



Fiber & Wireless Make-Ready Design Services



Cooperatives and municipals work to provide cost-effective fiber-to-the-home services to electric customers while adhering to project milestones and the reporting structure needed to satisfy funding requirements. Osmose is uniquely positioned to help.

For more than 15 years, Osmose has been supporting broadband buildouts (wireline, wireless, underground) on behalf of pole owners, engineering firms, and broadband providers.

- Osmose can provide assistance with make-ready surveys, pole loading analysis, and make-ready designs to verify the proposed design and recommend cost-effective remedies to safely attach to the pole.
- For pole owners dealing with incoming applications to attach new plant, we manage risk by providing timely application reviews (surveys, pole loading assessment, clearance analysis, MR designs, and cost estimates).
- For customers deploying new broadband networks, we evaluate proposed designs, evaluate current field conditions, and determine the most cost-efficient make-ready solution.
- If designs extend to foreign-owned poles, we develop accurate, complete applications to accelerate the approval process.

Osmose Helps Minimize Project Risks by:

Providing complete make-ready field surveys that include development of detailed pole models with accurate measurements driven by Osmose's Digital Measurement Technology (DMT). DMT allows crews to safely measure all pole attachments and conductor sizes in both the power and communication space and verify measurements in the office to perform quality control and quickly resolve design discrepancies.

Assessing the impact of new attachments on pole load by performing low-cost load screening to identify new overload issues. For poles that fail screening, our industry-leading O-Calc Pro® software is used to perform comprehensive load analysis and provide detailed reports that illustrate how the recommended make-ready solves the issue.

Delivering a "complete" design to construction because unlike many telco-focused engineering firms, Osmose has extensive experience developing designs in the power space as well as the communications space.

Satisfying construction standards with designs that include RUS codes for all electrical work, reconfiguration of power associated with pole replacements, and extensive NESC expertise to ensure designs adhere to both NESC requirements and the utility's construction standards.



Workflow

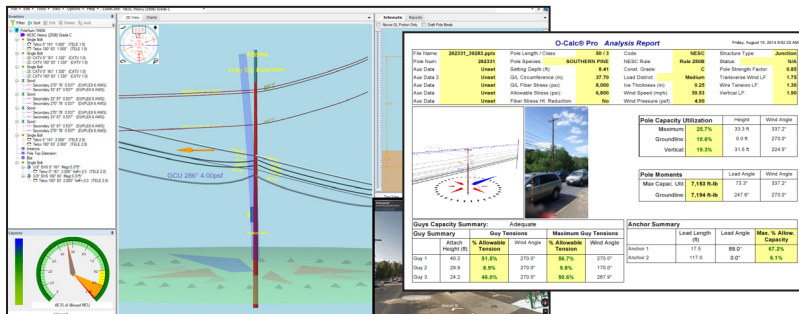
Osmose can manage the following workflow as a turnkey service or provide individual components as needed to most efficiently support our customers' needs.



Potential Cost Savings and Value Adds

- ✓ **Combine pole inspection with make-ready survey:** To ensure poles are in good condition and have the strength required to support the new attachment before construction begins.
- ✓ **Minimize pole replacements:** Osmose can include ET-Trusses to correct overload conditions as alternatives to replacement, and C-Trusses to restore strength at groundline for identified decay/strength issues found during the survey.
- ✓ **Support NESC compliance & design modifications:** Osmose can provide licenses of O-Calc Pro pole analysis software to your engineering team to support clearance and make-ready review and allow you to make design modifications.
- ✓ **Foreign-owned pole attachment application:** Osmose can support requests to attach to foreign (power or telco-owned) poles. We can help drive application approvals through delivery of complete and accurate applications
- ✓ **Update supporting systems:** Osmose has expertise working with various customer WMS, GIS, and design packages to post designs, create work orders, or update systems of record.

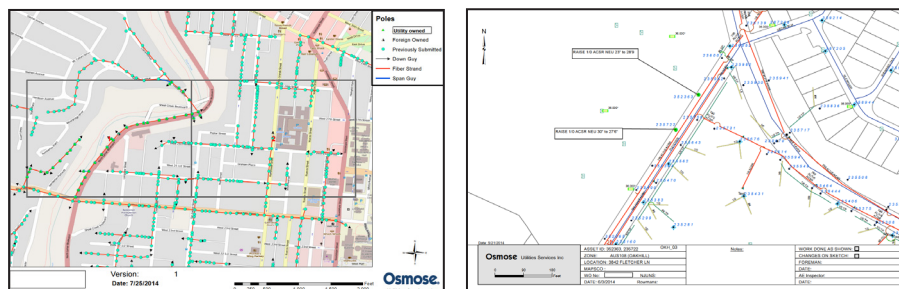
Example Deliverables



Comprehensive clearance and pole loading analysis

Pole No.	Pole Loc.	Location	Line Type	Line Length (ft)	Line Weight (lb/ft)	Line Tension (lb)	Line Sag (ft)	Line Clearance (ft)	Line Notes
1	21780	High Voltage Pole	25' T	21' T	48'	112.2kV	1	Pole Replacement	8% 400-400-400
2	21876	High Voltage Pole	25' T	21' T	48'	112.2kV	1	No Make-Ready	
3	21780	High Voltage Pole	25' T	21' T	48'	112.2kV	1	Grounding	Ground rods 10'
4	21876	High Voltage Pole	24' T	21'	48'	112.2kV	1	Pole Make-Ready	Secure structure into place

Make-ready designs



Application packages can include construction prints and cost estimates.

To contact your local Osmose professional, call 770.631.6995 or email poleinfo@osmose.com.