

Appendix H

Electrical Power Supply Review

DATE: December 1, 2023
TO: Deschutes County
FROM: Connor Wittman PE, Parametrix
SUBJECT: Electrical Power Supply Review (Subtask 6) (Subtask 6)

General

The electric utility provider for both the Moon Pit and Roth East landfill locations is Central Electric Cooperative, Inc. (CEC)

Both potential landfill locations were evaluated with respect to initial and future power system requirements. The CEC power distribution system would require upgrades to provide the necessary electrical service capacity to either location.

For the Moon Pit location, the utility cost estimate for power system upgrades is ~\$2,000,000.

For the Roth East location, the utility cost estimate for power system upgrades is ~\$700,000.

Estimated Power Demand

Each location would require a new electrical service sized appropriately to provide power for the initial landfill loads and accommodate future grid-connected Landfill Gas (LFG) power generation.

Based on existing landfill electrical demand data for similar sites, and anticipated future LFG power generation, the following estimated loads were used for communication with the utility provider:

Table 1. Estimated Electrical Loads

LOCATION	ESTIMATED POWER DEMAND
MOON PIT:	337.5 KW
ROTH EAST:	262.5 KW
LFG GENERATION:	4800 KW

Anticipated landfill loads include:

- Scale House / Electric Gate
- Office / Admin Building
- Maintenance Building
- Water Supply Well Pump
- Leachate Pump Stations
- Gas Vacuum Blower

Moon pit is expected to have eight Leachate Pump Stations, compared to four at Roth East, and will therefore have a higher initial power demand. For the purposes of this evaluation, this initial



difference in demand is negligible compared to the utility infrastructure installation required to accommodate the future 4800 kilowatt (kW) LFG generation.

Power Distribution Infrastructure Requirements

For both sites, CEC would need to upgrade and extend existing overhead utility power lines to the landfill location. Due to the large capacity of future LFG power generation, the electrical service will need to be configured for three-phase power.

The general utility power distribution upgrade approach for both locations is as follows:

- Connect to existing utility distribution system at closest available overhead three-phase power lines.
- Install new three-phase power lines as required to reach new landfill locations.
- Install local substation to provide landfill power service and provide connection point for future LFG generation.

Depending on the landfill location and routing of overhead power lines, new easements will need to be established on either private or Bureau of Land Management (BLM) land.

Moon Pit

The Moon Pit location will require approximately 9.5 miles of overhead utility line upgrades from the closest three-phase power connection point. Roughly 2.6 miles will consist of upgrading an existing single-phase pole line.

New power poles and three-phase power lines will need to be extended an additional 7 miles to the landfill location, mostly along Highway 20. Easements may be required through BLM property. See Figure 1 below.

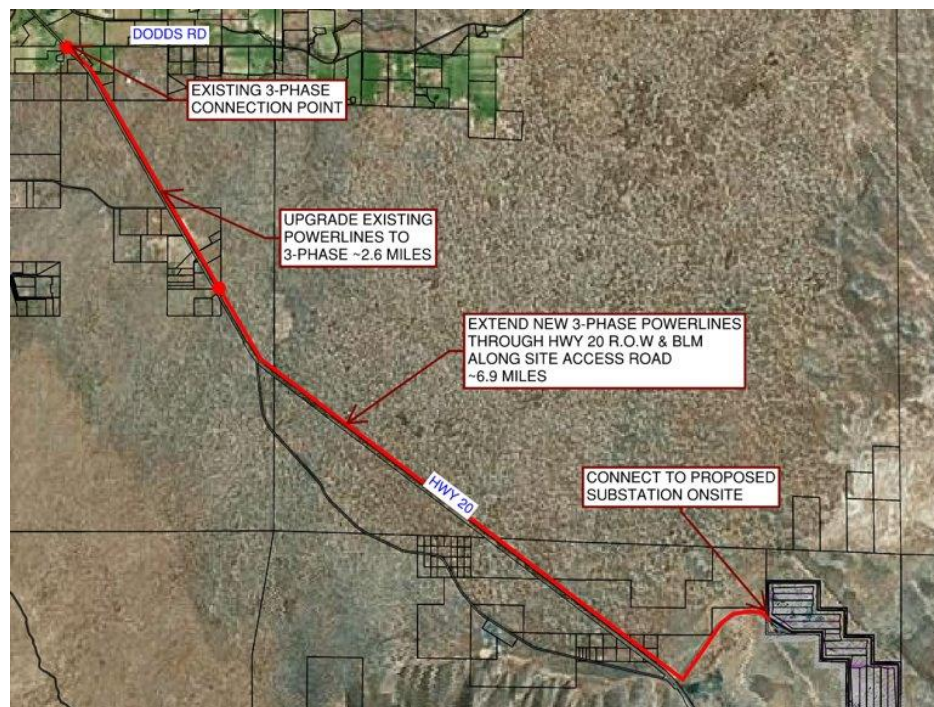


Figure 1. Moon Pit Electrical Service

Discussions with CEC approximated the cost of this upgrade at roughly \$2,000,000 with a 50-60 week lead time for material acquisition.

Roth East

The Roth East location will require approximately 2.3 miles of overhead utility line upgrades from the closest three-phase power connection point. Roughly 1.2 miles will consist of upgrading an existing single-phase pole line.

New power poles and three-phase power lines will need to be extended an additional 1.1 miles to the landfill location. Easements may be required through private property.

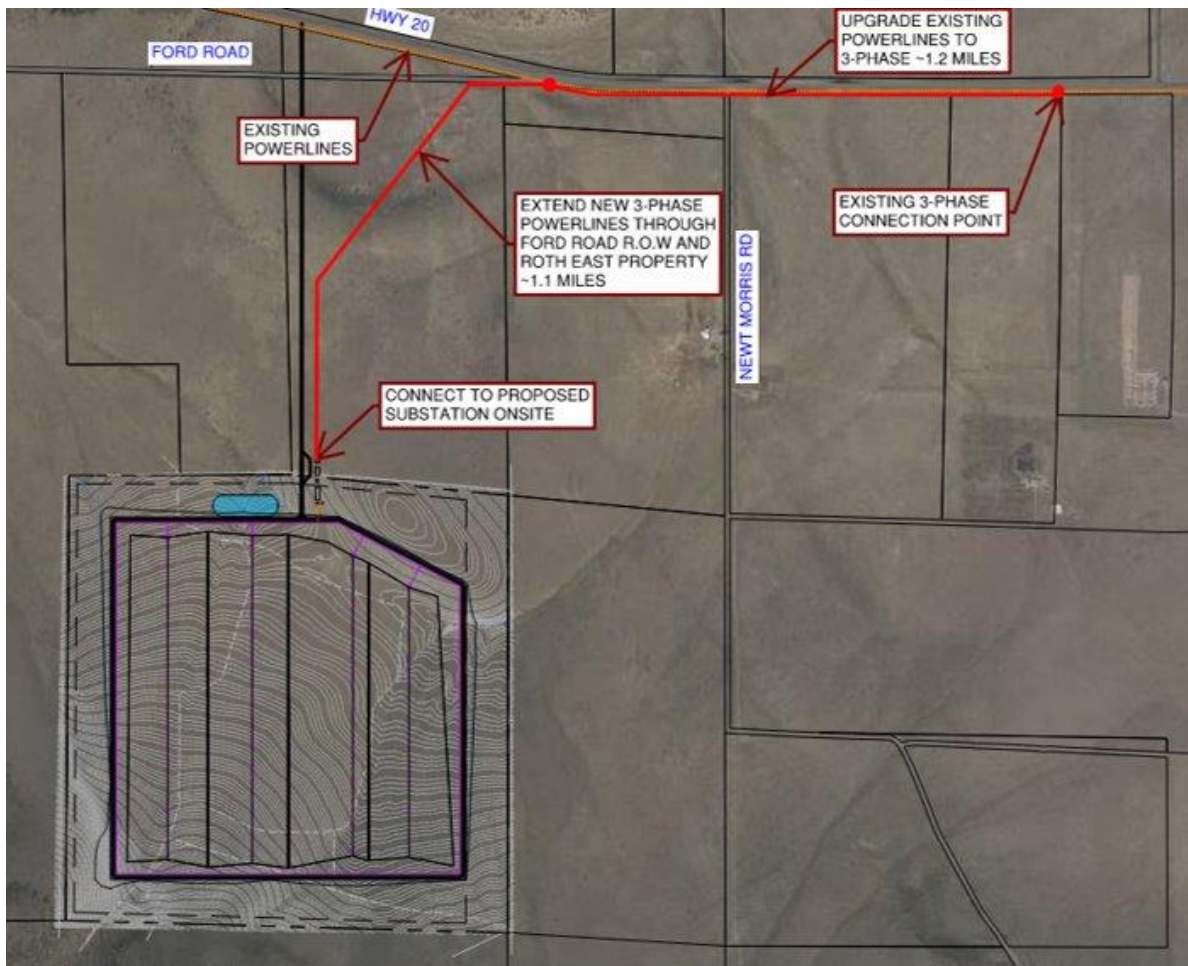


Figure 2. Roth east Electrical Service

Discussions with CEC approximated the cost of this upgrade at roughly \$700,000 with a 50-60 week lead time for material acquisition.