

PROJECT PROFILE / **FIBER-OPTIC INSTALLATION INITIATIVE**

# BUILDING A RELIABLE BACKBONE FOR CRITICAL COMMUNICATIONS

Facing a large volume of projects for fiber-optic additions to its transmission infrastructure, a large electric utility needed assistance handling the execution. With an integrated programmatic approach, we created an overall program scope, schedule and budget and established processes that improved project efficiency and execution while enhancing stakeholder engagement.



# FIBER-OPTIC IMPROVEMENTS BENEFIT FROM PROGRAMMATIC FRAMEWORK

The organized approach gives the utility better tracking and communication tools while improving efficiency and reliability for its private network.

## PROJECT STATS

### CLIENT

Confidential client

### LOCATION

Western U.S.

### TOTAL PROJECT COST

\$180 million (est.)

# 80+

PROJECTS IN INITIATIVE

# 380

PROJECT MILES

# 2027

ESTIMATED COMPLETION OF INITIATIVE

Fiber-optic networks have become a preferred option to provide high-performance bandwidth in support of critical communications thanks to their high efficiency and low susceptibility to interference. When a large electric utility in the Western U.S. recognized the advantages of fiber optics, it began upgrading its physical network in piecemeal fashion.

In 2016, we helped the utility put its separate and proposed projects together under a programmatic structure. This structure tied together budgets, schedules and scopes to provide consistent and holistic workflows and processes.

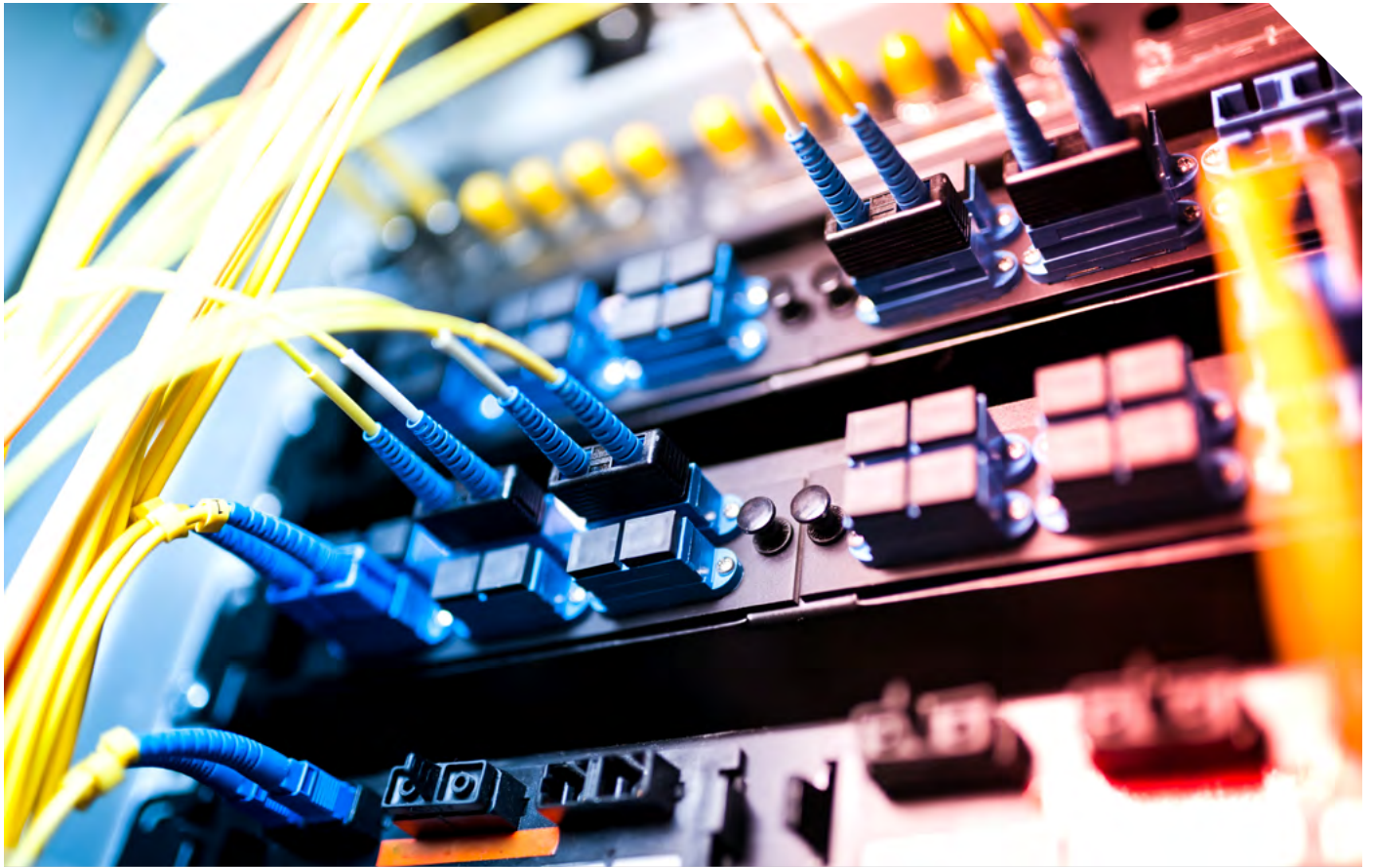
The initiative comprises more than 80 projects, representing about 380 linear project miles. Each project typically takes 18-24 months from initiation to completion. Many of the projects are being installed on existing transmission infrastructure to minimize new construction and leverage existing assets. The projects include underbuild installation of All-Dielectric Self-Supporting (ADSS) cable and overhead installation using Optical Ground Wire (OPGW), in addition to underground lines. In addition to program management, we are providing route selection and

planning services; siting, surveying and permitting support; design engineering for overhead and underground projects; procurement support; constructability reviews and engineering support during construction; and financial reporting.

We have made a significant difference for the utility in three key areas:

**Process improvements:** Beginning with an onboarding approach for new team members, we have helped our client streamline ramp-ups on projects. We have saved time on design, reviews and construction by establishing consistent reviewers; developing process mapping, including identifying exchange points with various stakeholders; and using quality and deliverable checklists. Similarly, permitting checklists have consolidated information to accelerate submittals and eliminate unnecessary back-and-forths.

**Stakeholder management:** Gaining internal stakeholder understanding and support for the initiative was difficult when each project was being managed separately. By developing the programmatic framework for the overall initiative and creating a fact sheet that outlined the overall goal and objectives of the initiative, as



well as the high-level scope, schedule and program value, we were able to communicate the big-picture context more efficiently. This has led to greater stakeholder engagement and faster response times.

**Technology support:** We developed a suite of program tools to manage everything from cost and schedule to scope and risk. This has included web-based databases for overall document management, controls and workflow management to improve transparency and maintain good record retention practices. We are also deploying unmanned aerial vehicles (UAVs) for planning and fieldwork. As the initiative proceeds, we are updating those tools and templates to keep up with any

changes. These tools are giving the utility greater visibility for budget forecasting, and are even being leveraged for additional programs to take advantage of the utility-specific customization already developed.

In addition, we have helped the utility establish material standards based on input from earlier stages in the initiative. By moving away from the use of one-off materials, the utility has been able to get material stock built up and coded. This batch approach reduces lead time and increases the potential for getting a better price.

At the end of 2019, the initiative was estimated at 40% completion. The volume of projects has shifted

over time, waxing and waning as some get added while others get reclassified. The initiative is estimated to complete build-out and optimization by 2027.

Fiber optics is likely to be the backbone for a lot of upcoming technology. As wireless, 5G and microwave communications increase in use, all still depend on a backbone to be functional. And as companies and utilities take advantage of technology breakthroughs, they will aim to improve reliability and protection. Fiber-optic networks will be important resources and will provide an advantage for those who have implemented them effectively.

