



Colorado River Aqueduct 69 kV & 230 kV Transformers Replacement Project

Engineering & Operations Committee

Item 7-4

April 12, 2021

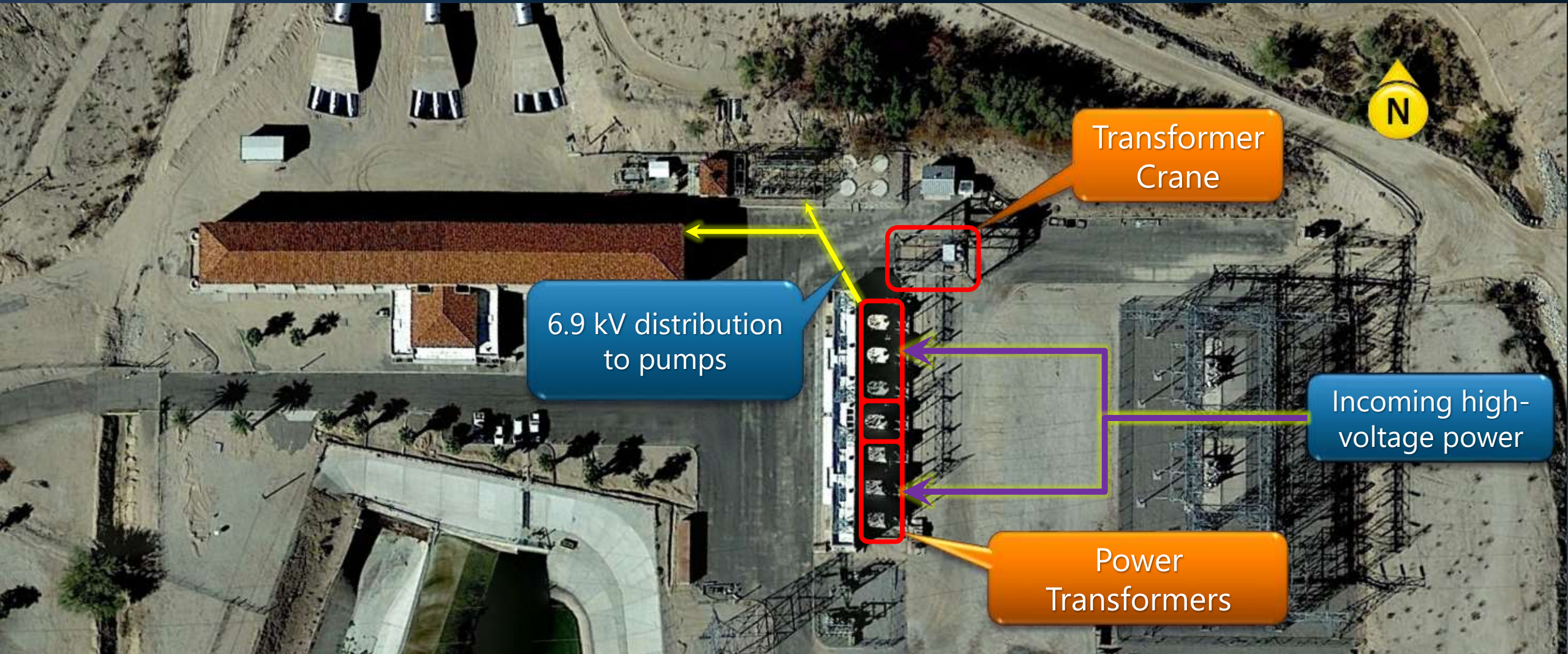
Current Action

- Authorize an agreement with HDR Engineering, Inc. in an amount not to exceed \$1,700,000 for engineering design services to replace the CRA transformers
- Authorize an agreement with Geosyntec Consultants, Inc. in an amount not to exceed \$360,000 for environmental site assessments

Location Map



Typical Site Layout



Transformer
Crane

6.9 kV distribution
to pumps

Incoming high-
voltage power

Power
Transformers

Iron Mountain Pumping Plant

Background

- Facilities initially constructed in 1939
- 35 transformer units
 - 15 in service since 1939
 - 20 in service since late 1950s
 - Exceeded typical life expectancy
- Five transformer cranes
 - Frayed wiring
 - Deteriorated coatings



Hinds Pumping Plant

Alternatives Considered

- Rely on in-house staff for all components of the preliminary design
 - Lack specialized knowledge in large power transformer design
- Use both consultant & in-house staff for preliminary design
 - Selected option
 - Maximize use of in-house staff to develop and reinforce areas of core competencies
 - Use consultant for specialized technical design or as-needed for discrete project elements

HDR Engineering, Inc.

New Agreement

- Competitively selected under RFP 1252
- Scope of work
 - Preliminary design for transformer replacement
 - Transformer procurement specifications
 - Procurement support
 - Construction sequencing plan
 - Construction cost estimates
- SBE participation level: 25%
- NTE amount: \$1,700,000

Geosyntec Consultants, Inc.

New Agreement

- Prequalified under RFQ 1123
- Scope of work
 - Phase 2 environmental site assessments (five sites)
 - Soil sampling
 - Lab analysis
- SBE participation level: 25%
- NTE amount: \$360,000

Metropolitan Scope

- Document existing conditions
- Perform 3-D surveying
- Review consultant work
- Support environmental consultant
- Conduct value engineering
- Prequalify transformer vendors
- Conduct transformer bid solicitation
- Conduct project management



Typical 3-D surveying instrument

Allocation of Funds

Professional Services

HDR Engineering, Inc. \$1,700,000

VE consultant 50,000

Metropolitan Labor

Preliminary design 877,000

Record drawings 1,275,000

Proj. management and planning 712,000

Materials and Incidentals 10,000

Remaining Budget 676,000

Total: \$5,300,000

Note: Site assessment by Geosyntec budgeted under O&M

Project Schedule



Preliminary Design



Construction



Board Action



Final Design



Procurement



Completion

Board Options

- Option #1

- Authorize an agreement with HDR Engineering, Inc. in an amount not to exceed \$1,700,000 for engineering services to replace the CRA transformers.
- Authorize an agreement with Geosyntec Consultants, Inc. in an amount not to exceed \$360,000 for environmental site assessments.

- Option #2

- Do not proceed with the project at this time, and staff will continue to monitor the operational status of the transformers.

Staff Recommendations

- Option #1

