



Radial Gate Replacements

Engineering and Operations Committee

Item 7-2

March 7, 2022

Current Action

- Authorize two professional services agreements for design activities to support radial gates replacement projects
 - Hazen and Sawyer in an amount not to exceed \$890,000 for design to upgrade the Cabazon Radial Gate Facility (Project 1)
 - LEE + RO, Inc. in an amount not to exceed \$904,000 to replace radial gates along the San Diego Canal (Project 2)

Distribution System

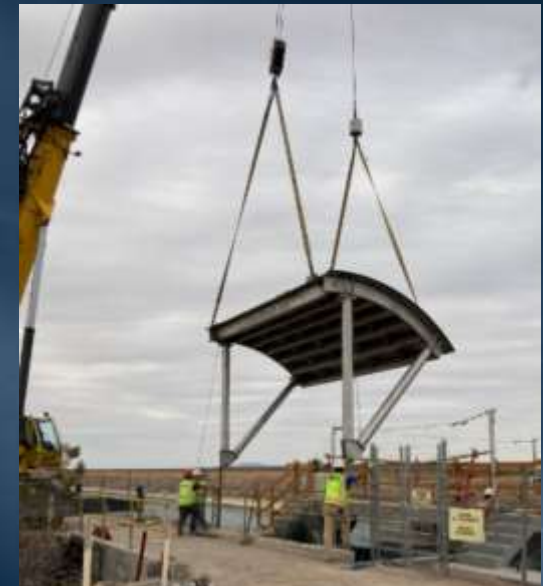


Background

- Radial gates used to shut down, isolate & divert flows along the aqueduct and canal
- Electric motor actuator used to open & close the gate
- Recent inspections identified
 - Corroded gates
 - Failed protective coatings
 - Material loss in steel framework
 - Deteriorated actuators



Radial gate example



Installation of new radial gate on CRA in 2020

1. Cabazon Radial Gate Facility Upgrades

- Constructed in 1936
 - Original CRA equipment
- Consists of two radial gates
 - 17 feet wide by 16 feet high
- Additional upgrades needed
 - Gate sealed to prevent leaks
 - Crane needed to open the gate



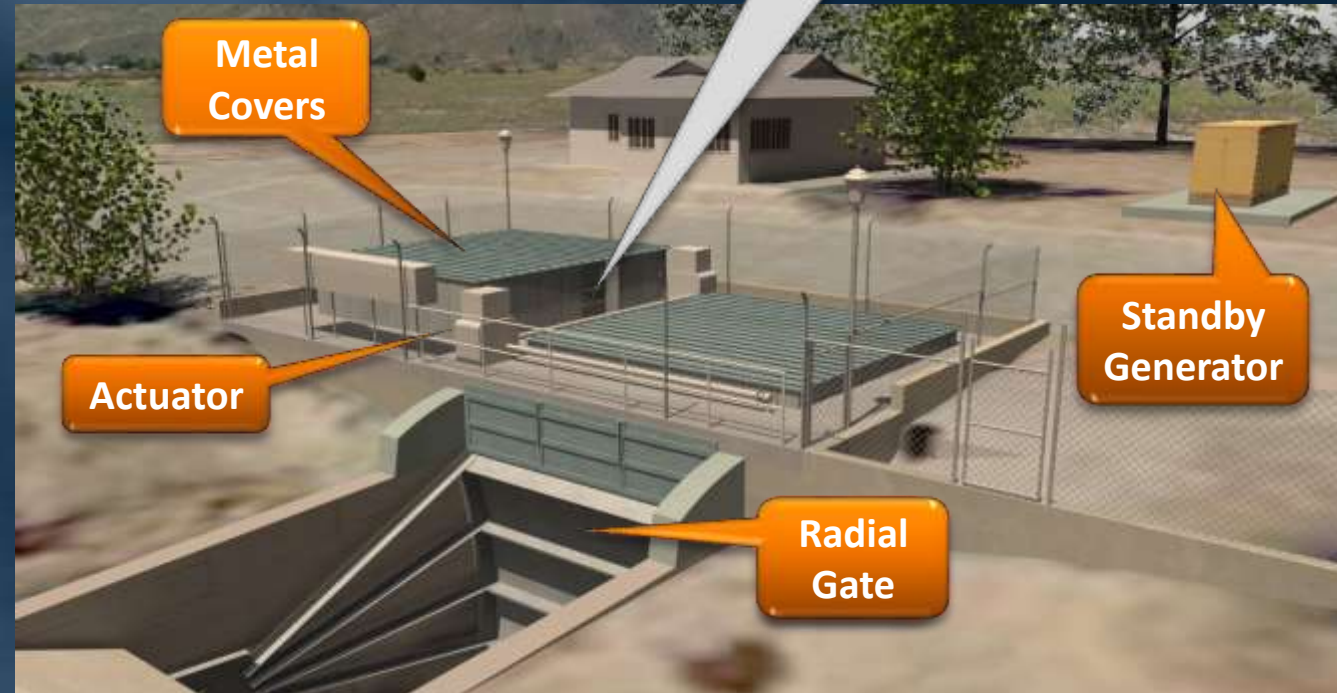
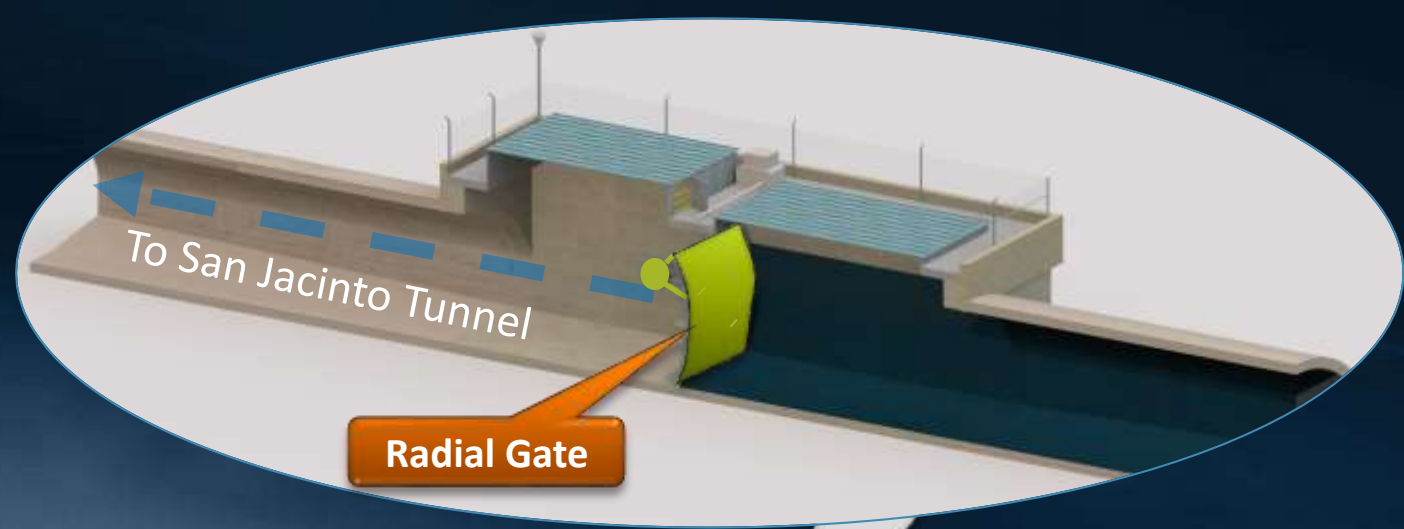
Cabazon Radial Gate Facility



Corroded Radial Gate

1. Planned Work

- Replace two radial gates, motor actuators, electrical & control equipment
- Install new sensors to monitor water levels & water quality
- Install new metal roof covers with locking mechanism & standby generator
- Upgrade site's security system



Cabazon Radial Gate Facility planned upgrades

1. New Agreement - Hazen and Sawyer

- Prequalified under RFQ 1215
- Scope of work
 - Preliminary investigations
 - Technical assessments & analyses
 - Detailed design
 - Preparation of drawings & specifications
 - Development of construction cost estimates
 - Technical support during bidding period
- SBE participation level: 25%
- NTE amount: \$890,000

1. Metropolitan Scope

- Design instrumentation & controls
- Conduct field & geotechnical investigations
- Provide technical oversight
- Perform project controls & project management
- Advertise & receive competitive bids

2. San Diego Canal Gate Replacements

- Radial gates V-06 and V-08 are part of San Diego Canal system
 - V-06: 30 feet wide by 15 feet high
 - Isolates Lake Skinner & used for flow modulation
 - V-08: 15 feet wide by 15 feet high
 - Isolates the San Diego Canal & used for flow modulation
- In service for 45 years



V-08 radial gate partially submerged in water

2. Planned Work

- Replace
 - Two radial gates & motor actuators
 - Gate seal plates
 - Electrical & control equipment



Corrosion on the V-06 radial gate

2. New Agreement – LEE + RO, INC.

- Prequalified under RFQ 1215
- Scope of work
 - Preliminary investigations
 - Technical assessments & analyses
 - Detailed design
 - Preparation of drawings & specifications
 - Development of construction cost estimates
 - Technical support during bidding period
- SBE participation level: 100%
- NTE amount: \$904,000

2. Metropolitan Scope

- Design instrumentation & controls
- Conduct field & geotechnical investigations
- Provide technical oversight
- Perform project controls & project management
- Advertise & receive competitive bids

Alternatives Considered

- Utilize Metropolitan staff for design
 - With current workload, staff not immediately available
- Selected option
 - Professional services agreement for the subject projects
 - Consultant & staff work as a hybrid team

Allocation of Budgeted Funds

| | 1. Cabazon Radial Gate Facility Upgrades | 2. San Diego Canal Radial Gate Replacement |
|---------------------------------|--|--|
| Metropolitan Labor | | |
| Preliminary Investigations | \$ 239,000 | \$ 210,000 |
| Final Design | 160,000 | 250,000 |
| Owner Costs | 247,000 | 291,000 |
| Professional/Technical Services | | |
| Hazen and Sawyer | 890,000 | - |
| LEE + RO, Inc. | - | 904,000 |
| CR Consultant | 45,000 | 40,000 |
| VE Consultant | - | 60,000 |
| Remaining Budget | 159,000 | 205,000 |
| | Total | |
| | \$1,740,000 | \$1,960,000 |

Total amount: \$3,700,000

Project Schedules



Board Options

- Option #1
 - a. Authorize an agreement with Hazen and Sawyer for a not-to-exceed amount of \$890,000 for design to upgrade the Cabazon Radial Gate Facility.
 - b. Authorize an agreement with LEE + RO, Inc. for a not-to-exceed amount of \$904,000 for design to replace radial gates along the San Diego Canal.
- Option #2
 - Do not proceed with the agreements at this time.

Staff Recommendation

- Option #1

