

Case Study

PPC Pushable Fiber & the City of Loma Linda

Location: California, U.S.

Improving competitiveness by reducing fiber deployment costs by up to 76 percent.

Background

The city of Loma Linda, covering 7.5 sq miles in the San Bernadino Valley in southern California, is a community of 21,000 people. It is run by a full service municipal government, providing facilities including police and fire protection as well as water, sewer and refuse utility services.

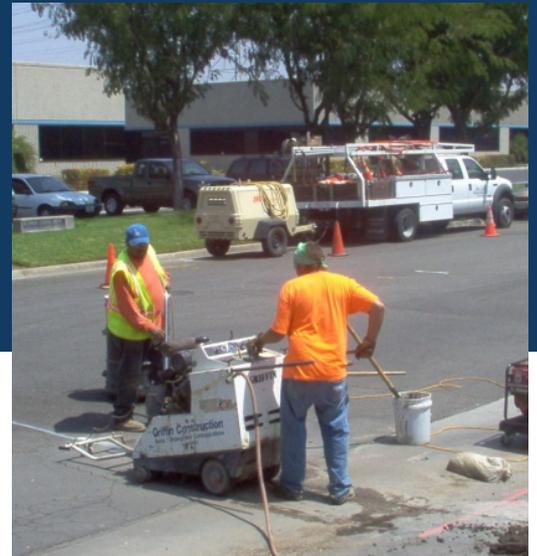
The city's economy is dominated by healthcare – it has five major hospitals and a healthcare focused graduate university with 15,000 medical, dental, and allied healthcare students. Up to 100,000 people visit the city every day to be treated and it is the regional center for veterans, trauma and children's care, covering a fifth of California.

Scenario

The city realized that it needed a faster broadband network, particularly to support its increasingly data-driven medical facilities. Failure to deliver higher capacity fiber connections potentially threatened the entire economy if healthcare institutions were forced to move operations elsewhere.

Incumbent telecoms carriers felt that upgrading beyond DSL was uneconomic, so the city embraced the challenge and built its own FTTH/FTTP network.

While rolling out the 4x144 strand backbone network was relatively straightforward, the major issue for the city was the cost of last-mile deployments. It first looked at a combination of trenching and blown fiber. However, at an average cost of \$50 a foot, this was simply too expensive to support, risking project completion. Additionally, the city wanted to minimize the disruption and cost of major road closures caused by traditional trenching techniques.



Product Used

✓ Miniflex® fiber cable

✓ TuffDuct®

OSP Installer

✓ Anthony Andrews, HHS Construction

✓ City of Loma Linda staff

✓ Ancom Communications, Inc.

✓ John Griffin Construction, Inc.

Synopsis

Cost-effectively installing last-mile connections for a new high-speed broadband network using micro trenching and PPC pushable fiber and duct, to increase business competitiveness, safeguard investment and maximize efficiency.



After evaluating the market for a solution, the city turned to PPC and adopted its patented Miniflex® pushable fiber cable and ruggedized TuffDuct® microduct, in combination with micro trenching, to bring down the cost and time of last-mile FTTP and FTTH deployments.

Rather than digging up the entire street, micro trenching reduces installation time by cutting a 1 in wide trench, installing microduct and rapidly restoring the roadway. TuffDuct's combination of strength, toughness and flexibility means that it fits into the smallest trenches, yet can tolerate tight bend radii and high crush forces, as well as coping with extreme 270 °F (130 °C) temperatures when covered with road sealant.

Once the microduct is installed, Miniflex can simply be pushed or pulled to its destination from the manhole, without the need for expensive blowing equipment or specialized skills. The majority of deployments are completed by municipal staff, with the city electrician deploying fiber to the premises. Time is further reduced by the use of pre-connectorized fiber cables and PPC distribution patches.

The combination of PPC products and micro trenching has dramatically cut costs – from \$50 to \$12-\$18 per foot, a saving of between 64 percent and 76 percent for the city.

Benefits

- ✓ Installation costs reduced by between 64-76 percent
- ✓ Faster implementations with less disruption
- ✓ Ability to use city staff for deployments
- ✓ City's healthcare industry able to digitize operations
- ✓ New network attracting businesses and residents
- ✓ Increased efficiency of city operations through network



Miniflex fiber cable with flexible, durable grooved jacket

Results

The city is seeing three major benefits:

- ✔ **Improved healthcare** – all the medical facilities within Loma Linda are now connected and can share patient records digitally and carry out remote diagnosis, and staff can even undertake out of hours scans and operations from home.

- ✔ **Increased business investment** - in a tough business climate, Loma Linda has been able to attract investment and new employers because of its network. In turn, this leads to more jobs and consequently higher tax revenues from businesses and residents.

- ✔ **Improved city efficiency/safety** - the network underpins all city activities, from fire and rescue to police, utilities and CCTV. Each traffic light has a wireless access point, accessible by city employees, enabling them to operate digitally and more efficiently.



Direct bury TuffDuct® microduct that's ultra tough and features a low friction lining for pushing and pulling

“Our fiber network is at the heart of Loma Linda's growth, attracting new businesses and increasing municipal efficiency. Without it the recession would have been catastrophic for the city. PPC has been a really strong and responsive partner, working with us to help bring down installation costs – without their pushable fiber and micro trenching our deployment would simply have been impossible economically.”

*Konrad Bolowich, Assistant City Manager/
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