



Engineering, Operations, & Technology Committee

# Black Metal Mountain 2.4 kV Electrical Power Upgrades

Item 7-3

April 8, 2024

# Item 7-3

## Black Metal Mountain

### 2.4 kV Electrical Power Upgrades

#### Subject

Authorize an increase of \$1,100,000 to an agreement with HDR Engineering Inc. for a new not-to-exceed total amount of \$1,735,000 for final design services to replace the 2.4 kV power line that serves the Black Metal Mountain Communications Site

#### Purpose

Improve reliability of the CRA facilities' communication and optimize the efficiency and safety of long-term maintenance operations

#### Recommendation and Fiscal Impact

Authorize an increase to an existing agreement for final design services to replace the 2.4 kV power line and enhance the site access road to Black Metal Mountain Communications Site

Fiscal impact of \$2 M

#### Budgeted

# Location Map



# Black Metal Mountain Site Map



# Background

- Installed in the 1970s
- Critical link for Metropolitan desert facilities
  - Desert Operational Control Center (DOCC)
  - Emergency communication (two-way radio)
  - Security monitoring
  - 230 kV teleprotection
  - SCADA transmission
- Site leased to other government agencies including local first responders



Black Metal Communication Site

# Background

- Power usage has increased over the years
  - Peak power demand exceeds rated capacity
  - Circuit breakers trip on a regular basis during the hottest desert conditions
- Wood poles are deteriorating due to weathering
  - Pole extensions & supports require frequent repairs
- Steep & unpaved access road
- Preliminary design complete



Existing Black Metal Site Access Road



Light Duty Steel Pole

## Planned Work

- Upgrade the existing one-mile-long power line
  - New metal power poles & larger conductors
- Improve electrical functionality at communication sites
  - Install three new transformers
  - Transition from overhead to underground electrical distribution
- Improve site access road
  - Install road base materials & improve drainage
  - Reduce road slopes (where practical)
  - Install safety measures

## Black Metal Mountain 2.4 kV Electrical Power Upgrades

### Alternatives Considered

- Remove some electrical loads from the site
  - Requires termination of existing leases
  - Does not address rehabilitation of deteriorating poles
- Selected Alternative
  - Upgrade the power line & replace the deteriorating poles
  - Improve on-site electrical distribution
  - Address site access issues

**Black Metal  
Mountain**  
2.4 kV Electrical  
Power Upgrades

## HDR Engineering Inc. Agreement

- Prequalified under RFQ 1305
  - Completed preliminary design
- Scope of Work:
  - Develop final design drawings & specifications
  - Prepare cost estimate
  - Participate in constructability review
  - Technical assistance during bidding
- Amendment amount: \$1,100,000
- NTE amount: \$1,735,000
- SBE participation level: 25%

**Black Metal  
Mountain**  
2.4 kV Electrical  
Power Upgrades

## Metropolitan - Scope of Work

- Conduct constructability review & support activities
- Provide technical input & review consultant design work
- Perform project management & environmental support

# Allocation of Funds

## Black Metal Mountain 2.4 kV Electrical Power Upgrades

Metropolitan Labor

Final Design \$ 290,000

Owner Costs (Proj. Mgmt., Contract Admin., Envir. Support) 270,000

Professional/Technical Services

HDR Engineering Inc. 1,100,000

Constructability Review Consultant 80,000

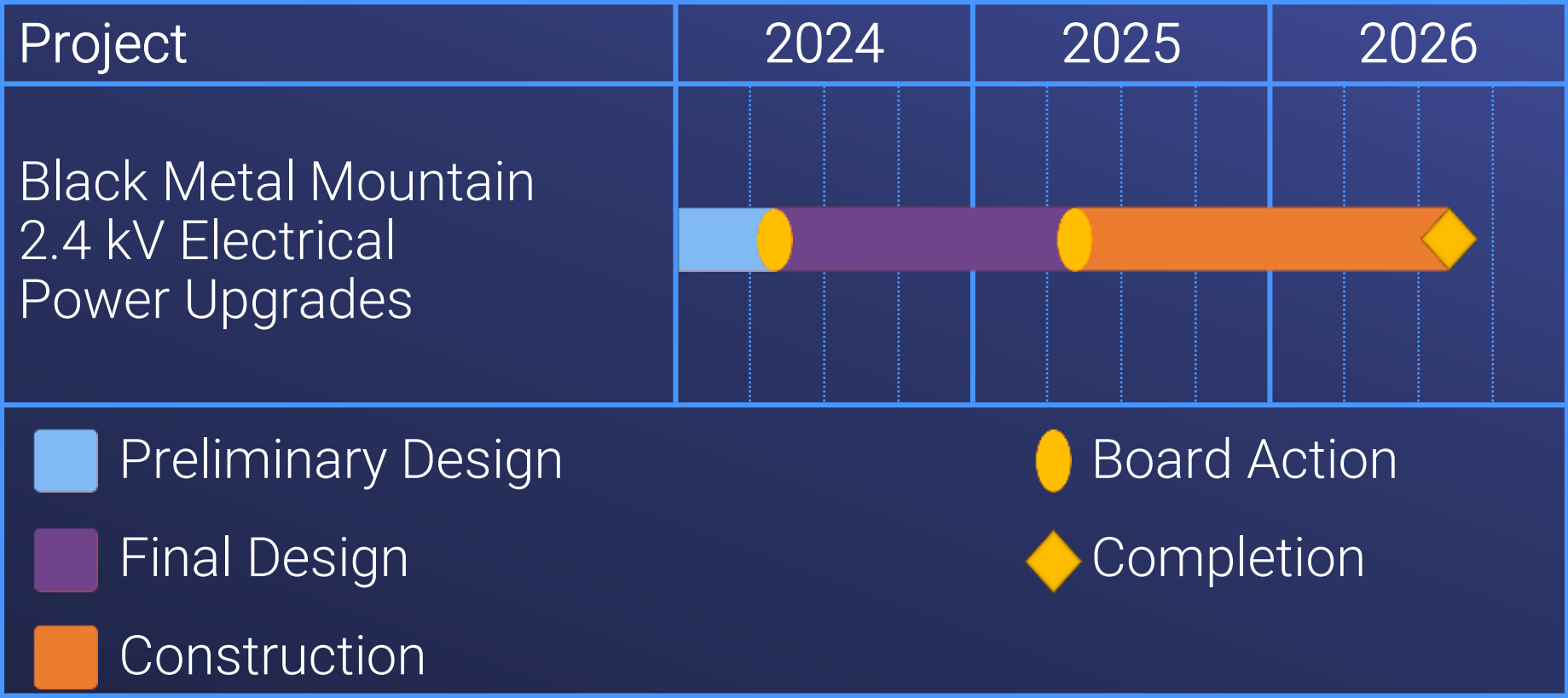
Environmental Consultant 150,000

Remaining Budget 110,000

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Total \$ 2,000,000

# Project Schedule



# Board Options

- Option #1

Authorize an increase to an existing agreement with HDR Engineering Inc. for a new not-to-exceed amount of \$1,735,000 for design services for the Black Metal Mountain 2.4 kV Electrical Power Upgrades project.

- Option #2

Do not proceed with the project at this time.

# Staff Recommendation

- Option #1

