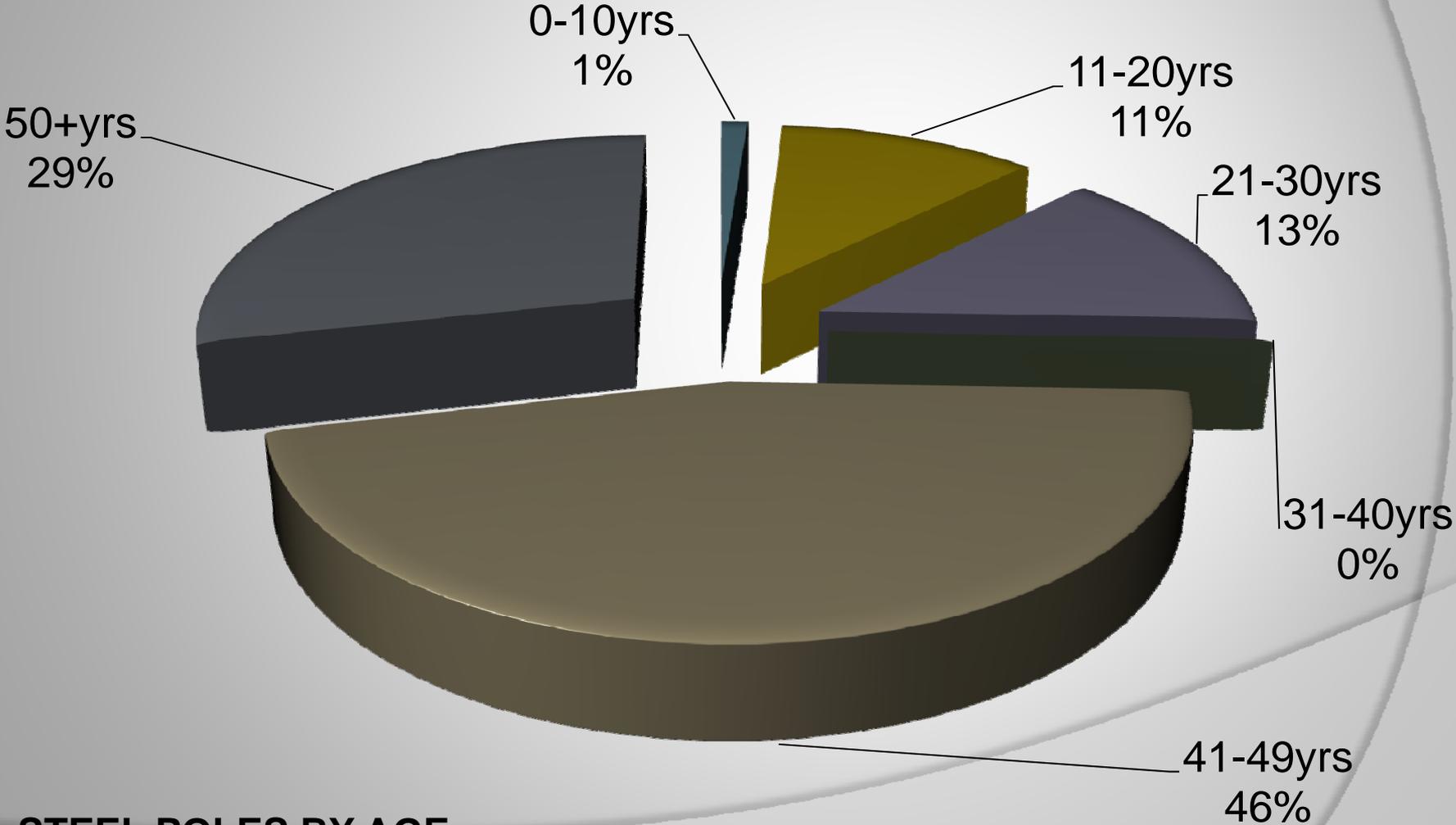
## ➤ Pre-Payment Projects

- Construction projects that are executed using pre-payment funding

## ➤ RRAD's Projects

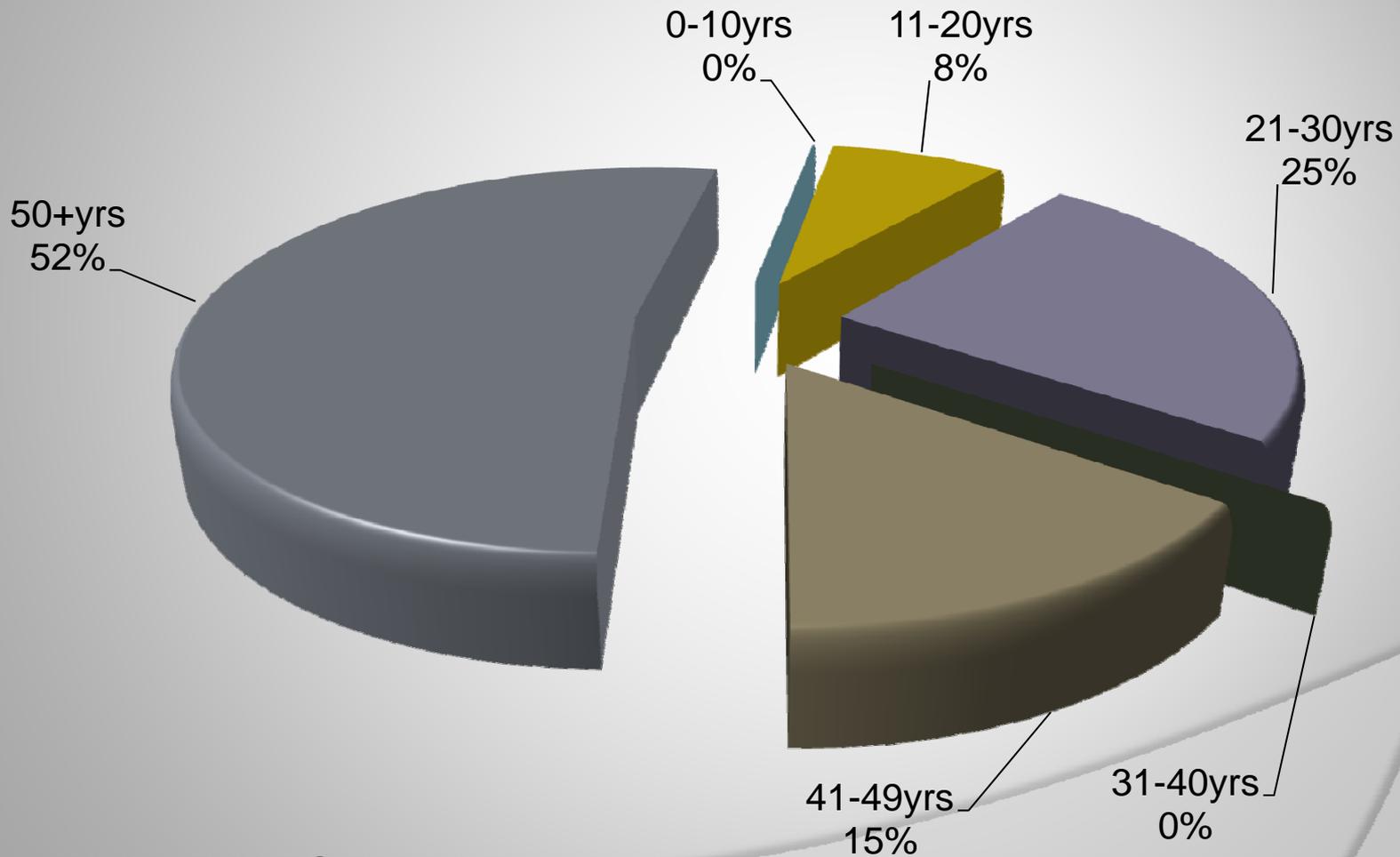
- Typically have a cost less than \$750K and are less complex and shorter duration
- Executed using pre-payment funds

# DSW Transmission Line Assets



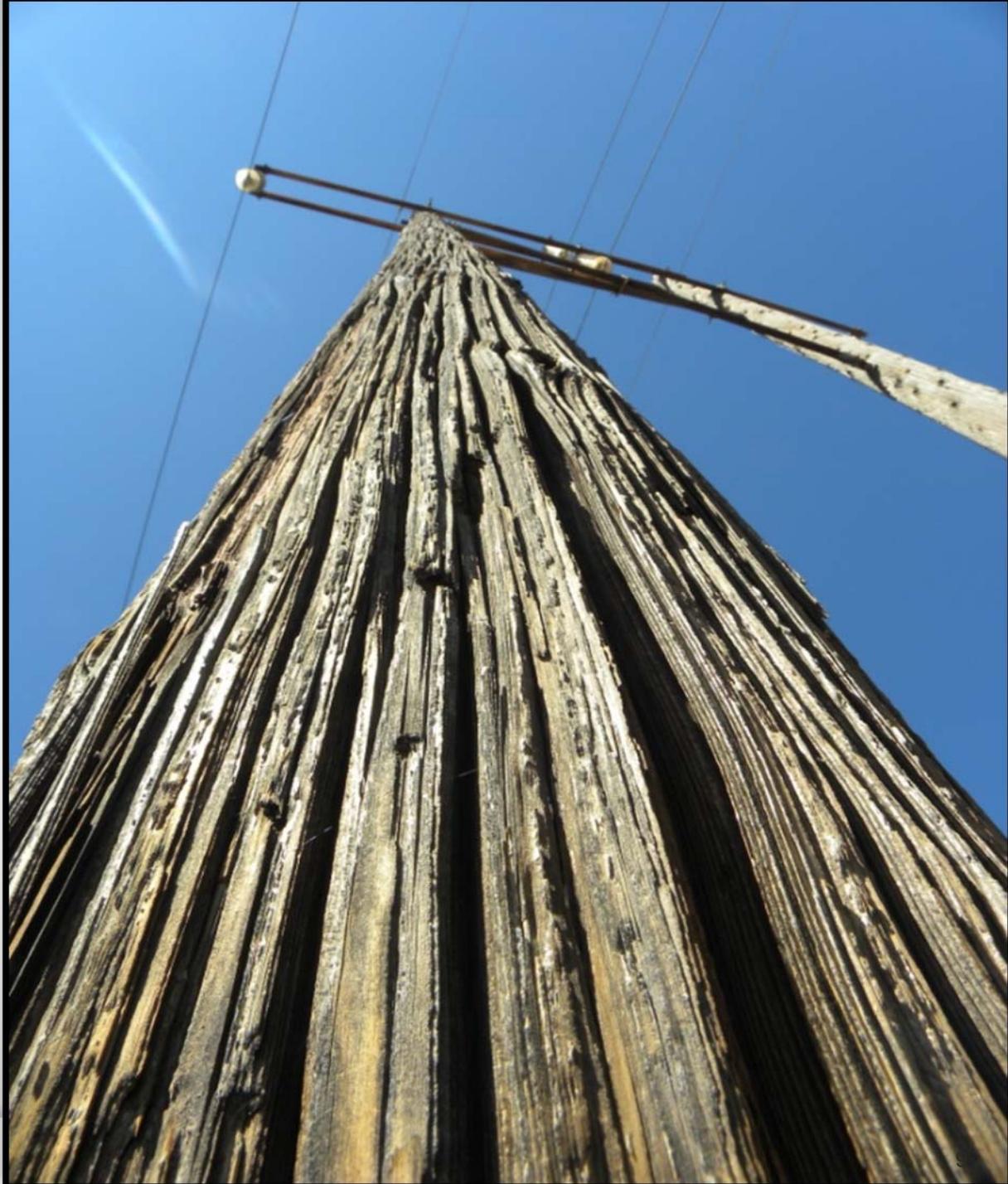
STEEL POLES BY AGE

# DSW Transmission Line Assets



**WOOD POLES BY AGE**

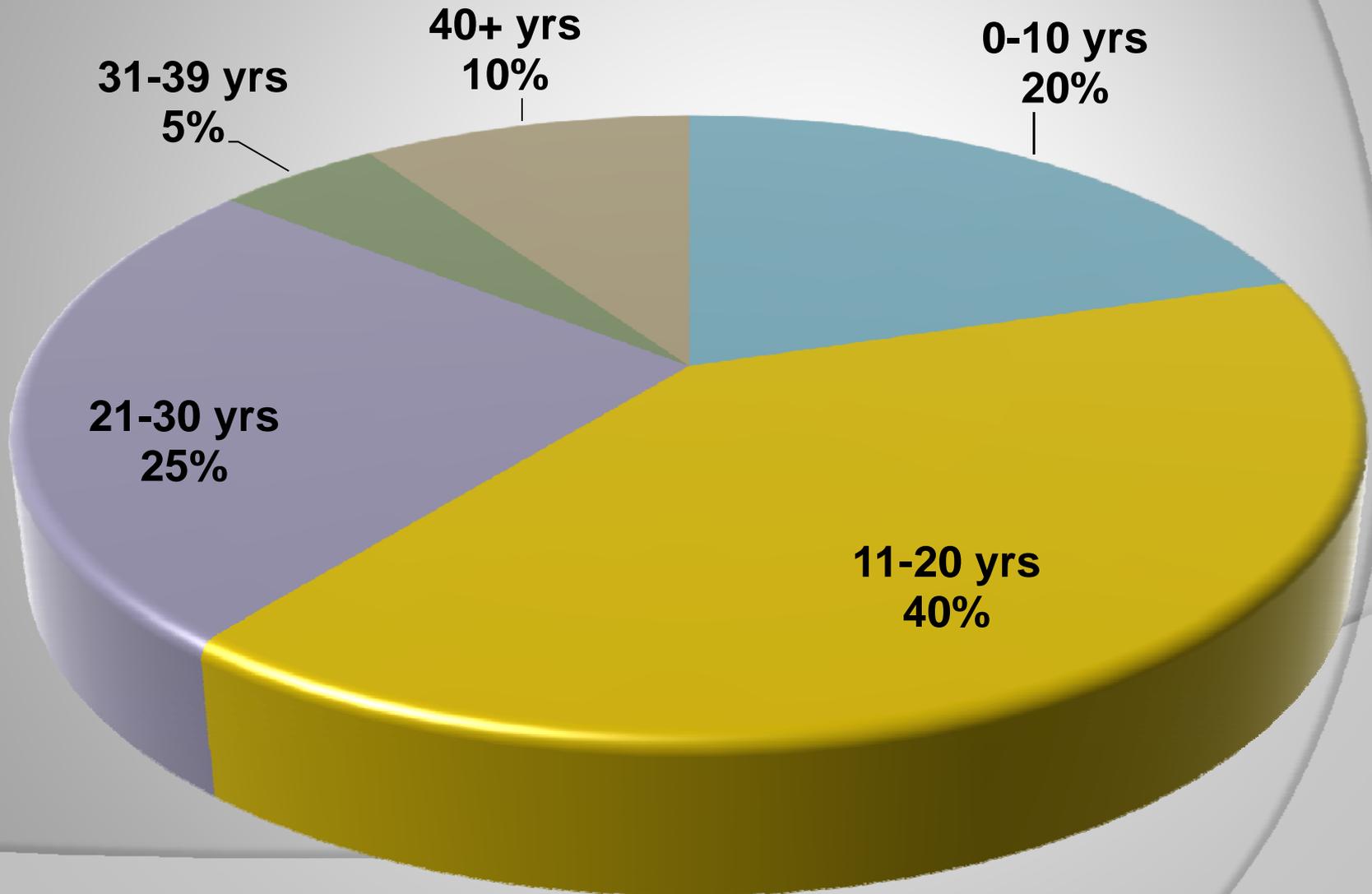
**115-kV  
Wood Pole  
South of  
Phoenix**



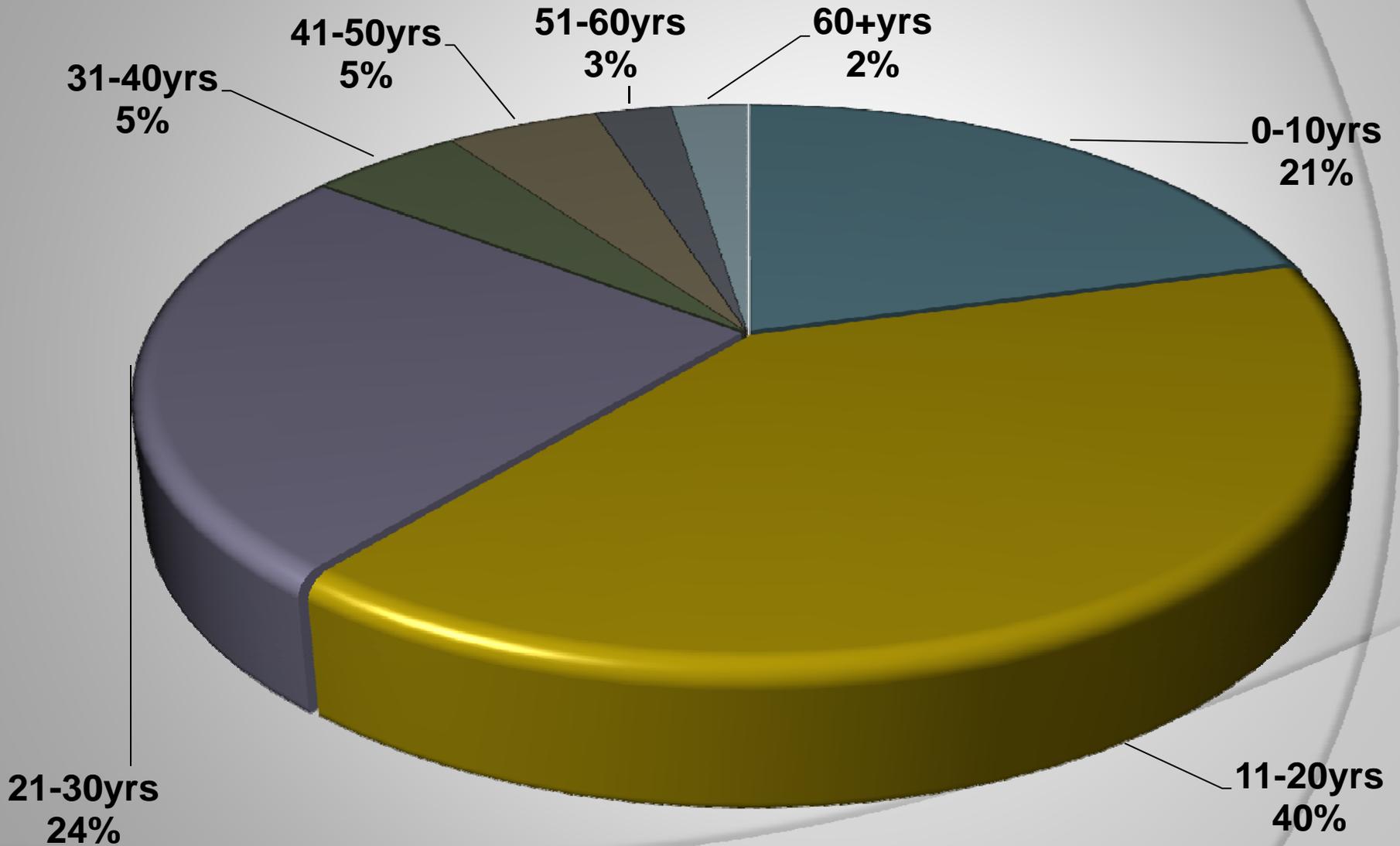
# 161-kV Wood Pole Failure



# DSW Transformer Assets



# DSW Breaker Assets



# Executed Construction Projects FY2011

- Rebuild of Buckskin-Planet Tap 69-kV Transmission Line
- Davis Substation Stage 05
- Award of Davis Substation Stage 06
- Purchase of Coolidge Substation 230/69-kV transformer
- Construction of Gila-Yuma Tap 34.5/69-kV Transmission Line
- Remediation of Basic Substation

# Davis Substation, Stage 05



# Davis Substation, Stage 05



# New Davis Substation Control House





**Gila-Yuma Tap  
34.5/69-kV  
Transmission  
Line**

# Davis Substation Stage 06

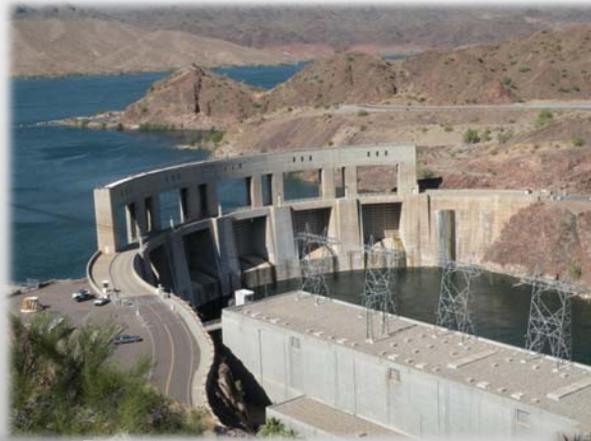
## Foundation Pads



## 230-kV Controls

# Executed Construction Projects FY2011 (cont'd)

- Ordered replacement 345/230-kV transformer for Liberty Substation
- Ordered steel structures for Davis-Kingman Tap Transmission Line Rebuild
- Ordered five 230-kV breakers for Parker Substation



# Executed RRAD's Projects FY2011

- Replaced four 345-kV PCB's at Flagstaff Substation
- Re-gasketed 345/230-kV transformer at Pinnacle Peak Substation
- Completed design on 230/138-kV transformer installation at Glen Canyon Substation and awarded construction contract



# Executed RRAD's Projects FY2011 (cont'd)

- Replaced 50% of aging microwave systems from Phoenix to Mexican Hat communication sites
- Awarded construction contract to address erosion issues on Tucson-Apache 115-kV Transmission Line
- Replaced substation relays at Glen Canyon



# Previously Approved Pre-Payment Projects

- Thornton Road-Empire 115-kV  
Transmission Line Rebuild—2010
- Empire-ED5 115-kV Transmission Line  
Rebuild—2010
- ED4-ED5 Transmission Line Rebuild—2011

# Thornton Road-Empire Update

## ➤ **Scope**

- 13.2 miles of wood pole transmission line being replaced with steel at 230-kV

## ➤ **Major Project Milestone Schedule**

- September 2011 awarded construction contract
- January 2012 complete construction
- All GFE purchased

## ➤ **Project Cost**

- Estimated cost = \$16.0M
- Cost to Date\* = \$ 9.3M

# Empire-ED5 Update

## ➤ **Scope**

- 9.2 miles of wood pole transmission line being replaced with steel at 230-kV

## ➤ **Major Project Milestone Schedule**

- November 2011 award construction contract
- June 2012 complete construction

## ➤ **Project Cost**

- Estimated cost = \$12.5M
- Cost to Date\* = \$ 6.1M
- Appropriated funds used for pole purchase

# ED4-ED5 Update

## ➤ **Scope**

- 9.1 miles of wood pole transmission line being replaced with steel at 230-kV

## ➤ **Major Project Milestone Schedule**

- Order GFE in 2012
- June 2012 award construction contract
- January 2013 complete construction

## ➤ **Project Cost**

- Estimated cost = \$14.9M
- Cost to Date\* = \$ 3.9M

# Cost Savings from Pre-Payment Projects

## ➤ Cost Savings

- Materials are costing less than expected
- Efficiencies in design from previous projects

## ➤ Proposed Use

- Salt River-Pima-Maricopa Indian Community (SRPMIC) – Rogers-Pinnacle Peak Lines
- New ROW Agreement to cost \$12M
- \$6M from Parker Davis/\$6M from CRSP
- Agreements are expected to be completed in 2012
- Proposal outside the current December schedule

# Construction Projects Scheduled for FY2012

- Closeout Davis Substation Stage 05
- Construct Davis Substation Stage 06
- Completion and Closeout Gila-Yuma Tap
- Award and construct Davis-Kingman Tap
- Design installation of 345/230-kV transformer at Liberty Substation
- Design installation of replacement circuit breakers at Parker Substation

# RRAD's Projects Scheduled for FY2012

- Complete Phoenix to Mexican Hat communication upgrades
- Complete construction of Glen Canyon Substation, Stage 08
- Erosion repairs on Tucson-Apache and Hoover-Mead Transmission Lines
- Wood pole replacement program
- Completion of communication building at Black Point Mountain



# **PRE-PAYMENT VOTING PROCESS**

**Florence Brooks  
Financial Program Analyst**

# The Pre-Payment Voting Process

- Proposed Pre-Payment Projects are submitted to the participating customers for review
- Projects are approved or denied on December 7, 2011
- What's required to participate in the vote?
- How are the votes accepted and tabulated?



# **FY2012 PROPOSED PRE-PAYMENT PROJECTS**

**Chris Lyles  
Project Manager**

# Proposed FY2012 Pre-Payment Projects

#	Proposed Project Name	Project Cost
1	Coolidge Substation 230/69-kV Transformer Addition	\$ 6,110,000
2	Bouse Switchyard 161-kV Rebuild	\$ 4,970,000
3	ED4-ED2 115-kV Transmission Line Rebuild	\$ 11,100,000
	<b>Total Proposed Pre-payment Project Plan</b>	<b>\$22,180,000</b>

# Coolidge Substation 230/69-kV Transformer Addition

## ➤ Scope

- Additional 230-kV bay and 69-kV substation
- New 230/69-kV 150 MVA transformer
- New control house and cap bank

## ➤ Schedule

- Complete design February 2012
- Award construction contract September 2012
- Energize January 2014

## ➤ Cost

- Total Project Cost = \$7.71M
- Transformer Purchase (Complete) = \$1.60M
- Remaining Project Cost (Pre-Payment) = \$6.11M



# Coolidge Substation



# Bouse Switchyard 161-kV Rebuild

## ➤ Scope

- Convert tap to 230-kV ring bus
- Design capable of breaker-and-a-half conversion

## ➤ Schedule

- Complete design February 2012
- Award construction contract October 2012
- Energize Spring of 2014

## ➤ Cost

- Total Project Cost = \$7.83M
- Project Cost to Date = \$2.86M
- Remaining Project Cost (Pre-Payment) = \$4.97M



# Existing 161-kV Bouse Tap



# ED4-ED2 115-kV Transmission Line Rebuild

## ➤ Scope

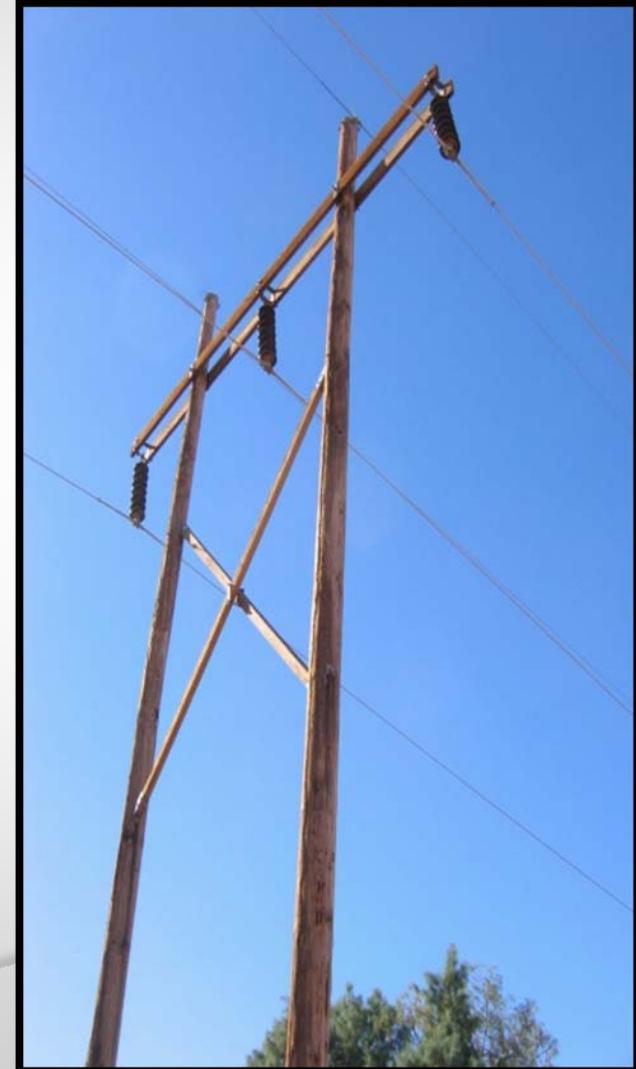
- Rebuild existing 115-kV wood pole system on steel monopole to 230-kV standards
- Double circuit capable with one circuit installed as 1272 ACSS

## ➤ Schedule

- Complete design August 2012
- Award construction contract April 2013
- Energize Spring of 2014

## ➤ Cost

- Total Project Cost = \$11.1M
- Project Cost to Date = \$ 0.0M
- Remaining Project Cost = \$11.1M  
(Pre-Payment)





# Questions?

