
Sonoma Marin Area Rail Transit (SMART) – Sonic Public-Private



2018

Fiber Optic Deployment in
SMART Infrastructure

SMART/Sonic – Public Private Partnership

Executive Summary:

Broadband networks are recognized as essential infrastructure assets for communities, businesses, and local governments across the country. The Sonoma-Marine Area Rail Transit (SMART) and Sonic Public Private Partnership have resulted in a vast economic win for SMART, Sonoma County municipalities, businesses and schools.

The SMART/Sonic fiber optic system utilizes SMART’s conduit infrastructure providing SMART additional Fiber optic capacity while significantly reducing both construction and operational expenses. Leveraging existing conduit assets, Sonic substantially lowered SMART’s capital investment through a shared cost Public-private partnership.

The SMART non-exclusive conduit access provides Sonic a middle mile backbone. Sonic has dedicated Fiber strands to be used by SMART, as well as Counties and Municipalities through which the SMART Right-of-Way runs.

North Bay Business parks, K-12 schools, municipalities and Sonoma County residents now have access to competitive Gigabit and faster fiber optic services. Now five North Bay Business parks containing over 2,200 businesses now have access to affordable 1Gpbs to up to 100Gpbs services. And in the next two-years thousands more business locations will be connected. Additionally, due to the SMART-Sonic partnership over 70 North Bay K-12 schools will be connected with dark fiber services.

Sonic also provides middle-mile services to other telecommunications companies producing additional competitive services in rural pockets of Sonoma County.

Economic development, new competitive options, and expansion of Fiber Optic services are all direct results from the Sonoma-Marine Area Rail Transit and Sonic Partnership.

“Due to the SMART-Sonic partnership over 70 North Bay schools are expected to be connected with dark fiber services”

Utilization of SMART Sonoma-Marin Infrastructure:

SMART's rail system is the first new commuter heavy rail built since the Federal Rail Authority instituted positive train control requirements. As a result, an optical network for a fully integrated signals system was required. The fiber network also serves the Clipper fare system, and video surveillance cameras at platform, bridge and tunnel locations. Sonic provides free and separate Internet connections at each of SMART's 15 stations for services such as vendor/kiosk interconnections, SMART operations and Public access. Sonic provides SMART free WiFi at each station location.

SMART placed four 1.5" conduits for Fiber optic cable along the rail line and planned to use two for operations, with two Fiber optic cables: a 12 strand cable for signal operations in conduit #1, and a 48 strand backbone operations cable in conduit #2. By partnering with Sonic and at Sonic's expense a 432 count Fiber optic cable was placed in a single conduit with Sonic granting 60 strands to SMART plus a bonus 12 strands dedicated to the Cities and Counties the rail way passes. Sonic installed, maintains the Fiber optic infrastructure, including all splicing and repair service.



SMART 1.5" Conduit with 144 Strand Fiber Optic Cable Sample

Sonic's single cable upgrade meets SMART's backbone requirements while achieving a significant cost savings for SMART both in the initial upfront construction cost but also in ongoing operational expenses. SMART saved the cost of network deployment, while maintaining the ability to lease the remaining conduits. Sonic's partnership provided an CapEx savings of nearly \$1 million as well as an OpEx in-kind exchange, saving SMART an additional \$390,000 per year.

Sonic's partnership includes 24/7/365 days emergency restoration break/fix service for the fiber, with a maximum four hour response on-site anywhere along the line. Sonic's services splicing, directional boring, cable removal and replacement.

SMART/Sonic Partnership and Municipalities:

As part of the SMART/Sonic Public Private Partnership Sonic dedicated 12 strands of fiber to Counties and Cities along the 43 mile SMART line. Local government agencies have access to dark fiber optic cable to connect and light their own equipment. A single fiber can be divided into many optical wavelengths, and each wavelength can carry tens of Gigabits of data. The dark fiber on the SMART route can provide local government agencies with useful North/South high-capacity backbone, which can interconnect to their own existing or future fiber resources.

Sonic provides technical assistance to Cities and Counties for fiber usage and interconnection planning. The dedicated fiber strands provide municipalities with a significant reduction in their telecommunications budget spends.

SMART/Sonic Partnership and Schools:

As a direct result of the SMART/Sonic public-private partnership Sonic is connecting 70 Sonoma County schools with dark fiber. Dark fiber has virtually unlimited capacity and it provides schools long-term control. That empowers school districts as they are now buying a long-term asset and can scale their own bandwidth needs.

Dark fiber provides schools and school districts bandwidth scalability, flexibility, security and significant cost savings over the dark fiber lease term. Sonic is delivering WAN service and dedicated dark fiber to a consortiums of schools. Displacing legacy incumbent services, Sonic is providing the schools with massive capacity at the lowest total bid cost. Supported by the Schools and Libraries E-rate program.

Economic Development:

The SMART-Sonic Public/Private partnership has provided North Bay Business parks and businesses access to competitive Gigabit and faster fiber optic services. Access to low cost ultra-fast connectivity is vital to small, medium and large businesses. Businesses with access to inexpensive high-speed spur economic development and innovation.

Five North Bay Business parks containing over 2,200 business now have access with thousands more business locations that will be connected over the next two-years.

Bringing In Broadband Competition:

Utilizing the Sonic-SMART backbone, Sonic provides last mile opportunities for other telecommunications companies. A Sonic ISP partner connected 458 households in Occidental, California bringing fiber-to-the-premise symmetric Gigabit Internet speeds to an area considered under serviced.

Why Public-Private Partnerships Work:

SMART's choice to work with Sonic resulted in a vast savings to SMART, provided competitive broadband services to Sonoma County, furthered economic development and will continue to help businesses and residents along the SMART line, furthering the rail-transit-oriented development goals.