



Desert Southwest Region Transmission Ten-Year Plan

Fiscal Years 2027-2036

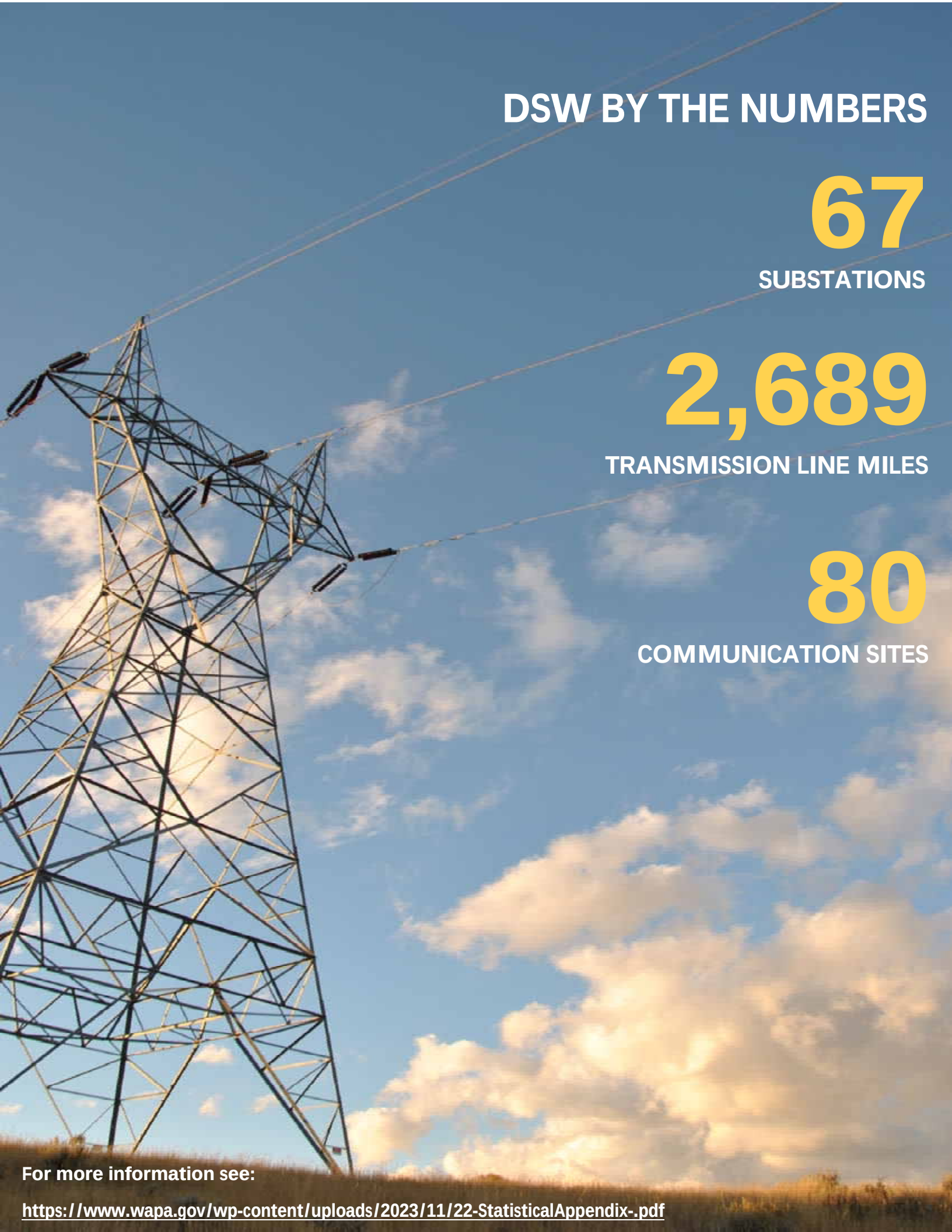


Contact the Ten-Year Plan

Questions or comments are always welcome.

E-mail: DSW_TenYearPlan@wapa.gov





DSW BY THE NUMBERS

67

SUBSTATIONS

2,689

TRANSMISSION LINE MILES

80

COMMUNICATION SITES

For more information see:

<https://www.wapa.gov/wp-content/uploads/2023/11/22-StatisticalAppendix-.pdf>

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1. Meeting Agenda

Virtual Meeting - will be held via Microsoft Teams

Thursday, September 24, 2026 | 1 p.m. to 3 p.m. Mountain Standard Time (Arizona)

A. JOIN MEETING VIRTUALLY

The Microsoft Teams video conferencing and call-in number are available on WAPA’s website:

<https://www.wapa.gov/regions/DSW/Pages/10-year-capital-program.aspx>

B. OBJECTIVE

To provide transmission customers with Western Area Power Administration Desert Southwest Region’s 10-Year Plan that includes the planned use of prepayments for capital construction projects and rate analysis from 2027 to 2036. The presentation will also include updates on the 10-Year Plan. A customer vote will also take place on modifications to the Prepayment Memorandum of Understanding (MOU).

C. MEETING TOPICS

- 1) Prepayment MOU Vote
- 2) Annual Meeting Cycle
- 3) Draft Ten-Year Plan (TYP) Recap
- 4) Final Ten-Year Plan
- 5) Prepayment Vote Preview
- 6) Next Steps



2. Table of Acronyms

AOA	Analysis of Alternatives
ACSR	Aluminum Conductor Steel Reinforced
ACSS	Aluminum Conductor Steel Supported
APS	Arizona Public Service
BLM	Bureau of Land Management
BSE-KOF	Bouse to Kofa transmission line
CAP	Central Arizona Project
CRIT	Colorado River Indian Tribes
CRSP	Colorado River Storage Project
DOE	Department of Energy
DSW	Desert Southwest Region
EA	Environmental Assessment
GLA-KNB	Gila to Knob transmission line
HQ	Headquarters
Intertie	Pacific Northwest-Pacific Southwest Intertie Project
kV	Kilovolt
kcml	1,000 Circular Mils
MVA	Megavolt-ampere
NERC	North American Electric Reliability Corporation
O&M	Operations and Maintenance
OGW	Overhead Ground Wire
OPGW	Optical Overhead Ground Wire
OTR	One Transmission Rate
PCB	Polychlorinated Biphenyl
P-DP	Parker-Davis Project
PPK-RGS	Pinnacle Peak to Rogers transmission line
RM	Rocky Mountain
ROW	Right-of-Way
SF6	Sulfur Hexafluoride
SN	Sierra Nevada
SRP	Salt River Project
UGP	Upper Great Plains



3. Introduction

Western Area Power Administration (WAPA) markets and delivers renewable, reliable, cost-based federal hydroelectric power and related services within a 15-state region of the central and western parts of the United States. WAPA is one of four power marketing administrations within the U.S. Department of Energy whose role is to market and transmit electricity from multi-use water projects. WAPA's 17,000 circuit mile transmission system carries electricity from 57 hydropower plants operated by the Bureau of Reclamation, U.S. Army Corps of Engineers and the International Boundary and Water Commission.

WAPA's four primary regions include Upper Great Plains (UGP) located in Billings, Montana; Rocky Mountain (RM) Region located in Loveland, Colorado; Sierra Nevada (SN) Region located in Folsom, California; and Desert Southwest (DSW) Region located in Phoenix, Arizona. In addition to the four regions, a Management Center is located in Salt Lake City, Utah. All regions are supported by a central Headquarters (HQ) office located in Lakewood, Colorado. HQ serves many diverse customers, ranging from Congress to Native American power customers, special interest groups and WAPA's regional offices. HQ is responsible for designing WAPA's electrical projects and handles most of the support services such as legal and human resources.

DSW sells power in Arizona, Nevada, and southern California. The power marketed by DSW is generated at Bureau of Reclamation dams including Hoover, Parker and Davis along the Colorado River. The recipients of this power include nearly 70 municipalities, electric cooperatives, federal and state agencies, irrigation districts and Native American tribes in the southwestern U.S. DSW is committed to maintaining and operating a reliable transmission system. DSW's 10-Year Plan provides both a capital investment plan, as well as a funding plan, that will maintain reliable power delivery to WAPA DSW's customers. The purpose of DSW's 10-Year Plan is to clearly describe challenges, goals, objectives, strategies, and accomplishments, as well as provide a mechanism for customer collaboration.



Figure 1. DSW Region

DSW's Ten-Year Plan is revised annually in response to:

- Approved funding allocations for the budget year
- Optimized project priorities
- Emerging issues within the transmission system
- Mandates or regulatory requirements
- New contractual requirements



4. Status of the Capital Program

At the Supplemental TYP meeting held on June 17, 2026, several projects anticipated to experience higher costs were presented. These projects include Parker – Blythe 161kV #2 Rebuild, Gila Substation 69kV Substation Rebuild, and the Oracle – Tucson 115kV Rebuild. The causes for increased costs are tied to longer material lead times, time between the study and approved vote, inflation of materials, equipment, and construction labor.

WAPA's Capital O&M program has continued to experience fluctuations in appropriation amounts and delays in receiving funds. In April, WAPA also introduced a plan to fund the Capital O&M program with prepayment funds beginning in FY27 (see Section 7 for additional details). For the Memorandum of Understanding (MOU, 2010) to facilitate a vote on the Capital O&M Program, MOU modifications were made to better align the document with the Joint Planning Agreement (JPA, 2019). These modifications include references to JPA definitions where possible and the addition of a new term "DSW's Capital Program" to include both Construction and Capital O&M projects. The MOU also established the One Transmission Rate (OTR) as DSW's pricing mechanism for long-term firm transmission service to include all eligible participants, not just Parker-Davis and Intertie customers.

In addition to more certainty of mission critical funding, some of the benefits of this transition would include additional visibility, reporting and customer input. The MOU modification vote will take place on September 24, 2026. If the MOU modification is approved, the Capital O&M program will be voted on during the Prepayment Vote Meeting in early December.

For more information on DSW's Capital program, see <https://www.wapa.gov/about-wapa/regions/dsw/10-year-capital-program/>.



5. Active Construction Projects

The following summary table lists the active construction projects described further in section 5.

PROJECT NAME	TOTAL PROJECT BUDGET	IN-SERVICE DATE
Gila Substation 69kV Rebuild	\$17,900	Q2 2030
Bouse-Kofa 161-kV Rebuild	\$26,520	Q2 2027
Liberty Station Service Replacements	\$1,390	Q3 2027
Crossman Peak Microwave Facility	\$4,525	Q3 2026
Oracle-Tucson 115-kV Rebuild	\$11,130	Q2 2028
Coolidge Station Service Replacements	\$3,673	Q4 2030
Wood Pole Replacement Program FY26-28	\$15,000	N/A
Gila-Knob 161-kV Rebuild	\$32,322	Q2 2029
Bouse Upgrade	\$79,436	Q1 2030
Parker-Blythe #2 161-kV Phase 1	\$14,209	Q2 2029
Parker-Blythe #2 161-kV Phase 2	\$13,876	Q2 2030
Parker-Blythe #2 161-kV Phase 3	\$13,876	Q2 2031

Table 1. DSW 10-Year Plan Active Construction Projects

Notes:

- (1) All values in booklet tables are presented in thousands of dollars unless otherwise noted
- (2) All dates in booklet are reported in calendar years
- (3) N/A - Not Applicable
- (4) Total project budgets as of Q1 2026, any increases will be reflected in Final TYP



5.1 Gila Substation 69kV Rebuild

Project Background

The Gila Substation is located in Yuma, Arizona. The substation serves loads at 161-kV, 69-kV, 34.5-kV and 4.16-kV. The substation is part of the Parker-Davis Project, Salinity Control Project and the Colorado River Front Work, and Levee system. The Gila 69-kV yard was constructed in 1955 and consists of existing equipment of varying vintage, including original equipment manufactured in the 1950s. Most of the equipment at this site is operating well beyond its expected service life determined by the DOE Replacements Manual.



Figure 2. Crew erecting new BSE-KOF 103/6 structure.

Justification

WAPA continues to experience maintenance issues related to the 69-kV yard related to the advanced age and condition of major equipment. As a result, there have been an increased frequency of failures that are affecting system reliability. Reliability is impacted due to extended outage times caused by the additional effort needed to repair old and worn equipment, where spare parts have become difficult or impossible to obtain. Many of the oil-bearing devices are leaking and supports are rusted. Over the years, six disconnect switches and two oil breakers have been replaced due to failure.

Project Highlights

- Rebuild the 69kV switchyard in a breaker-and-a-half configuration in the footprint of the decommissioned 161kV yard.
- Design is 95 percent complete with only transmission line updates remaining. Circuit breakers were delivered in February 2026.
- Transformer procurement package is complete and delivery is critical path with up to a three-year lead time.
- Since this project was approved in 2021 materials and construction costs have drastically increased. The total project budget is now \$28,540,000. This \$10.64m increase will be voted on in early December 2026.



Milestone Schedule

PROJECT MILESTONE	STATUS	DATE
Project Design	Projected	Q2 2027
Construction Begins	Projected	Q3 2028
Construction Ends	Projected	Q2 2030
Financial Closeout	Projected	Q4 2030

Table 2. Gila 69kV Substation Milestone Schedule



5.2 Bouse-Kofa 161-kV Rebuild Project

Project Background

The Bouse to Kofa (BSE-KOF) 161-kV transmission line is a single circuit, 84.3-mile line segment of the overall Parker to Gila 161-kV transmission Line built in 1943. The BSE-KOF line is located in western Arizona and runs south from the Bouse Substation to the Kofa Substation. Bouse Substation is located just north of the junction of Arizona Highways 72 and 95 in La Paz County and Kofa Substation is located approximately 16 miles northeast of the city of Yuma in Yuma County.



Figure 3. Crew erecting new BSE-KOF 103/6 structure.

The line was originally 78.9 miles long, constructed with three 300 kcmil hollow core copper conductors. Most of the wood H-Frame structures have been replaced with light-duty steel H-Frame structures, and only 82 wood structures remain. In 2006 a portion of the line was rerouted around the town of Quartzsite. The reroute replaced approximately 3.3 miles of the existing line through Quartzsite with approximately 8.4 miles of three 954 kcmil aluminum conductor steel reinforced (ACSR) conductors supported on single circuit steel monopoles. The Bouse-Kofa 161-kV rebuild will eliminate National Electric Safety Code (NESC) violations, replace deteriorated and unsafe structures, and add OPGW for communications. The project was fully funded in December 2018.

Project Highlights

- Replaced 75.6 miles of three 300 kcmil hollow core copper conductors with three 336.4 kcmil Oriole ACSS conductors
- Replaced 82 existing wood structures with light-duty steel H-frame structures
- Upgraded one steel OGW to OPGW,
- New light-duty steel H-frame steel structures installed to correct clearance issues not corrected by stringing new ACSS conductor
- Access roads were improved to facilitate construction



Milestone Schedule

PROJECT MILESTONE	STATUS	DATE
Project Design	Completed	Q3 2020
Construction Begins	Completed	Q2 2023
Construction Ends	Projected	Q2 2027
Financial Closeout	Projected	Q4 2027

Table 3. BSE-KOF Milestone Schedule



Figure 4. Crew setting up to pull in the new OGW at BSE-KOF 82/10 structure.



5.5 Liberty Station Service Replacements

Project Background

Part of the Pacific Northwest-Pacific Southwest Intertie Project (Intertie), Liberty Substation was constructed from 1967 to 1968 to serve as a link between Hoover Dam and Phoenix. It is located in Maricopa County, Arizona, about 3 miles northwest of Liberty. Liberty Substation was designed by Reclamation personnel in accordance with President Johnson's directive that aesthetics be taken into account in the design of new government buildings. In the substation layout, the main and transfer busses were located in the interior; because

of this, the height of the incoming and outgoing transmission lines was substantially reduced. Much of the Liberty station service equipment is over 30 years old and replacement parts are becoming difficult to obtain.



Figure 5. Liberty Substation Station Service Equipment

Justification

The advanced age of the equipment, as well as weather and other factors, are decreasing its reliability to the WAPA system. Equipment below 600v does not go through regular testing so there is uncertainty as to the health of the equipment. Availability of replacements parts is becoming more challenging as parts become obsolete. The completion of this replacement work would ensure operational reliability and safety. A majority of this project has been funded through the Capital Operations and Maintenance program.

Project Highlights

Install and complete station service replacements, including all new concrete pad foundations, automatic transfer switch, pad mounted transformers, and other associated electrical equipment.

Schedule and Budget

Work will be performed by contractors and WAPA staff. It is expected to take place throughout 2026 and into late 2027 with closeout by early 2028. The total project cost is approximately \$1.4m.

PROJECT MILESTONE	STATUS	DATE
Design	Complete	Q4 2023
Construction Begins	Complete	Q1 2024
Construction Ends	Projected	Q3 2027
Closeout	Projected	Q2 2028

Table 4. Liberty Station Service Milestone Schedule





Figure 6. WAPA Maintenance personnel setting transformer KY2B



5.6 Crossman Peak Microwave Facility

Project Background

WAPA's microwave system is the primary means of communication for all of its transmission lines between Mead Substation and Phoenix, encompassing 5 generation sites and 22 substations. The system operates within a specific frequency band (2GHz) regulated by the Federal Communications Commission. Federal legislation passed in 2010 reallocated this frequency band to a higher bandwidth range (7GHz). In anticipation of migrating to the higher frequency, WAPA analyzed its microwave system between Metal Mountain microwave site and the Topock Substation. The analysis identified a 70-mile stretch that was non-compliant with current reliability standards. WAPA's analysis determined that when the microwave path between Christmas Tree Pass and Metal Mountain is upgraded to the higher frequency band, an interruption in the signal will occur from the mountainous terrain in the area, severing the microwave path between these two communication sites. This compelled WAPA to look for a new intermediate site that would meet compliance standards.



Figure 7. Crossman Peak Microwave Facility

Extensive effort went into finding a site that would be suitable and provide the reliability required. The current interim sites do not meet the required WAPA and NERC standards for a reliable and secure communication. WAPA's original analysis identified Crossman Peak, located east of Lake Havasu City as the only potential location. This included the review of an approximately 50-mile radius of all areas of sufficient elevation to accommodate the direct line of site required.

After transitioning from the initial study phase to construction in 2016, WAPA experienced a number of challenges surrounding the routing of the primary power distribution line to the site. Instead of continuing to pursue the project it was placed on hold while WAPA reassessed viable alternatives.

In 2019, WAPA performed a revalidation of the project scope, land acquisition requirements, and environmental constraints; resulting in an identified need for additional funding. The anticipated additional project cost is largely due to the cost to construct a distribution line up Crossman Peak for primary power to the site.

WAPA's original analysis did not identify any potential alternative locations aside from Crossman Peak; however, as part of the restudy effort a siting review was performed, and nine potential locations were identified.



Powell Peak was the only alternative site investigated during the restudy that was suitable; however, Powell Peak is located on a Federally protected Wilderness Area. (The Wilderness Act of 1964 prohibits permanent and temporary roads, most commercial enterprises, motorized equipment and mechanical transport, landing of aircraft, and structures or installations [Pub. L. 88-577; 16 U.S.C. §1131 et seq.]) As a result, Crossman Peak was the only viable option.

WAPA's reassessment analyzed various options to power the new microwave site including renewable energy with battery storage, propane generator, primary power solely by WAPA-DSW, and a primary power partnership with a combination of regional stakeholders. The study showed that any combination of solar, wind, propane generator, and battery storage was not recommended due to the lack of developable land on Crossman Peak. Therefore, a distribution line for the primary power was the only viable option. WAPA investigated and determined that the most cost-effective solution would have been to establish a power partnership with regional stakeholders. The overhead distribution line was estimated cost up to \$5M and no stakeholders were able to contribute.

In late 2024 it was determined that significant radio technology improvements eliminated the need for a new facility. Currently DSW is using these same new generation radios with success at White Hills and Glen Canyon.

Project Updates

Nokia radios will be installed at Christmas Tree Pass and Metal Mountain to resolve the bandwidth constraints identified in the early 2010s.



5.7 Oracle-Tucson 115-kV Rebuild

Project Description

The Oracle to Tucson (ORA-TUC) 115-kV transmission line was originally constructed in 1943 and is approximately 25 miles in length starting at the Oracle Substation in Oracle, Arizona, and runs south to the Tucson Substation in Tucson, Arizona. The northern half of the line passes through mostly undeveloped desert terrain and residential areas. The circuit has a single existing OGW. The majority of the southern half of the line passes through the urban areas of the city of Tucson and has already been rebuilt on steel monopole support structures. The line uses three different types of conductors along its route. Approximately 13 miles of non-contiguous #4/0 American Wire Gauge (AWG) 7 strand copper, approximately 10 miles of 954 ACSR, and approximately three miles of 795 ACSR. Tucson Electric Power has a circuit co-located with WAPA's circuit for approximately 12 miles on the southern portion of the line.



Figure 8. Oracle-Tucson Transmission Line Map

Project Justification

WAPA's proposed action increases the reliability and safety of the bulk electric system so that the risk of a catastrophic failure on the ORA-TUC 115-kV transmission line is reduced. Due to its configuration, the line will be overloaded in the future unless mitigation measures are taken to replace the #4/0 AWG copper conductor that limits the capacity of the circuit. WAPA has also identified three clearance violations that need to be corrected for the line to comply with NERC standards.

Rebuilding the wood pole sections of the line will eliminate having three different conductors in place; only 954 ACSR conductor would be installed during construction. The costs and level of maintenance effort will be reduced, and safety will be improved. Replacing the aging structures and conductors on the ORA-TUC transmission line will also increase the reliability of service and installing an OPGW will improve communication redundancy within the area by providing an alternate and physically independent path for protection, control, and communication. OPGW will allow for future communication bandwidth needs to be met.



Projects Highlights

- Obtain environmental clearance
- Remove existing #4/0 copper and 795 ACSR conductors
- Remove approximately 25 miles of OGW
- Remove all deteriorated wood poles, wood braces, and crossarms
- Install new insulators, hardware, and 954 kcmil ACSR conductor
- Correct NERC violations
- Install approximately 25 miles of 48-count OPGW from Oracle Substation to Tucson Substation
- Replace approximately 75 wood structures in-kind and other structures as needed to support new conductor and OPGW
- Since this project was approved in 2023 administrative, design, and construction costs have drastically increased. The total project budget is now \$13,980,000. This \$2.85m increase will be voted on in early December 2026.



Figure 9. Oracle-Tucson H-frame and single pole structure

Milestone Schedule

The tables below represent the anticipated schedule and total proposed cost for the project. Construction is expected to take place within a single outage season to minimize conflicts with other projects in the area.

PROJECT MILESTONE	STATUS	DATE
Project Design	Projected	Q4 2025
Contract Solicitation	Projected	Q1 2027
Construction Begins	Projected	Q3 2027
Construction Ends	Projected	Q2 2028
Financial Closeout	Projected	Q4 2028

Table 5. Oracle-Tucson Milestone Schedule



5.8 Coolidge Station Service Replacements

Project Background

Part of the Parker Davis Project system, Coolidge Substation was constructed in 1950 by Arizona Sand Rock Company and the Industrial Tubular Equipment Company. The facility was initially built to accommodate several transmission lines including the Mesa #1 230-kV line, a 115-kV line to Tucson, a 115-kV line to Electrical District 5 Substation, and a 115-kV line to Phoenix, among others.

The existing station service system has two power feeds, the main feed is from the 12-kV tertiary of KW3A on the south bus, and the backup feed is from the 12-kV tertiary of KW4A on the north bus. These two 150 MVA transformers are fed from the 115-kV main and transfer bus.

The 12-kV tertiary winding from KW3A feeds the 300 kVA WAPA transformer (KCA) supplying 480/277V main station service power to the ATS. The 12-kV from KW4A feeds the 300kVA WAPA transformer (KCB) supplying 480/277 backup service power to the same existing ATS for panel MZA which in turn feeds panel DCA. A 480-volt panel DCA feeds the well, lighting, communications room, UPS, switchyard 480v power and control room. The ATS is controlled, and the station service load is protected by relays built into the ATS.

Justification

The station service system equipment was installed in 1989 and has become degraded due to its 33-year age. The advanced age of the equipment, as well as weather and other factors, are decreasing its reliability to the WAPA system. 600v below equipment does not go through regular testing so there is uncertainty with the age of the equipment. Availability of replacements parts is becoming more challenging as parts become obsolete. This replacement project would ensure operational reliability and safety.

Project Highlights

Install and complete station service replacements, including all new concrete pad foundations, automatic transfer switch, pad mounted transformers, and other associated electrical equipment.



Figure 10. Coolidge Substation Distribution Panel



Milestone Schedule

The project is expected to begin in mid-2028 and be completed by late 2030. The total project budget is approximately \$3.7m. This project was approved by customer vote in December 2023.

PROJECT MILESTONE	STATUS	DATE
Customer Vote	Complete	Q4 2023
Design and Procurement	Projected	Q2 2028
Field Work and Construction	Projected	Q4 2029
Closeout	Projected	Q2 2030

Table 6. Coolidge Station Service Milestone Schedule



5.9 Wood Pole Replacement Program FY26-28

Program Background

DSW's Transmission Line and Substation Maintenance Organization is responsible for the implementation of the Wood Pole Replacement Program. Shifted from Capital O&M to Capital Construction in 2022, the program utilizes inspection reports to target vulnerable wood poles that need replacement. Remediation efforts include the replacement of wood structures and insulators in-kind while utilizing the existing conductor. These concentrated efforts typically take place early each calendar year (January to March) lasting between six to eight weeks (depending on the number of crews) and are generally focused on the replacement of large, contiguous segments of transmission lines.

The FY26 – FY28 Program was approved by customer vote in December 2023. Future votes are anticipated to take place every three years to align with WAPA budget formulation. The next vote slated in December 2027 and would support FY29-31.

Program Focus FY26 to FY28

Table 9 represents 2026 ground patrol identified maintenance issues on various segments. These segments may be repaired between 2026 and 2028 outside of routine maintenance efforts. WAPA will continue to provide updates as it develops the Wood Pole Replacement workplan. Maintenance issues presented for Nogales-Apache 115-kV have been adjusted to not include structures to be replaced by the Vail-Tortolita Project.

As of mid-2026, DSW plans to complete replacements on the remaining 15 miles of Valley Farms-Oracle and the remaining 8 miles of Blythe-Knob. Depending on need and factors such as available outages, DSW may shift efforts between these segments.

Transmission Line	Maintenance Issues	Length (mi.)
ED5 - Marana 115-kV (to bypass)	80	16
Nogales - Apache 115-kV	263	56
Valley Farms - Oracle 115-kV	75	38
Blythe - Knob 161-kV	79	64
ED5 - Saguaro #1 115-kV	73	17
Saguaro - Oracle 115-kV	52	19

Table 7. Wood Pole Maintenance Issues

Segment Descriptions

ED5-Saguaro 115-kV #2 (to bypass): originally constructed in 1949, this 16-mile line is constructed of primarily wood H-frame structures and traverses mostly undeveloped Arizona State Lands northwest of Tucson, Arizona.

Blythe-Knob 161-kV: originally constructed in the late 1940s and early 1950s on primarily wood H-frame structures. Approximately 50 miles of this line have been replaced under capital operations and maintenance funding (2017-2021) and capital construction funding (2022-Present).



Approximately 10 miles remain to be replaced, half of which traverses rugged terrain in the Palo Verde Mountains in California.

ED5-Saguaro #1 115-kV: originally constructed in the early 1950s on primarily wood H-frame structures. Targeted replacements may be made while structures along the southern ED5-Saguaro #2 bypass route are replaced.

Nogales-Apache 115-kV: originally constructed in the early 1950s on primarily wood H-frame structures. Replacements along this segment will target structures west of the proposed Vail-Tortolita project which begins approximately 3 miles east of Nogales Substation. Replacements are expected to be intermittent across approximately 56 miles.

Valley Farms-Oracle 115-kV: approximately 38-mile line constructed of primarily wood H-frame structures. The line crosses mostly Arizona State owned lands originating east of Coolidge in the unincorporated community of Valley Farms and running southeast paralleling Arizona State Highway 79 (Pinal Pioneer Parkway) until it terminates at the Oracle Substation northwest of Oracle Junction.

Saguaro-Oracle 115kV: approximately 19-mile line constructed of primarily wood H-frame structures. Line extends eastward through mostly undeveloped private and Arizona State owned lands.

Financial Summary

The Wood Pole Replacement Program yearly budget is approximately \$5m, a total of \$15m between FY26 and FY28. A typical yearly budget is comprised mostly of labor costs with up to four line crews working at any given time. Other notable costs include environmental compliance, materials and supplies, and travel expenses.

TYPICAL YEARLY BUDGET	
Labor	\$3,500
Environmental	\$800
Materials and Supplies	\$300
Travel	\$300
Contract Support	\$100
Total Project Budget	\$5,000

Table 8. Wood Pole Replacement Program FY26-28 Typical Yearly Budget



5.10 Gila-Knob 161-kV Rebuild Project

Project Background

The Gila to Knob (GLA-KNB) 161-kV transmission line is approximately 20 miles long from the Gila Substation in Yuma, Arizona to the Knob Substation in Winterhaven, California. The line was built in 1943 serves the Wellton-Mohawk Irrigation and Drainage District, the U.S. Army, and other entities. The GLA-KNB line traverses BLM, Bureau of Indian Affairs (Fort Yuma Indian Reservation), state, and private lands and passes through cultivated fields, wetlands, urban, and flat low desert terrain. It is currently a single circuit 300 kcmil copper conductor with two OGW and is supported on 109 wood and 66 light duty steel H-Frame structures and operates at 161-kV. Approximately 1.1 mile of the GLA-KNB line routed around the Arizona Public Service North Gila Substation has already been replaced using steel poles, 1272 kcmil ACSS conductor, and OPGW.



Figure 11. GLA-KNB structure 11/2

Project Highlights

- Rebuild on steel monopoles and light-duty steel, reconductor and install OPGW
- Improve ROW, including access roads and pads
- Remove all wood poles between Gila-North Gila (~5 miles) and replace with steel monopoles, remove all wood poles between North Gila and Knob (~15 miles) and replace with light-duty steel
- String 1272 ACSS and two bundled 795 ACSR between Gila-North Gila and 954 ACSR between North Gila and Knob
- Coordinate outages with APS as needed
- Change relay settings at Gila and Knob substations to support new conductor

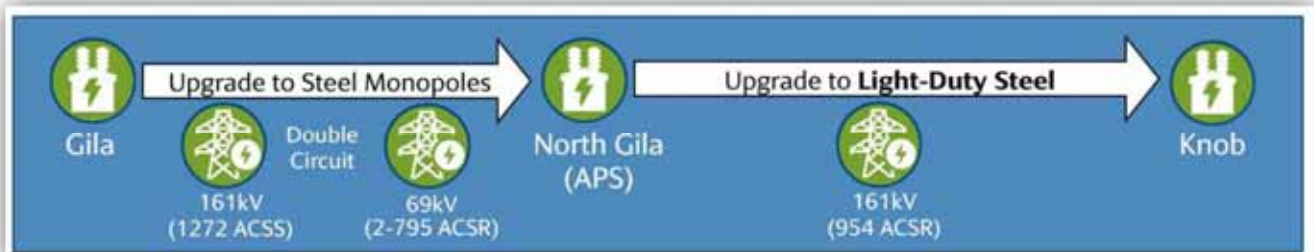


Figure 12. GLA-KNB LiDAR survey ground control point



Milestone Schedule

PROJECT MILESTONE	STATUS	DATE
Contract Solicitation	Projected	Q4 2026
Construction Begins	Projected	Q4 2027
Construction Ends	Projected	Q2 2029
Closeout	Projected	Q4 2029

Table 9. Gila-Knob Milestone Schedule



Figure 13. GLA-KNB LiDAR survey ground control point

Project Updates

LIDAR and geotechnical surveys have been completed and design is approximately 70% complete.



5.11 Bouse Upgrade Project

Project Background

WAPA's existing Parker-Headgate Rock and Parker-Bouse 161-kV transmission lines, located along the Colorado River in La Paz County, Arizona and San Bernardino County, California, were built in the 1940s and 1950s on wood pole H-frame structures. These transmission lines are in an advanced state of degradation. Portions of the Parker-Headgate Rock and Parker-Bouse transmission lines were originally scheduled for replacement in 1999 and have well exceeded normal service life expectancy of 50 years. The condition of these structures not only impairs the continued reliability of the transmission lines, it also presents a potential safety hazard should the structures be exposed to adverse weather conditions such as unusually high winds.

An Analysis of Alternatives (AOA) study was completed in the summer of 2018 as part of the 10-Year Plan Pivot Strategy. In October 2018, WAPA initiated seed funding to begin lands, environmental, and design work to rebuild the Parker-Headgate Rock and Parker-Bouse 161-kV transmission lines and perform an upgrade to the existing 161-kV Bouse Substation. The purpose of the seed funding phase is to develop at least a 50 percent design package and provide customers with an updated project cost estimate. The proposed project scope aims to rebuild, upgrade, and decommission components of the existing system to improve overall system reliability, safety, and to better meet future transmission needs. This proposed multiphase project is collectively referred to as the Bouse Upgrade Project throughout 10-Year Plan and public materials.

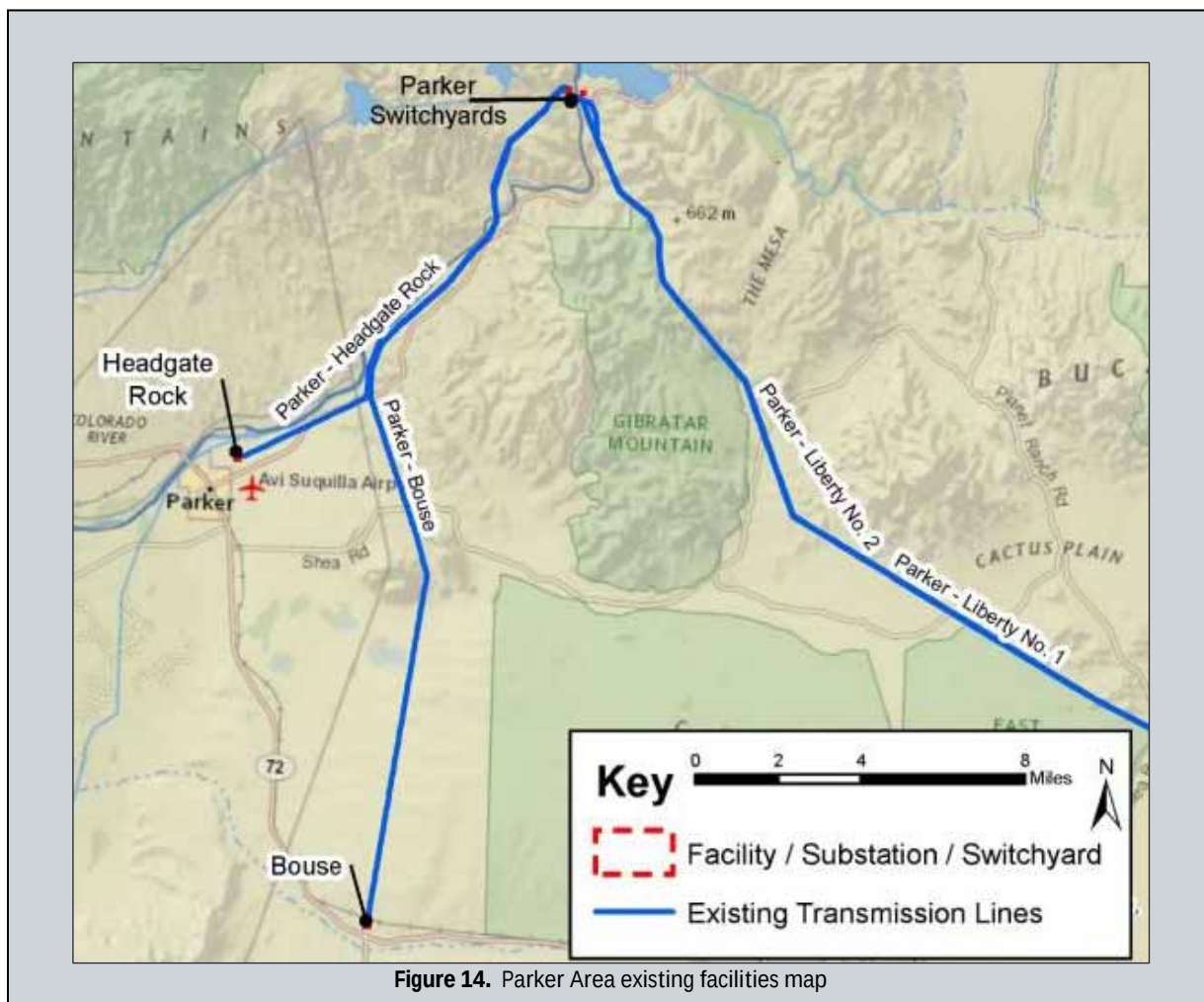
The Bouse Upgrade Project would be constructed on the Colorado River Indian Reservation, and land managed by the Bureau of Land Management (BLM) Lake Havasu Field Office, Arizona State Land Department, Bureau of Reclamation Yuma Area Office, as well as private and WAPA owned lands. The project would reconfigure the 161-kV system south of Parker substation to a new 230-kV system providing for future load growth by connecting the Parker-Bouse 161-kV and Parker-Headgate Rock 161-kV transmission lines with a short, new transmission line segment called a jumper, and decommissioning old segments through populated areas of Parker, AZ. WAPA's proposed jumper locations are located near the Parker area. Portions of the Parker-Bouse and Parker-Headgate Rock 161-kV transmission line segments would be decommissioned and removed starting at the Parker Dam, span the Colorado River, and cross the Parker Strip. Portions of WAPA's existing rights-of-way, including through the Parker Strip, would be relinquished as part of the proposed project.

Project Highlights

- Build a new 230-kV transmission line from the Bouse Substation to the Parker-Liberty #2, 230-kV transmission line through BLM and Arizona State Land Department land
- Expand the existing Bouse Substation by adding a 230-kV bus
- Connect the existing Parker-Headgate Rock 161-kV transmission line to the Parker-Bouse 161-kV transmission line with a new a jumper at one of seven possible locations
- Remove portions of the existing Parker-Headgate Rock and Parker-Bouse 161-kV transmission lines between the chosen jumper connection (to be determined) north to the Parker Substation
- Construct and improve access roads



- Lease up to three temporary laydown yards, each covering approximately 2.5 acres, for use during construction
- Acquire right-of-way (ROW) for transmission line construction and maintenance
- Schedule work to avoid outages during the summer peak load season



It is WAPA's intent to phase this project into manageable smaller scopes of work that can be spread across multiple years to mitigate unnecessary upward rate pressure. The project phasing can be summarized in four steps:

Step One: Build a new approximately 18-mile long, double-circuited, 230-kV transmission line from WAPA's existing Parker-Liberty #2 Transmission Line to WAPA's existing Bouse Substation.

- Construct 18 miles of new double circuit 230-kV transmission line (approximately 60 steel monopole structures) from Bouse Substation to existing Parker-Liberty #2 transmission line
- Results in redirection of Parker-Liberty 230-kV line through Bouse Substation (See figure 21)
- Proposed 1272 kcmil ACSR conductor or most economical to support transmission load
- One overhead ground wire (OGW) and one optical overhead ground wire (OPGW)
- Construct across flat, unpopulated, BLM land



Step Two: Expand WAPA's existing Bouse Substation by adding breakers, switches, two 230/161-kV transformers, and two 230-kV bays

- Renovate the existing 161-kV three breaker ring-bus into a double-breaker-double-bus configuration.
- Add two 230-kV bays in 4-breaker ring-bus configuration with two 230/161-kV transformers

Step Three: Connect WAPA's existing Parker-Bouse 161-kV and Parker-Headgate Rock 161-kV transmission lines with a short, new transmission line segment called a jumper, which would complete a 161-kV circuit from Bouse Substation to Headgate Rock Substation.

- Install jumper between a new dead-end structure on the existing Parker-Headgate Rock 161-kV line with a new dead-end structure on the existing Parker-Bouse 161-kV line
- Energize this circuit from Bouse to Headgate Rock, establishing the new Headgate Rock-Bouse 161-kV connection

Step Four: Decommission and remove segments of the existing Parker-Bouse and Parker-Headgate Rock 161-kV transmission lines.

- Remove up to 12 of the 14 miles of single circuit line from Parker-Headgate Rock
- Remove up to 11 of the 22 miles of existing single circuit line from Parker-Bouse
- Relinquish existing ROW through Parker Strip

Current Configuration

- Many of the structures on the Parker-Headgate Rock 161-kV and the Parker-Bouse 161-kV transmission lines are in poor condition and difficult to access
- The existing the Parker-Headgate Rock and Parker-Bouse 161-kV transmission lines run parallel with each other out of Parker Dam Substation for approximately nine miles before the Parker-Bouse transmission line turns southeast toward the Bouse Substation. The southern 0.6 miles of the Parker-Headgate Rock and 11.3 miles of the existing Parker-Bouse line are not included in the proposed project, as those portions of these lines will remain in place. Depending on which jumper option is selected, between 9.5 and 12.3 miles of the Parker-Headgate Rock and between 9.7 and 11.3 miles of the Parker-Bouse 161-kV transmission lines would be decommissioned. Between 18 to 24 miles of existing 161-kV lines and between 135 and 175 wood structures would be removed, and the rights-of-way that are no longer needed would be relinquished to landowners.

Final Configuration

- New 18-mile double-circuit 230-kV transmission line within a 150-foot ROW, between the existing Bouse Substation and the existing Parker-Liberty #2 230-kV transmission line
- The Bouse Substation expansion would include the addition of components to the existing three-bay 161-kV bus in order to form a four-bay 230-kV switching station. Initially operated at 161-kV, the upgraded switching station will serve the newly reconfigured transmission line that is created by connecting the Parker-Bouse and Parker-Headgate Rock 161-kV transmission lines.



- Expansion of the Bouse Substation would also include the addition of two 230-kV bays to serve the new 230-kV transmission line
- New 161-kV transmission line (jumper) connecting the existing Parker-Headgate Rock and Parker-Bouse transmission lines

Upon Completion

- Remedy reliability and safety issues with the existing infrastructure
- Fix ROW encroachment issues preventing WAPA from accessing the lines for routine operations and maintenance
- Allow 161-kV power to be supplied to Headgate Rock Substation utilizing the existing ROW and transmission lines south of the Parker Strip area
- Eliminate the need for the transmission lines currently crossing the Parker Strip and Colorado River into California, reducing maintenance costs
- Upgrades executed at the Bouse Substation will provide WAPA the facilities to meet future loads in the region and the ability to serve potential future interconnections

Project Updates

- Completed geotechnical survey and transmission line design package.
- Substation design is complete. Procurement of two transformers has been delayed. Delivery of transformers will determine substation construction schedule.
- Design is underway for the 161-kV jumper.
- ROW acquisition is progressing on schedule with private, state, and Tribal entities.

Milestone Schedule and Financial Summary

PROJECT MILESTONE	STATUS	DATE
Design Complete	Projected	Q1 2027
Construction Mobilization	Projected	Q2 2028
In-Service / Energization	Projected	Q1 2030
Financial Closeout	Projected	Q4 2030

Table 10. Bouse Upgrade Milestone Schedule





Figure 15. WAPA tie-in to the PAD-HDR line looking south



5.12 Parker-Blythe#2 161-kV Rebuild Project Phases 1-3

Project Background

The Parker to Blythe (PAD-BLY) 161-kV #2 transmission line was built in 1969 and runs along the Colorado River in eastern California within San Bernardino and Riverside Counties, connecting the Parker Dam Upper 161-kV switchyard to the Blythe Substation. The PAD-BLY line is 63.9 miles long and was originally built with 954 KCMIL ACSR conductor and two steel OGW supported on wood H-frame structures with 3-pole wood structures at angle points and dead ends. Structures along the line are degraded and some are no longer compliant with Federal Energy Regulatory Commission standards. To increase reliability and remediate phase to ground clearance violations, WAPA will replace all 523 wood H-frame structures along the line with new, in-kind structures and add wood dead end structures as required. WAPA will reuse existing conductors and upgrade the existing OGW with OPGW in the same location on the poles. The project is within WAPA's established rights-of-way on lands managed by the Bureau of Land Management, Colorado River Indian Tribes (CRIT), and California State Lands Commission.

Project Highlights

- Project will be performed in three phases
- Replace all 523 wood H-frame structures with new, in-kind structures over 63.9 miles, from the Parker Dam Upper 161-kV switchyard to the Blythe Substation
- Add wood dead end structures as required, reuse existing conductors, and upgrade existing ground wire with OPGW
- Since this project was approved in 2020 administrative, environmental, and construction costs have drastically increased. The total project budget is now \$69,090,000. This \$27.13m increase will be voted on in early December 2026.



Figure 16. PAD-BLY#2 structure 25/7 damaged July 2024



Milestone Schedules

Phase 1

PROJECT MILESTONE	STATUS	DATE
Design Complete	Completed	Q4 2022
Contract Solicitation	Projected	Q2 2027
Construction Mobilization	Projected	Q3 2027
In-Service / Energization	Projected	Q2 2029
Financial Closeout	Projected	Q1 2030

Table 11. PAD-BLY#2 Phase 1 Milestone Schedule

Phase 2

PROJECT MILESTONE	STATUS	DATE
Design Complete	Projected	Q4 2024
Contract Solicitation	Projected	Q1 2028
Construction Mobilization	Projected	Q2 2028
In-Service / Energization	Projected	Q2 2030
Financial Closeout	Projected	Q1 2031

Table 12. PAD-BLY#2 Phase 2 Milestone Schedule

Phase 3

PROJECT MILESTONE	STATUS	DATE
Design Complete	Projected	Q4 2026
Contract Solicitation	Projected	Q3 2028
Construction Mobilization	Projected	Q4 2029
In-Service / Energization	Projected	Q2 2031
Financial Closeout	Projected	Q4 2031

Table 13. PAD-BLY#2 Phase 3 Milestone Schedule



6. Pre-Construction Projects

The Gila Substation 34.5-kV Rebuild is the only active AOA study. This study is approximately 95% complete with exception of some outstanding civil design review. Upcoming AOA studies include: Mead 230-kV and 500-kV Redundant Relays, Wellton New Control Building, and Blythe-Headgate Rock #1 161-kV Rebuild.

Project Description

Gila Substation, located in southwestern Arizona adjacent to the City of Yuma, was built in the late 1940s. The 34.5-kV yard provides service for WAPA's Yuma Tap, the Parker-Davis Project, Salinity Control Project and Colorado River Front Work, and Levee system. All protection is provided by older models of oil-filled circuit breakers with the exception of three breakers, two replaced in 2010, and another in 2019. The 34.5-kV yard is fed through parallel 69/34.5-kV 7500kVA transformers. Relay equipment, control, and the DC power source are located in a nearby control building.

Project Justification

The 34.5-kV equipment in the Gila Substation is of varying vintage, much of it was manufactured in the 1940s. Most devices at this site are beyond their service life per the DOE Replacements Manual. Circuit breakers need to be rebuilt and disconnect switches have broken when personnel attempted to operate them.

Unplanned outages due to equipment failure could result in loss of power to pumping loads with significant impact to irrigation and drainage operations in the Yuma area. Unscheduled outages will occur more frequently if a broader solution is not implemented. The frequency of planned outages is expected to increase because of maintenance requirements for older equipment.

Reliability is further impacted due to extended outage times caused by the additional effort needed to repair old and worn equipment, where spare parts have become difficult or impossible to obtain. The difficulties encountered when repairing the old breakers have also dramatically increased maintenance cost. Continuous current ratings of the remaining oil breakers are 600-1200 amps, well below the 2000-amp ratings of the newer SF6 and vacuum breakers in the yard. Adding to maintenance difficulties, the existing breakers were manufactured by three different companies: Mitsubishi, Westinghouse, and General Electric.

The spacing between phases and energized equipment on the 34.5-kV yard is inadequate and congested, which creates a safety hazard for the maintenance crews working on it. Increasing the space to 69-kV standards between energized equipment will increase the safety of the yard and make it easier to maintain.

Preferred Alternative

Relocate and rebuild in breaker-and-a-half configuration using 69-kV clearances and standards operated at 34.5-kV



Conceptual project budget: \$16,477,000

Conceptual schedule: FY25 - FY29

- Pursue environmental clearances
- Investigate and mitigate any PCB contamination
- Design and build a new 34.5-kV yard in the old 69-kV area
- Demolish old 69-kV and 34.5-kV switchyards

Rebuilding the 34.5-kV switchyard in a breaker-and-a-half configuration meets all needs to replace older equipment to improve reliability in addition to providing better protection for the switchyard than any of the other alternatives. Breaker-and-a-half configuration offers more reliability than main-and-transfer configuration and offers more contingencies, should multiple failures in the yard occur. This alternative also is the best for operation and maintenance of the switchyard.

The project budget will be re-evaluated and voted on in December 2027.



Figure 17. Northeast facing view of Gila 34.5-kV yard



Figure 18. South facing view of Gila 34.5-kV yard



7. Capital O&M

7.1 Capital O&M Budget

Capital O&M consists of moveable property, purchases and capital maintenance-related work. Capital O&M projects are typically smaller than construction projects and normally, but not always, designed, built, and commissioned by WAPA's internal workforce. Per the Joint Planning Agreement No. 18-DSR-12868, WAPA provides more detailed information regarding the scope and cost for all Capital O&M projects that are over \$1 million. There are several Capital O&M projects or programs over \$1 million. WAPA established the following categories of O&M projects (subject to refinement): Communication Systems, Facility and Security, Meter and Replay Replacements, Joint Participation Projects, and Other Equipment. Projects within these categories that are over \$1m are discussed below.

The table below shows actual execution for FY23 through FY25, projected for FY26, and proposed for FY27. The five-year average is approximately \$9.8 million.

FY23	FY24	FY25	FY26	FY27
Actuals			Projected	Proposed
\$10.0m	\$12.8m	\$1.1m	\$9.3m	\$16.0m

Table 14. Capital O&M Budget Summary

The Capital O&M budget for FY27 is below, the program voted on this December 2026.

Program Category	FY27
Communication Systems	\$700,000
Facility and Security	\$4,200,000
Meter and Relay Replacements	\$2,700,000
Joint Participation Projects	\$6,500,000
Other Equipment	\$1,900,000
Total Capital O&M Program	\$16,000,000

Table 15. Capital O&M FY27 Budget

Communication Systems

Mitel to Cisco voice over internet protocol (VoIP) Program

Project Scope: This critical system serves all substations, taps, switchyards, communication sites and offices organization-wide. Existing Mitel system at the end of its service life with limited support. DOE requires a common phone system to be utilized across WAPA. All



regions are replacing many outdated analog communication equipment, such as hardwired phones. Failures experienced in 2024 affected Operations and accelerated the timeline for replacements.

Budget: \$1.1m (FY27 through FY28)

Facility and Security

Mead Control House Sewer Line Repair

Project Scope: Building constructed over 50 years ago, Plumbing has backed up numerous times, two locations along the line have collapsed, pipe corrosion is severe, and water pooling is prevalent. Clean, descale, flush the existing 85' four-inch cast iron drain and install a cured-in-place liner. Remove and replace 400' four-inch cast iron line with PVC pipe and replace all clean-outs.

Budget: \$944,000 (FY27 through FY28)

Mead Security and Yuma Security Projects

Project Scope: Installation of replacement security system at Mead and new system at Yuma Service Center. Contract will include design, acquisition, installation/replacement of camera systems, along with software and licensing agreements.

Budget: \$1.5m (FY27)

Substation Equipment Replacements

Includes substation yard equipment breakers, CCVTs, disconnect switches and motor-operated disconnect switches.

Harcuvar Station Service Replacement

Project Scope: Harcuvar Substation (CAP owned) was originally constructed in 1984 and is in La Paz County, Arizona, approximately 10 miles north of Wenden. Install and complete station service replacements, including new foundations, automatic transfer switch, pad mounted transformers, and other electrical equipment for station service.

Budget: \$3.5m (project will not begin until Coolidge Station Service is complete in FY30)

Meter and Relay Replacements

Coolidge Meter and Relay Replacements

Project Scope: Upgrading bus and line protection. Existing bus and line relays are composed of first-generation microprocessor overcurrent relays for 12.4-kV system. Relay upgrades will improve fault identification and analysis turnaround resulting in limited disruption to service.



Budget: \$940,000 (FY26 through FY29)

Joint Participation Projects

WAPA is the participant in several different joint participation projects, the work for these projects will be completed by others.

Perkins Breakers

Project Scope: Mead-Phoenix Project (MPP) financial responsibility. Replacement of aging breakers and disconnect switches.

Budget: \$2.6m (FY27)

Marketplace and McCullough

Project Scope: Mead- Adelanto Project (MAP) and MPP financial responsibility. Installation of block wall at each facility, other physical security measures.

Budget: \$3.9m (FY27)

Other Equipment

Includes both heavy and testing equipment such as bucket trucks, backhoes, and diagnostic equipment. No major equipment purchases over \$1m are planned in FY27.

Breaker Replacement Program

At the Draft TYP meeting on August 19, 2026 WAPA proposed moving the breaker replacements from Capital O&M to the Construction Program. This proposal closely follows the Wood Pole Replacement Program move that took place in FY22. This move occurred for some of the following reasons:

- Consistent with TYP given scope and cost
- Facilitates additional visibility, reporting, and customer input
- Provides a more sustainable source of funding for long lead-time equipment

The program estimates an average of five high-voltage breakers per year will be purchased, installed and commissioned. The average purchase price of a 161/230kV breaker is \$280,000 and \$205,000 for a typical 115kV breaker. The annual budget estimate is \$2.75m in FY27, \$2.833m in FY28, and \$2.918m in FY29. The yearly increase includes a 3% cost index. The estimate excludes costs associated with adjacent disconnect switches, grading capacitors; pad removal, design and replacement.

The Breaker Replacement Program totaling \$8.5m will be voted on this December 2026.



8. Ten-Year Plan

8.1 Rate Analysis Introduction

WAPA must establish rates sufficient to cover operating, maintenance and purchase power expenses and repay capital investments in generation and transmission facilities within the allowable period. Capital investments are repaid independent of funding source – both appropriations and alternative financing such as prepayments. Repayment begins the fiscal year following the in-service date of the capital investment.

8.2 Analysis of Capital Investments

The projects in the 10-Year Plan are analyzed to determine their rate impact. Project costs, including 'Interest during Construction', and in-service dates are used in the analysis. Estimated principal and interest from the projects in the 10-Year Plan are divided by typical sales for the period to determine the rate impact. In the analysis, the annual rate impact for each capital project is displayed.

Central Arizona Project

CAP uses a “mortgage-type” amortization to calculate the annual principal and interest to be included in the CAP costs included in the OTR. Repayment of capital investments include existing unpaid investments as well as projections of future investments identified in the 10-Year Plan. CAP replacements are repaid prior to the end of their service life, while additions are repaid within 50 years.

Electrical District No. 5-Palo Verde Hub

There are no capital projects.

Parker-Davis Project

P-DP uses a “mortgage-type” amortization to calculate the annual principal and interest to be included as part of the P-DP costs included in the OTR. Repayment of capital investments include existing unpaid investments as well as projections of future investments identified in the 10-Year Plan. P-DP replacements are required to be repaid within 40 years, based on a weighted-average service life, while additions are required to be repaid within 50 years.

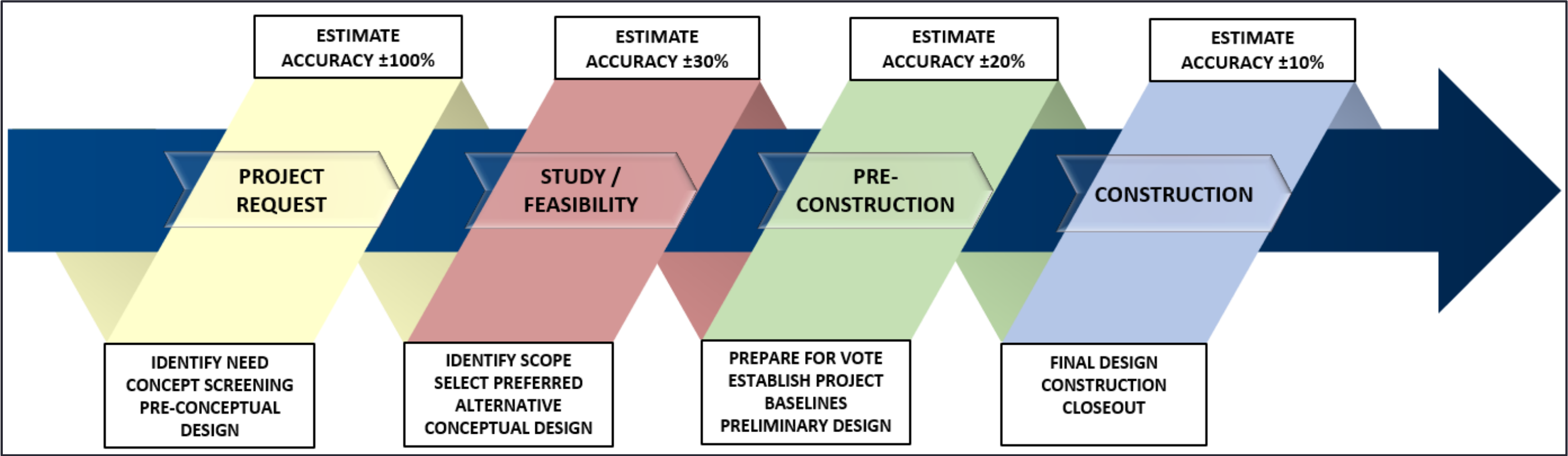
Intertie Project

Intertie uses the “pinch-point” repayment methodology. The pinch-point year is when a significant required payment is due typically for a capital investment and therefore the Intertie costs is the highest. Repayment of capital investments include existing unpaid investments as well as projections of future investments. Replacements are required to be repaid by their service life according to the Federal Hydropower Replacements Book and additions are required to be repaid within 50 years.



8.3 Estimate Accuracy and Color Coding Explanation

- The 10-Year Plan is color coded for the following criteria:
- Yellow – Project Request – Pre-Conceptual Design
 - Red – Study / Feasibility – Conceptual Design
 - Green – Pre-construction – Preliminary Design
 - Blue – Active Construction – Final Design, Construction, and Closeout



8.4 Active and Pre-Construction Projects Ten-Year Plan (FY 2027-2036)

PROJECT NAME	PROJECTED TOTAL BUDGET	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Capital O&M	\$15,970	\$15,970									
Breaker Replacement Program FY27-FY29	\$8,500	\$2,750	\$2,833	\$2,917							
Bouse-Kofa 161kV Rebuild	\$26,520	\$400									
Liberty Station Service Replacements	\$1,390	\$675	\$32								
Crossman Peak Microwave Facility	\$4,525	\$900	\$100								
Oracle-Tucson 115kV Rebuild	\$13,980	\$7,850	\$3,500	\$86							
Coolidge Station Service Replacements	\$3,673	\$0	\$500	\$1,510	\$1,633						
Wood Pole Replacement Program FY26-28	\$15,000	\$6,300	\$3,431								
Gila-Knob 161kV Remaining Rebuild	\$32,322	\$26,210	\$1,762	\$1,684							
Bouse Upgrade Project	\$79,436	\$61,402	\$5,386	\$4,471	\$570						
Gila Substation 69kV Rebuild	\$28,538	\$2,721	\$18,221	\$1,865	\$1,268						
Parker-Blythe 161kV #2 Rebuild Phase-1	\$23,678	\$16,352	\$2,297	\$2,241	\$177						
Parker-Blythe 161kV #2 Rebuild Phase-2	\$21,353	\$251	\$16,381	\$2,194	\$1,801	\$244					
Parker-Blythe 161kV #2 Rebuild Phase-3	\$24,060	\$326	\$545	\$1,368	\$19,300	\$2,346	\$175				
Gila Substation 34.5kV Rebuild	\$16,477	\$29	\$1,423	\$381	\$11,808	\$1,296	\$1,087				

*NOTE: All values in thousands of dollars

8.5 Proposed Out-Year Projects Ten-Year Plan (FY 2027-2036)

PROJECT NAME	PROJECTED TOTAL BUDGET	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Capital O&M Program	\$108,000		\$12,000	\$12,360	\$12,731	\$13,113	\$13,506	\$13,911	\$14,329	\$14,578	\$15,201
Mead Redundant Bus Diff Relays 230kV	\$4,300		\$2,936	\$1,112	\$252						
Mead Redundant Bus Diff Relays 500kV	\$1,801		\$1,694	\$73	\$34						
Blythe-Headgate Rock #1 161kV Rebuild	\$23,900		\$1,195	\$100	\$100	\$9,560	\$11,711	\$1,234			
Wellton New Control Building	\$3,800		\$500	\$100	\$100	\$2,600	\$500				
Parker Substation 161kV Replacements	\$16,850		\$800	\$100	\$100	\$13,550	\$1,800	\$500			
Parker Substation 230kV Replacements	\$12,100			\$800	\$100	\$100	\$9,800	\$1,300			
Bouse-Headgate Rock 161kV Rebuild	\$8,995				\$800	\$100	\$100	\$7,495	\$500		
Wood Pole Replacement Program FY29-31	\$15,000			\$5,000	\$5,000	\$5,000					
Breaker Replacement Program FY30-FY32	\$9,000				\$3,000	\$3,000	\$3,000				
Wood Pole Replacement Program FY32-34	\$15,000						\$5,000	\$5,000	\$5,000		
Breaker Replacement Program FY33-FY35	\$9,000							\$3,000	\$3,000	\$3,000	
Wood Pole Replacement Program FY35-37	\$15,000									\$5,000	\$5,000
Breaker Replacement Program FY36-FY38	\$3,000										\$3,000

*NOTE: All values in thousands of dollars

Fiscal Year Totals- All Projects	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
	\$133,303	\$66,166	\$40,747	\$59,366	\$26,311	\$48,172	\$44,911	\$31,529	\$21,500	\$21,000

8.6 Rate Impacts: Active and Pre-Construction Projects

PROJECT NAME	IN SERVICE DATE	INTEREST RATE	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Prior Year Projects (Pending Closeout)	2026 +	various	\$ 0.26	\$ 0.52	\$ 0.67	\$ 0.82	\$ 0.82	\$ 0.82	\$ 0.82	\$ 0.82	\$ 0.82	\$ 0.82
Capital O&M	2027	various		\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16
Breaker Replacement Program FY27-FY29	2029	various				\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11
Bouse-Kofa 161kV Rebuild	2027	3.000%		\$ 0.21	\$ 0.21	\$ 0.21	\$ 0.21	\$ 0.21	\$ 0.21	\$ 0.21	\$ 0.21	\$ 0.21
Liberty Station Service Replacements	2028	3.000%			\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01
Crossman Peak Microwave Facility	2028	3.000%			\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04	\$ 0.04
Oracle-Tucson 115kV Rebuild	2029	3.000%				\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11	\$ 0.11
Wood Pole Replacement Program FY26-FY28	2028	4.750%			\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16
Coolidge Station Service Replacements	2030	4.750%					\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05
Gila-Knob 161kV Remaining Rebuild	2029	3.000%				\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25	\$ 0.25
Bouse Upgrade Project	2030	3.000%					\$ 0.64	\$ 0.64	\$ 0.64	\$ 0.64	\$ 0.64	\$ 0.64
Gila Substation 69kV Rebuild	2030	3.000%					\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28	\$ 0.28
Parker-Blythe 161kV #2 Rebuild Phase-1	2030	3.000%					\$ 0.20	\$ 0.20	\$ 0.20	\$ 0.20	\$ 0.20	\$ 0.20
Parker-Blythe 161kV #2 Rebuild Phase-2	2031	3.000%						\$ 0.18	\$ 0.18	\$ 0.18	\$ 0.18	\$ 0.18
Parker-Blythe 161kV #2 Rebuild Phase-3	2032	4.875%							\$ 0.26	\$ 0.26	\$ 0.26	\$ 0.26
Gila Substation 34.5kV Rebuild	2032	4.000%							\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16

*NOTE: All values in dollars per KW-Year

8.7 Rate Impacts: Proposed Out-Year Projects

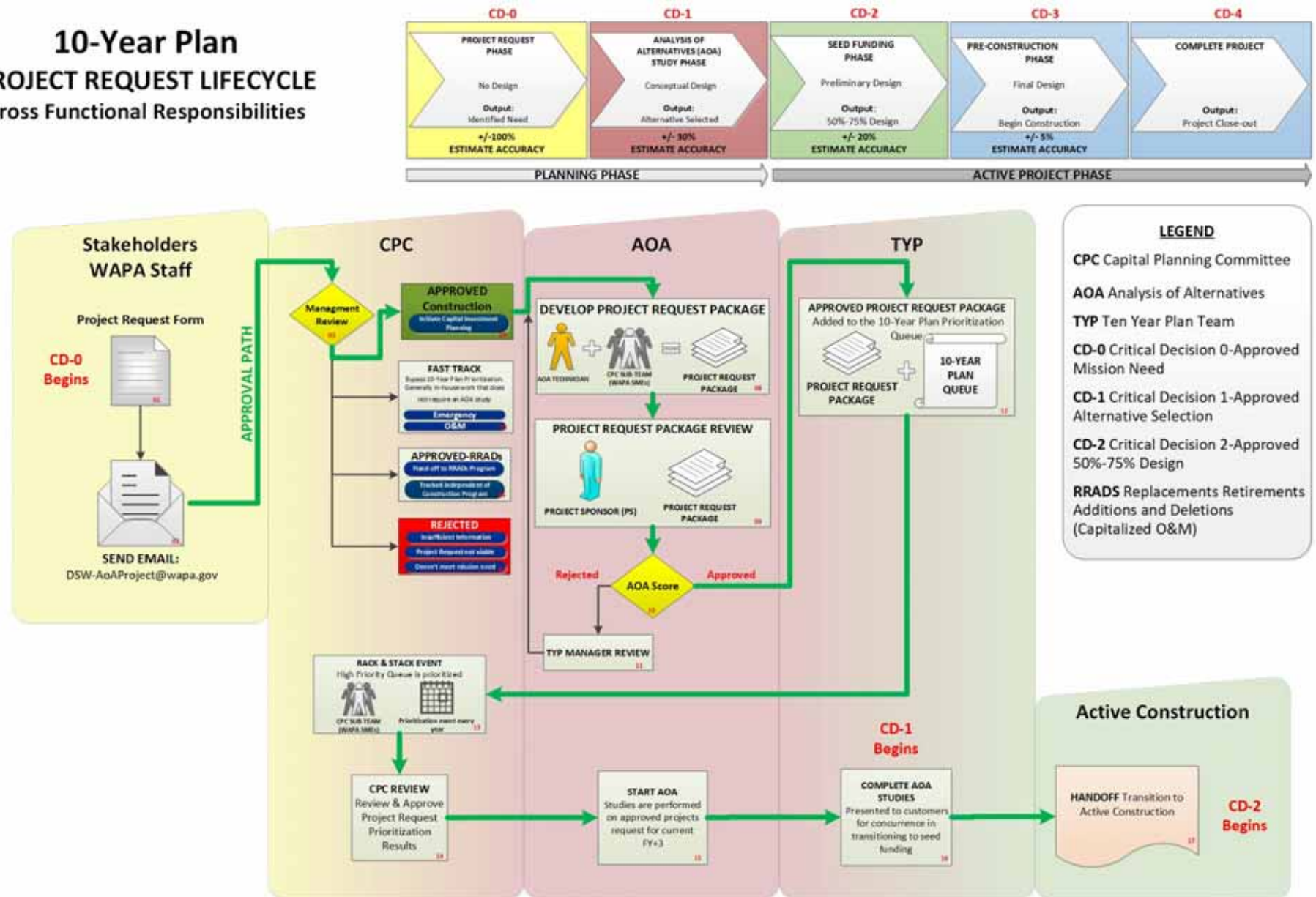
PROJECT NAME	IN SERVICE DATE	INTEREST RATE	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Capital O&M Program	Yearly	various			\$ 0.13	\$ 0.13	\$ 0.14	\$ 0.14	\$ 0.15	\$ 0.15	\$ 0.16	\$ 0.16
Mead Redundant Bus Diff Relays 230kV	2031	5.125%						\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05	\$ 0.05
Mead Redundant Bus Diff Relays 500kV	2031	5.125%						\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.02	\$ 0.02
Blythe-Headgate Rock #1 161kV Rebuild	2034	5.125%									\$ 0.25	\$ 0.25
Wellton New Control Building	2033	5.125%								\$ 0.04	\$ 0.04	\$ 0.04
Parker Substation 161kV Replacements	2034	5.125%									\$ 0.18	\$ 0.18
Parker Substation 230kV Replacements	2034	5.250%									\$ 0.13	\$ 0.13
Bouse-Headgate Rock 161kV Rebuild	2035	5.250%										\$ 0.11
Wood Pole Replacement Program FY29-FY31	2031	5.125%						\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17	\$ 0.17
Breaker Replacement Program FY30-FY32	2032	5.250%							\$ 0.13	\$ 0.13	\$ 0.13	\$ 0.13
Wood Pole Replacement Program FY32-FY34	2034	5.250%									\$ 0.16	\$ 0.16
Breaker Replacement Program FY33-FY35	2035	5.250%										\$ 0.13
Wood Pole Replacement Program FY35-FY37	2037	5.250%										
Breaker Replacement Program FY36-FY38	2038	5.250%										

*NOTE: All values in dollars per KW-Year

Fiscal Year Totals- All Projects	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Total/kW-Year	\$ 0.26	\$ 0.89	\$ 1.38	\$ 2.01	\$ 3.19	\$ 3.62	\$ 4.17	\$ 4.22	\$ 4.96	\$ 5.19
Total/kW-Month	\$ 0.02	\$ 0.07	\$ 0.11	\$ 0.17	\$ 0.27	\$ 0.30	\$ 0.35	\$ 0.35	\$ 0.41	\$ 0.43

9. APPENDIX A: DSW Ten-Year Plan Project Lifecycle

10-Year Plan PROJECT REQUEST LIFECYCLE Cross Functional Responsibilities



10. Appendix B: Annual Meeting Cycle



11. Appendix C: DSW Transmission Systems



11.1 Pacific Northwest-Pacific Southwest Intertie Project

Intertie was authorized by the Pacific Northwest Power Marketing Act of August 31, 1964. Originally, the Intertie was envisioned to connect the Pacific Northwest with the Pacific Southwest with AC and DC transmission line segments.

The DSW portion consists of a 238-mile, 345-kV line from Mead Substation in Nevada to Liberty Substation in Arizona; a 19-mile, 230-kV line from Liberty Substation to Westwind Substation in Arizona; a 22-mile, 230-kV line from Westwing Substation to Pinnacle Peak Substation in Arizona; and two segments that came online in April 1996—the 260-mile, 500-kV line from Marketplace Substation in Nevada to Perkins Substation in Arizona and the 202-mile, 500-kV line from Marketplace Substation to the existing Adelanto Substation in Southern California.

Intertie does not provide firm electric service or project use power; however, its transmission system is used to deliver federal hydropower from other projects.

System Information

Substations	7
Transmission Line Structures	2,580
Total Circuit Miles	591

11.2 Parker-Davis Project

P-DP was formed by consolidating two projects in 1954; Parker Dam and Davis Dam. Parker Dam and Parker Powerplant, which created Lake Havasu (155 miles below Hoover Dam on the Colorado River), were authorized by the Rivers and Harbors Act of 1935. The Parker Powerplant has 4 generating units with an installed capacity of 120 MW.

Davis Dam located on the Colorado River, 67 miles below Hoover Dam, created Lake Mohave. Davis Powerplant has 5 generating units with an installed capacity of 255 MW. P-DP is operationally integrated with the Hoover Powerplant. In the event that P-DP generation is insufficient to meet firm contractual obligations, banked Hoover generation maybe used. Alternatively, WAPA may purchase power from other resources.

P-DP supplies the electrical needs of more than 300,000 people. Power generated from this project is marketed to customers in Nevada, Arizona, and California. The DSW facilities that are part of P-DP include substations such as Davis, Parker, Gila, Lone Butte, Coolidge, and Tucson. Transmission lines within this project range from 34.5-kV to 230-kV and are constructed of wood, steel, or concrete.

System Information

Substations	48
Transmission Line Structures	9,993
Total Circuit Miles	1,710



11.3 Central Arizona Project

Authorized by Congress in 1968 to improve water resources, CAP is one of three related water development projects that make up the Colorado River Basin Project, a multipurpose water resource development and management project, which provides supplemental Colorado River water to nearly one million acres of Native American and non-Native American irrigated agricultural land in Arizona and New Mexico. Additional functions of the project include water for municipal and industrial use in the metropolitan areas of Phoenix and Tucson. The project also provides power generation, flood control, outdoor recreation, sediment control, and fish and wildlife conservation.

Water from the project is taken from the Colorado River and transported to project lands through a series of pumps, tunnels, and aqueducts. This Project can be viewed as an over 300-mile conveyance system that transports Colorado River water from a diversion intake on Lake Havasu behind Parker Dam to as far as the San Xavier Indian reservation just south of Tucson.

The CAP power features are located in Maricopa, Pima, and Pinal counties, and serves customers in those areas. The project will ultimately provide Colorado River water to nearly 700,000 acres of non-Indian agricultural lands and up to 136,900 acres of Tribal lands. CAP transmission facilities include a 230-kilovolt (kV) line that begins at McCullough Substation in Nevada and interconnects to the Davis and Parker substations in Arizona. CAP has capacity rights in the transmission line from Parker to Liberty substations in Arizona. CAP also includes 230-kV lines east of Phoenix, Arizona, and several 115-kV lines that feed pumping stations near Salome and Tucson, Arizona. Currently, over six million people in several municipalities in the Phoenix metropolitan area receive Colorado River water from the Central Arizona Project.

<u>System Information</u>	
Substations	7
Pumping Plants	15
Total Circuit Miles	273 miles

11.4 ED5-Palo Verde Hub Project

Electrical District 5-to-Palo Verde Hub Project’s 230/500-kV transmission line, completed under WAPA’s Transmission Infrastructure Program as a public-private partnership, began commercial operation in 2015. The transmission line is integrated with the P-DP and provides service from the Palo Verde Hub to ED5 Substation south of Phoenix, Arizona.