



## Underground Services

Securing Underground Resiliency

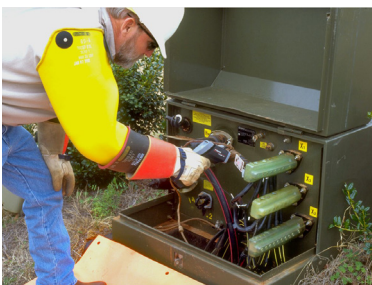
Businesses, communities, and consumers around the globe rely on the integrity and reliability of hundreds of thousands of miles of underground electric infrastructure to ensure system resiliency. Whether your assets consist of underground vaults below densely populated city streets or a network of cable systems in suburban neighborhoods or remote locations, Osmose® offers a suite of underground services to ensure the reliability of your infrastructure through capitalized life extension program services.



### Vault Assessment & Restoration

Osmose FAA-certified drone pilots work in tandem with professionally-trained field vault technicians to capture data and images via Uncrewed Aerial Systems (UAS), perform targeted restoration to conserve structural integrity and extend useful service life, and assess hazardous conditions or other reliability concerns.

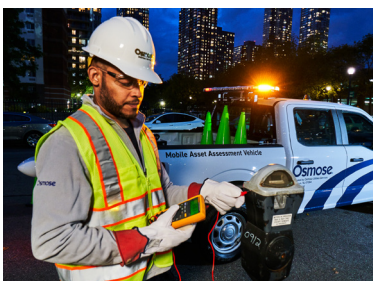
- Equipment condition assessment
- Infrared thermography
- Stray voltage testing
- Map and asset inventory updates
- Transformer assessment
- Contracted maintenance and minor repairs



### Padmount Transformer Assessment & Restoration

Qualified Osmose technicians assess and perform any crucial, contracted maintenance to restore and extend the service life of padmounted equipment that has deteriorated due to age and corrosion. In addition, technicians can apply protective commercial coatings that have proven to add decades to the padmount's service life.

- Exterior and interior condition assessment
- Data collection
- Infrared, contact voltage and ground resistance testing
- Bushing, fuse, arrestor assessments
- Cabinet repair and coating applications
- Component, tag/label replacement
- Debris and pest removal



### Power Survey™ Contact Voltage Detection

When underground faults result in contact voltage, public structures such as roadways, sidewalks, streetlights, playground equipment, and fences, can become energized, posing a deadly risk to public safety. Osmose Power Survey identifies contact voltage faults through the advanced technology of a Mobile Asset Assessment Vehicle (MAAV), allowing utilities to address problematic failures before they impact safety or cause electrical losses.

- Survey area identification and GPS tracking
- Observation and measurement records
- Voltage reading verification
- Data delivery
- Troubleshooting and mitigation assistance
- 24-hour Network Operations Center



## Substation Design & Engineering

Whether the demand for increased system efficiency requires a new substation or an expansion of an existing one, Osmose's step-by-step approach to substation consulting and design services supports the reliability and efficient delivery of power generation, transmission, and distribution systems.

- Location evaluation
- Site mapping and land survey
- Material drawing, electrical diagram, and foundation revision project management
- Construction oversight and documentation oversight
- Final inspection, cleanup, and energization testing
- Closeout negotiations and documentation



## Underground Cable Life Cycle Management

Newly installed and decades-old underground cable systems are vulnerable to defects that can occur during manufacturing, shipping and handling, and installation, or are subject to age and environmental factors. Factory Grade® Cable Scanning Technology by IMCORP®, an Osmose company, identifies and locates the presence or absence of defects within underground cable system assets, eliminating the time, resources, outages, and costs associated with unnecessary full cable replacement.

- New cable system commissioning
- Aged cable system life extension
- Accessory performance consultation
- Root cause analysis
- Reliability analytics
- Cable/Circuit rehabilitation and design work orders

### Transmission & Distribution



### Renewable Energy Cable Collector Systems



### Mission Critical, Industrial, & Event Facilities



## Capitalized Underground Life Extension

Utilities across the country rely on Osmose Underground Services to ensure the resiliency, reliability, and safety of underground infrastructure. Our consultation, assessment, restoration, and replacement services work to extend the useful life of underground assets and qualify as capital expenditures.

- **Assessment**
- **Exterior Restoration**
  - Painting and leveling
  - Lock replacement
  - Signage replacement
- **Interior Maintenance\***
  - Switching
  - Debris removal
  - Infrared imagery
- **Testing**
  - Cable scanning
  - Defect locating / ID
  - Fuse replacement
  - Bushing replacement
- **Add-On Services**
  - Electrical repairs
  - Underground engineering design, as-builts, and GIS updates
  - Cable defect repair / splicing
  - Bushing replacement

*\*All work performed by Osmose under contractual agreement.*

To learn more, contact your local Osmose expert at [underground@osmose.com](mailto:underground@osmose.com).