

Winkler Manitoba Case History

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Title:

Fiber Optic FTTH Build Brings Blazing Speed To the City of Winkler

By Ted Clemens

Carved into the western edge of the Red River Valley sits the City of Winkler, Manitoba. Located 62 miles (100 kilometers) southwest of Winnipeg, Canada, and about 12 miles (20 kilometers) north of the United States border at Walhalla, North Dakota, Winkler is Manitoba's sixth-largest city.



[winklertownphoto.jpg photo here]

Caption: *City of Winkler, Manitoba, Canada.*

Supporting a population of about 15,000, Winkler is experiencing the fastest growth in the province. As the economic hub of southern Manitoba, Winkler's retail trading area

serves an estimated 17,000 households. Winkler also has the distinction of being the first Habitat for Humanity project site in Canada.

But like many rural communities throughout North America, Winkler was also hampered with sluggish Internet service. The city did not have the broadband service efficiencies enjoyed by larger population centers. Because of this deficiency, Winkler was at a disadvantage when it came to attracting new business to the area.

Valley Fiber Brings Ultra High-Speed Broadband to Winkler

That was... until now. The fastest growing city in Manitoba will soon have the fastest Internet service in all of Canada. Once with average broadband speeds of only five (5) megabits per second, Winkler will now enjoy 1,000 megabits per second and higher. All of this increased broadband capability is the brainchild of Valley Fiber Limited. Valley Fiber, a locally owned and operated technology firm based out of Winkler, is bringing its next generation 'conscious' fiber optic infrastructure design to the region.



[ValleyFiberPhoto_01.jpg photo here]

Caption: *Valley Fiber Limited.*

The project involves 5,000 buildings and the rollout is expected to be completed within three years, according to journalist Bill Redekop of the Winnipeg Free Press. Valley Fiber needs about \$15 million to complete the project. And, local investors and investment partners have lined up.

As an additional incentive, the city council is also paying Valley Fiber \$500,000 to hook up every civic building and donating about 1.5 acres to build the company a headquarters and data center.

“One thousand megabits is just the beginning in Winkler,” said Hank Wall, CEO of Valley Fiber. “The cables have the capacity to carry up to 100,000 megabits to individual homes and buildings. That means Winkler will have the Internet service for today and the future,” Wall added.

Tools of the Trade for Ultra-Speed Broadband Placement

But to ensure efficient installation of the fastest broadband network speeds possible, Valley Fiber needed to employ industry-leading fiber placement technology and equipment. They chose cable conduit by Dura-Line and cable placing equipment by General Machine Products (KT), LLC (GMP).

“We were pleased to collaborate on this project,” said Kevin Delaney, Director of Engineering at GMP. “GMP provided dedicated solutions specifically engineered for this type of work. Although not unique, the use of multiple machines from our product line, all

coordinated to function together seamlessly, made this a perfect opportunity to demonstrate our capabilities,” he added.

FuturePath – The Leading Edge in Microduct Technology

The project calls for each home and business to be individually linked to the main backbone coming from the central office distribution terminal. Called FTTH (Fiber-to-the Home), construction begins with trenching and installing underground conduits called microducts. For this phase, Valley Fiber chose Dura-Line’s 12-way/12.7mm X 10mm FuturePath™ microduct.

FuturePath is the perfect choice for the project. It consists of multiple microduct pathways bound together with an oversheath for ease of placement. All the microducts have internal longitudinal ribbing and a permanent super-slick lining of Silicore™ to reduce friction during cable placement. This made the fiber optic cable installation much more efficient. And with the multiple pathways provided by FuturePath, Valley Fiber can add more fiber as the network grows.



[ValleyFiberPhoto_05.jpg photo here]

Caption: Bonding a locate wire near the top of the vault made it easy for the locating services need to identify the microduct and fiber routes. Careful coiling and routing of the fiber cables helped with organization and identification.

“This build required a new Dura-Line product to meet Valley Fiber's needs,” said Rick Dvorak, Dura-Line Senior Application Development Engineer. Twelve (12) microducts bundled together under a clear oversheath allowed for easy identification of the colored tubes; needed when breaking out to the individual locations. It also helped having personnel who were well trained in cable placing and cable blowing technology,” he added.

Active Fiber Solutions, the engineering firm for this project, designed a network using AFL Global’s Titan & Trident multi-service terminal system. This included an express conduit to every home using DuraLine’s FuturePath microduct, and AFL’s Flat Drop

Cable with multi-service tails. Wyatt Wisnefski, the owner of Active Fiber, chose AFL's round Spiderweb Ribbon Fiber Cable for the backbone.

Dan Kesselmayer, equipment trainer with Broadband Technology Group, is very well versed in the use of GMP's fiber blowers & pullers. For this project, Dan spent time field training the technicians on how to use the GMP equipment.

"GMP provides quality equipment that gets the job done without issue," Kesselmayer said. "They're very responsive when service or parts are needed. And GMP's product line, coupled with DuraLine and AFL, gives us a complete turnkey solution for these types of projects," he added.



[ValleyFiberPhoto_02.jpg photo here]

Caption: Using Dura-Line FuturePath 12-way with 12.7mm X 10mm microducts, flat drop cables were blown to each home, tagged, and connected to a fiber distribution terminal. The translucent oversheath allowed easy access to the color microducts needed. The terminals were spliced to the backbone fiber cable coming from the central office.



[ValleyFiberPhoto_03.jpg photo here]

Caption: In order to keep out rodents, steel mesh screen was laid on top of the gravel at the bottom of the vaults. Individual microduct colors helped identify pathways for drop installation. By also using micro cable as its fiber backbone, Valley Fiber can accommodate up to 432 fibers in each microduct.

World-Tested Cable Placement Equipment

To blow in the flat drop cable through the microduct, Valley Fiber used the AirStream F.O. Cable Blowing Machine from GMP. They liked the fact that the AirStream is portable, and can install both round micro cables and flat drop fiber cables.

Components for the AirStream are available for a wide range of cable diameters. The unit is designed with a double drive belt concept, to provide precise control of torque and speed while maximizing distance.



[ValleyFiberPhoto_12.jpg photo here]

Caption: The AirStream can install both round micro cables, and flat drop fiber cables.

Under the right conditions, it can install round micro cable up to 10,000 ft. (3 km), and flat drop cables up to 1,000 ft. (0.30 km).



[airstreamhires_2.tif photo here]

Caption: AirStream Fiber Optic Cable Blower.

The AirStream can blow in fiber cable from 0.09 to 0.43 inches (2.5 to 11 mm) in diameter – through 0.19 to 0.70 inches (5 to 18 mm) OD microduct. The AirStream also accommodates air pressures of 145 to 215 PSI (10 to 15 Bar). For optimal speed and distance, and when aided with a high-PSI compressor, fiber cables float through the microducts at speeds up to 260 feet/min (80m/min).

For a compressor, Valley Fiber chose one from Vanair Viper. This allows the micro cables to curve their way through the fiber routes, making fiber cable placement fast and efficient.

To pull the round micro cable, Valley Fiber chose the GMP Sidewinder Trailer-Mounted Fiber Optic Puller. The unit's generous 32-inch capstan allows it to pull both rope/muletape and the cable itself.



[SidewinderHiRes.tif photo here]

Caption: Sidewinder Trailer-Mounted Fiber Optic Puller.

The Sidewinder is engineered to exceed the requirements of fiber cable installation. The torque limiter, built into its 32-inch (813 mm) diameter capstan, provides a controlled force. It has a pulling capacity of up to 1,100 lbs. (500 kg) and a rope speed up to 200 feet/min. (60 m/min).



[ValleyFiberPhoto_09.jpg photo here]

Caption: GMP Sidewinder winch pulling fiber cable into Dura-Line standard 1-1/2" SDR 13.5.



[ValleyFiberPhoto_08.jpg photo here]

Caption: The Figure- 8 method of keeping cable untangled during a GMP Sidewinder pull. By flipping over the 'Figure-8' of cable, you can then access the cable end to continue blowing or pulling from this point forward.

Once installed, the fiber optic cable reaches the customer and the FTTH build links are finalized. With fiber connected to every individual home and business in the community, the City of Winkler will become a leader in information superhighway technology. "It will be like going from working the field with a horse and wagon — to working the field with a new John Deere tractor," Winkler Mayor Martin Harder observed.



[ValleyFiberPhoto_07B.jpg photo here]



[ValleyFiberPhoto_07A.jpg photo here]

Caption: Completed FTTH build to the home.

About Valley Fiber Limited

Valley Fiber Limited was incorporated in December of 2016 and has since formed many partnerships with industry-leading developers to create and finalize its innovative design.

This innovation is spurred on by the ever-growing need for fast and reliable telecommunications; and its almost limitless potential has been one of the core passions for the Valley Fiber development team. For more information, visit valleyfiber.ca.

About Dura-Line

Dura-Line is a leading international manufacturer and distributor of communication and energy infrastructure products and systems including conduit, Microtechnology, cable in-conduit, and accessories. Dura-Line provides the “mission critical” elements of networks and infrastructure. Dura-Line takes that responsibility very seriously. Its experienced sales team and technical support staff, its commitment to product quality and availability, and its ongoing product innovation coupled with our unmatched industry experience give Dura-Line the ability to support your specific installation needs, wherever you need us. For more information, visit duraline.com.

About Active Fiber Solutions, LLC

Active Fiber Solutions is a turnkey network design company specializing in microtechnology solutions. Headquartered in Green Bay, WI, Active Fiber Solutions has done work throughout Canada and the United States. For more information contact Wyatt@qosfiber.com, or call Tel #920-883-1649.

About General Machine Products (KT), LLC

For more than 80 years, General Machine Products (KT), LLC, a subsidiary of Klein Tools, has been recognized as a premier global supplier of a wide range of products for

the telecommunications, power utility and cable television industries, and the contractors who serve them. Product applications include the placement of fiber optic, copper conductor, and coaxial cable both aerially and underground.

GMP aerial cable lashing machines, along with its family of fiber optic cable blowers & pullers, are accepted as the industry standard. The complete line of GMP products also includes cable reels and aerial blocks, cable cutters, duct rodders, and other specially designed tools for the telecommunications and power utility markets.

Our facilities include a 100,000-square-foot manufacturing plant located in Trevoze, PA, in suburban Philadelphia. The facility has both an indoor and outdoor test track to observe the fiber blowers in use. It is equipped with a full complement of machine centers manned by a well-trained team of craftspeople. For more information, visit GMPtools.com.

About AFL

Founded in 1984, AFL is an international manufacturer providing end-to-end solutions to the energy, service provider, enterprise and industrial markets as well as several emerging markets. The company's products are in use in over 130 countries and include fiber optic cable and hardware, transmission and substation accessories, outside plant equipment, connectivity, test and inspection equipment, fusion splicers and training. AFL also offers a wide variety of services supporting data center, enterprise, wireless, and outside plant applications.

Headquartered in Spartanburg, SC, AFL has operations in the U.S., Mexico, Canada, Europe, Asia and Australia, and is a wholly-owned subsidiary of Fujikura Ltd. of Japan. For more information, visit www.AFLglobal.com.

About the Author

Ted Clemens is Director of Sales for General Machine Products (KT), LLC. Ted was originally responsible for GMP sales in the Northeastern U.S., and subsequently held the titles of Senior Sales Representative and Sales Manager. He joined GMP in 1986 after working for two years for Graybar Electric, in New York and Los Angeles. Ted holds a BS degree in Industrial Management from Purdue University. Ted can be reached by phone at (215) 357-5500 or email at info@GMPtools.com.

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