

# Basic Substation, Phase 2 Remediation Project – Project History

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- Basic Substation was constructed in 1942 by a Federally-funded private company. The site ownership was transferred multiple times until Western took possession from USBR in 1976.
- In 1991, the Nevada Division of Environmental Protection (NDEP) instructed multiple companies around the Basic Magnesium Plant complex to investigate and remediate environmental contamination in the area.
- In the late 1990's, Western entered into an agreement with the Colorado River Commission of Nevada (CRC) to transfer all electrical service out of Basic Substation so the facility could be decommissioned, demolished, and remediated.
- Between 1994 and 2001, demolition was started and the remediation of two building sites was completed.

# Basic Substation, Phase 2 Remediation Project – Present Status

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- Between 2001 and 2008, Stage 1 of the remediation was completed, including any associated sampling and delineation in order to remove contaminated soil from the site, demolish and remediate the control building, and demolish and remediate the yard equipment.
- In 2008, a comprehensive site investigation was conducted, and a Stage 2 remediation work plan was submitted to the NDEP, and approved.
- Western received \$18.6 million in non-reimbursable appropriated funding for Stage 2 of the remediation in fiscal year 2010.
- A contract for Stage 2 of the remediation was awarded in July 2010.
- To date, the work continues in accordance with the NDEP approved work plan, and is scheduled to be completed in December 2011.









# RCM (Reliability Centered Maintenance) Consolidation Project

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## ➤ Scope/Benefit:

- Consolidate Regional RCM Studies & Job Plans into One Western Set
- Benefits
  - Optimization of Western's RCM Program
  - Better Prepared and Standardized for Compliance Audits
  - Increased Business Efficiencies in Training and Cross Utilization of Resources
- Western RCM Team & Regional SMEs

## ➤ Results:

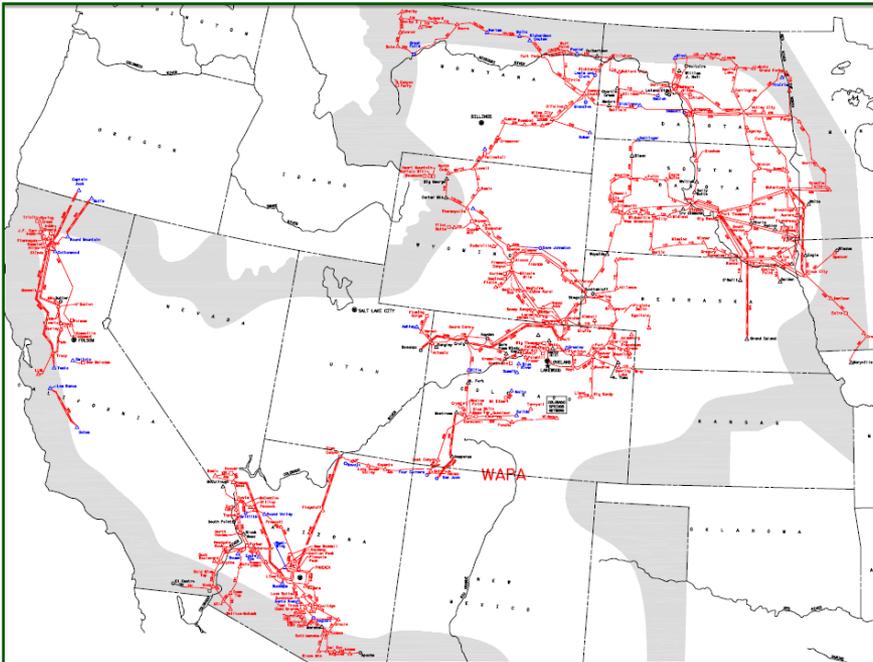
- Completed in March 2011 in less than 9 months
- Approximately 70 Job Plans were reviewed
- **95 Percent Consistency Achieved!**
- Next Steps/Implementation

# Western's Construction & Rehabilitation (C&R) Program Initiative

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- Educate DOE & OMB on Western's Needs
  - Met in October 2009 and October 2010
  - Met with DOE the week of June 20<sup>th</sup> on FY13 C&R Budget
  - Plan to meet with DOE & OMB in September 2011
  - Continue to extend the opportunity for both to visit Western's infrastructure in the field
- Provide Customers/Customer Representatives with Improved FY Budgetary Request Information
- Engage Western's Customers to find a Long-Term Solution

# Infrastructure Overview



- Transmission Lines – 17,107 circuit miles
- Substations – 315
  - Power Transformers – 299
  - Power Circuit Breakers – 1727

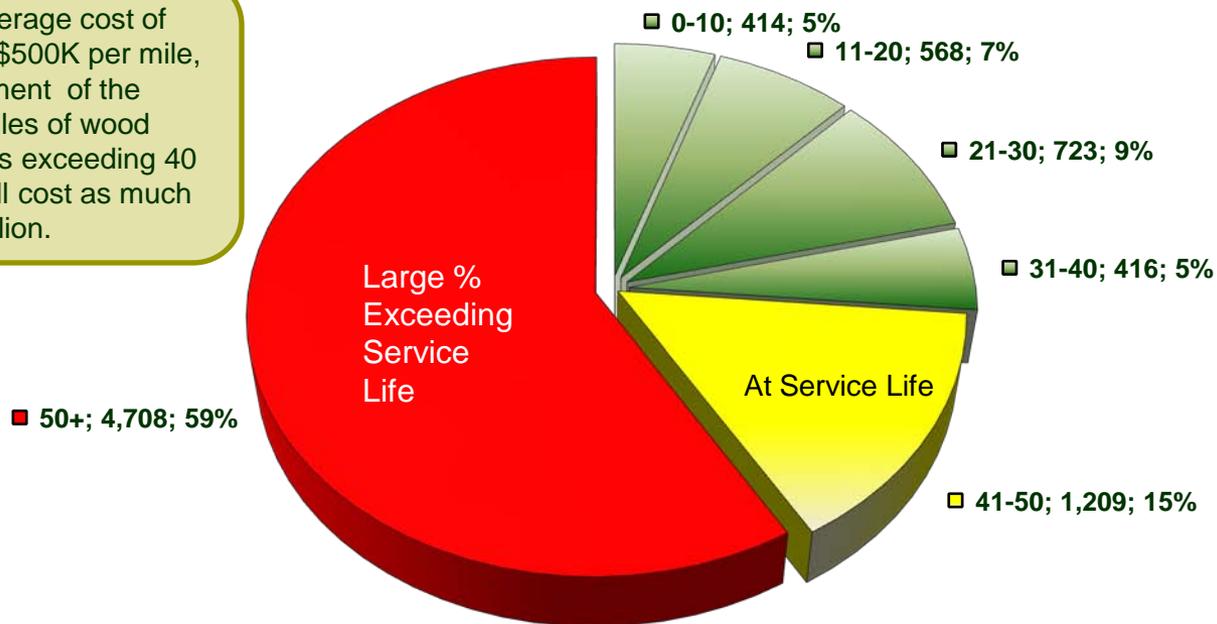
# System Condition – Transmission Lines

## Age and Miles of Wood Pole Transmission Lines

74% exceed 40 yrs

59% exceed 50 yrs

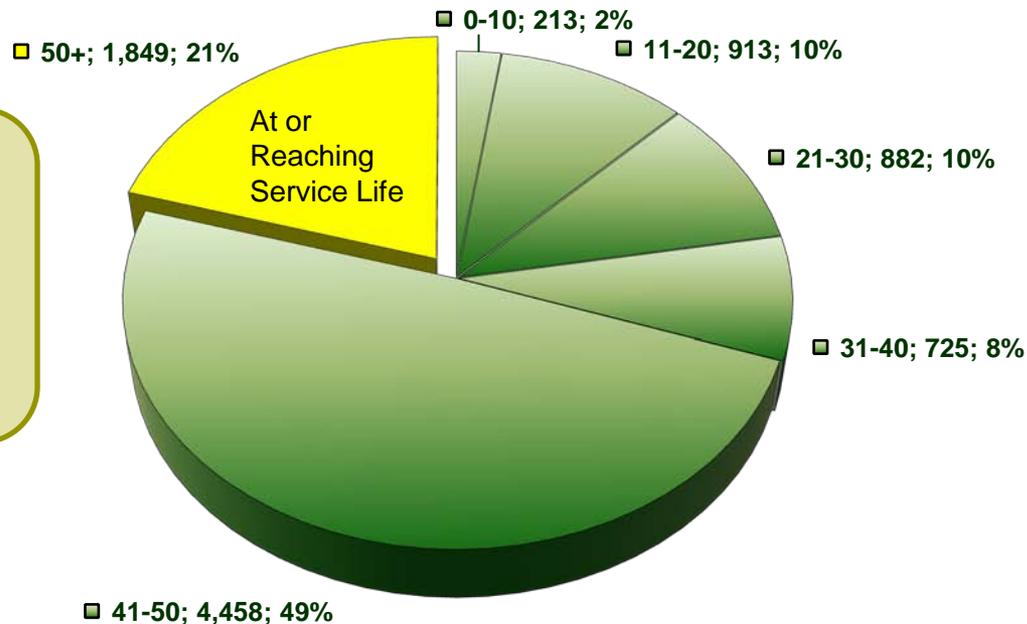
At an average cost of approx. \$500K per mile, replacement of the 5,917 miles of wood pole lines exceeding 40 years will cost as much as \$3 billion.



# System Condition – Transmission Lines

## Age and Miles of Steel Pole/Tower Lines

70% exceed 40 yrs  
21% exceed 50 yrs



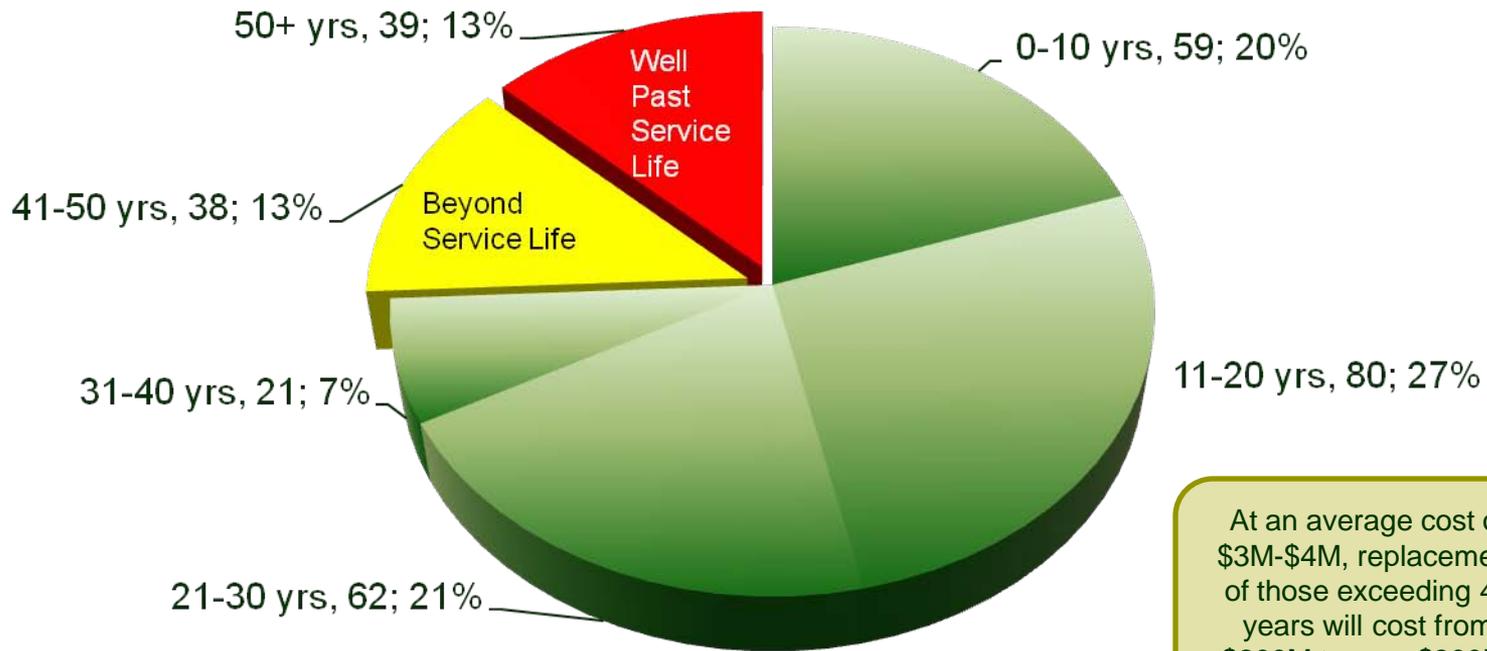
At an average cost of approx. \$500K per mile, replacement of the 1,849 miles of steel structure lines exceeding 50 years will cost nearly \$1 billion.

# System Condition – Power Transformers

## Power Transformer Age (40 year Service Life)

26% exceed 40 years

13% exceed 50 years

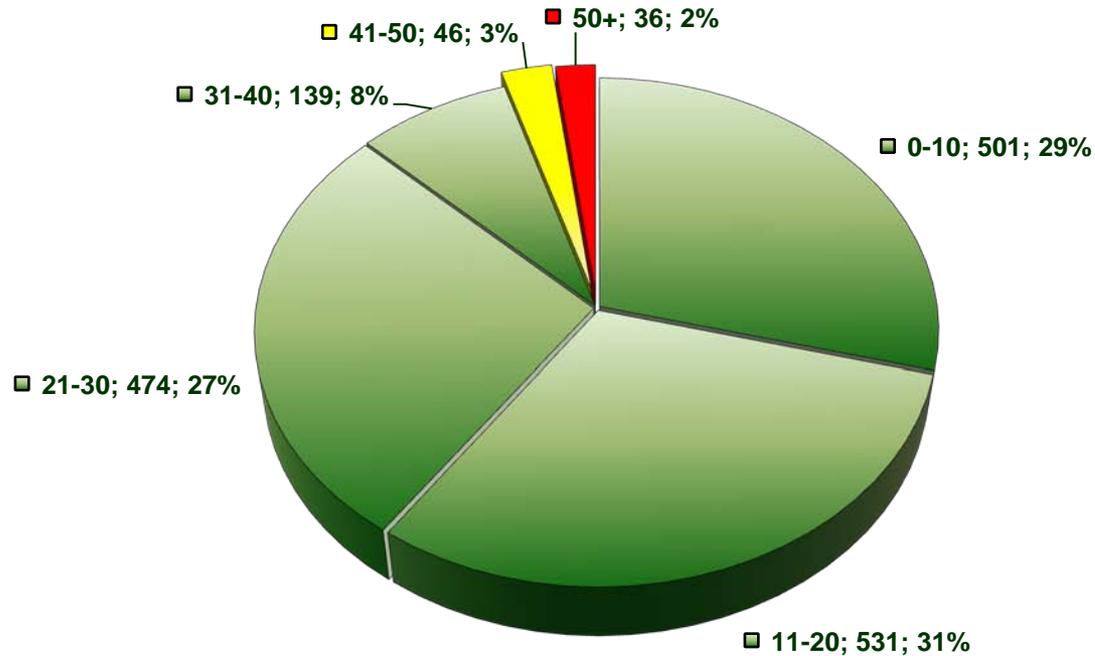


At an average cost of \$3M-\$4M, replacement of those exceeding 40 years will cost from \$200M to over \$300M.

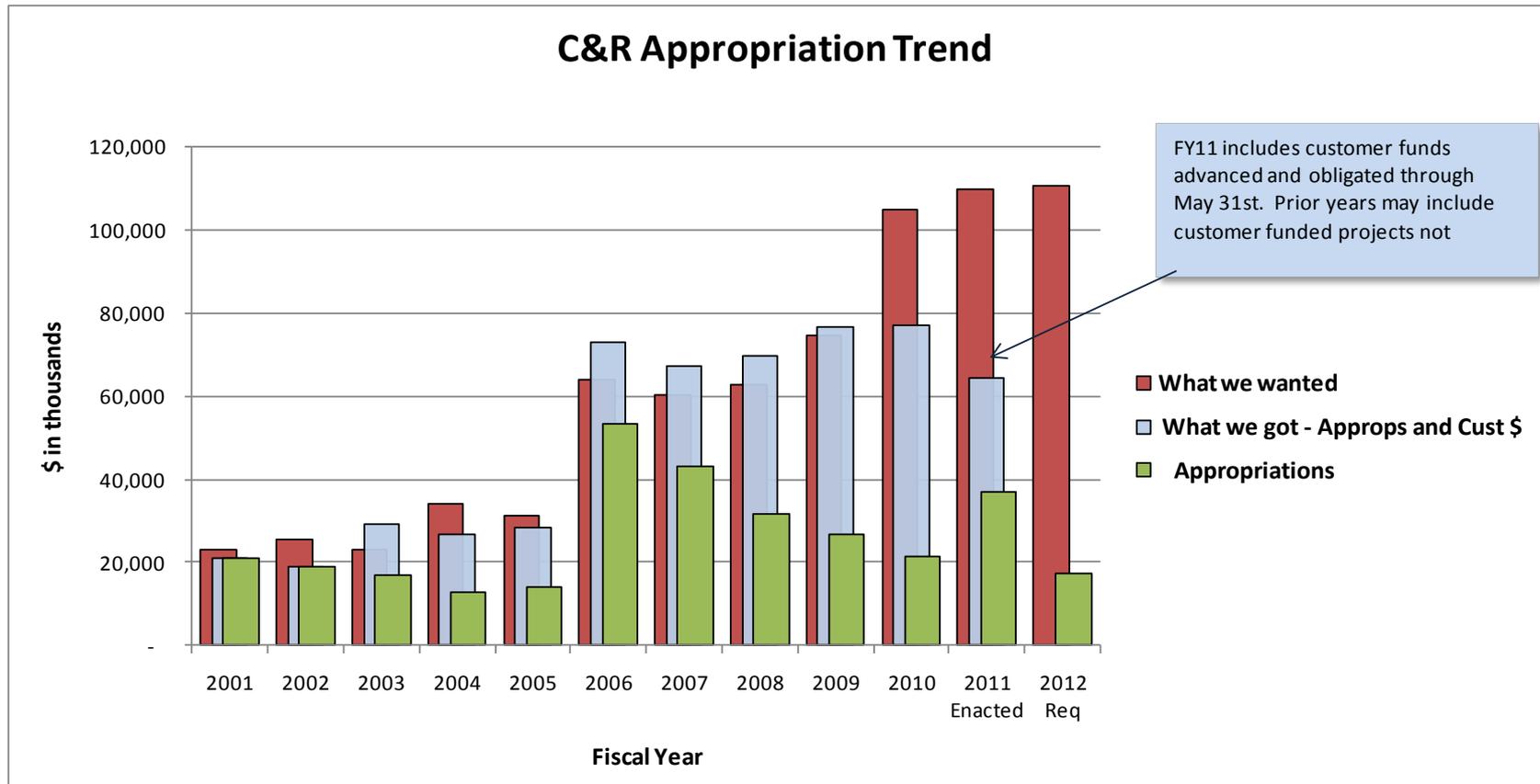
# System Condition – Circuit Breakers

## Power Circuit Breaker Age (30 year Service Life)

5% exceed 40 yrs  
2% exceed 50 yrs



# Historical and Future (thru FY12) C&R



# Present Funding Sources for C&R

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- Appropriations
- Advanced Customer Funding
  - Western States (UGP & RMR)
  - Advanced Customer Funding (SNR)
  - Pre-Payments for Construction (DSW)
- ARRA Borrowing Authority not available for Western's routine capital needs; ARRA must have tie to new renewables.
- Net Zero/Reclassification of Receipts is not available for C&R. It's use is limited to annual expenses (non-capital).

# New Funding Sources for C&R?

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- June 28<sup>th</sup> - Western/Customer Brainstorming Ideas:
  - Advanced Customer Funding – Expand Use
  - Revolving Funds (with C&R included)
  - Expand TIP Borrowing Authority to cover C&R
  - Rate Adder to Fund Capital
  - Customer Borrowing & Provide Funding
- Red Flags:
  - Retain Current Repayment System & Cost-based Rates
  - Consider all three Agencies (BOR, WAPA, COE)
  - Both Customer & Congressional Oversight
  - Western to Retain Ownership
- Small Western Customer Group Formed

# Integrated Capital Asset Management



Western Foreman oversees Dawson County Project.  
Linemen span out three phases and change-out crossarms.

# Integrated Capital Asset Management Today

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- Effective maintenance reliability program in place - includes RCM
- Good use of common system to track many assets
- Age data available and used for transmission lines, transformers, and circuit breakers
- Condition and risk factors distributed among multiple data sources – data integration difficult
- On-going planning and prioritization with customers.
- Unstable funding can drive long-term decisions

# Integrated Capital Asset Management Challenges



Weathered and burned 115-kV transmission line pole south of Phoenix, AZ

- Increasing power system availability, reliability, compliance, and performance demands
- Assets reaching or exceeding design lives
- Declining appropriated resources
- Relatively fixed revenue stream

# Integrated Capital Asset Management

## Formal Integrated Approach

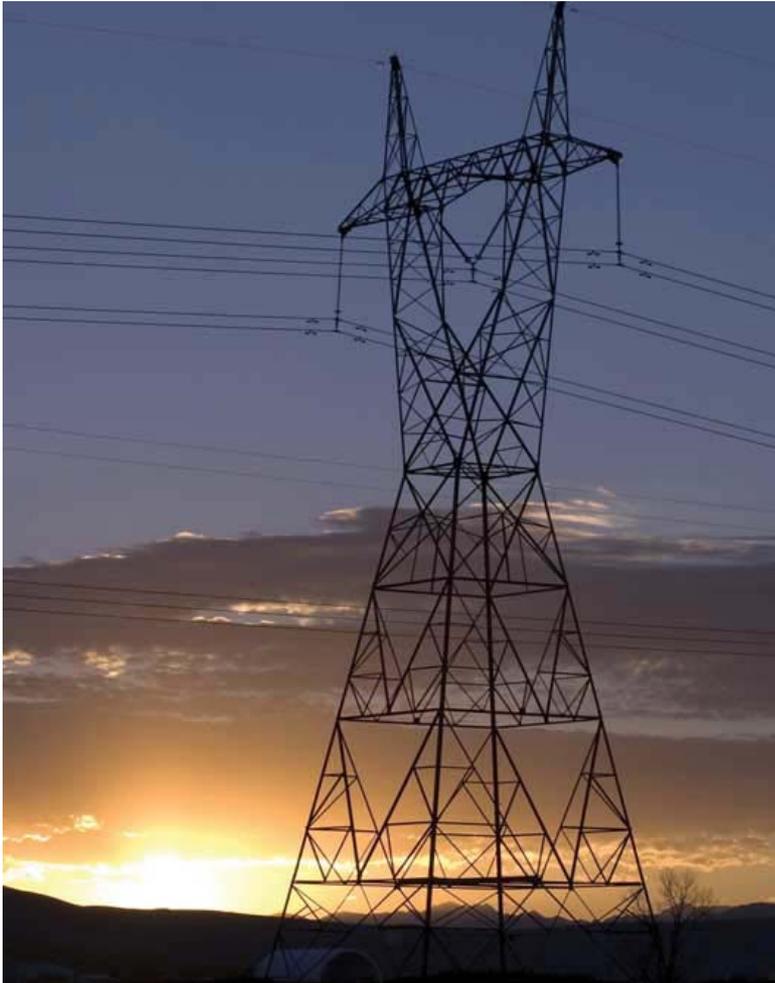
- Overcome challenges and ensure continued success
- Improvement risk analysis process to support project prioritization
- Improved asset processes for:
  - Asset condition
  - Consequence of failure
  - Criticality
- Better support decision-making
- Long-term endeavor - just getting started



*The system is only as strong as its weakest link.*

# Integrated Capital Asset Management

## Near Term Focus



- Internal and external benchmarking
- Data consistency and common practices
- Better use of existing tool information
- Find long-term path to an integrated approach