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Group working to connect rural areas with faster Internet connections

by Mai Hoang

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YAKIMA, Wash. -- The Yakima Valley's rural areas have a traffic problem.

No, it's not the two-hour commute variety common in big cities.

The traffic is of the virtual kind -- in the radio waves and copper wires that supply Internet access to homes, schools and businesses.

Aging infrastructure has limited many rural areas in the Yakima Valley to Internet speeds of 1.5 megabits per second or slower.

Those speeds may sound fast to some, considering that it wasn't that long ago when dial-up modems, which offer speeds of just 56 kilobits per second, were the norm.

But as video streaming, social networking and other Internet applications have become mainstream over the past few years, the connection speeds of many rural communities have been unable keep up.

"The resources of the Internet have grown faster than the infrastructure to support it," said Mike Vachon, chief information officer of ESD 105, which oversees 25 school districts in south-central Washington.

Vachon and others are hoping the installation of 200 miles of fiber-optic cable to several rural areas of the Yakima Valley would alleviate those slammed Internet connections.

The Northwest Open Access Network, or NoaNet, has received two federal grants of more than \$138 million to provide new infrastructure for higher speed broadband Internet for underserved communities statewide.

The grants are from the federal Broadband Technology Opportunities Program, one of two stimulus programs created to encourage increased installation and adoption of high-speed broadband nationwide.

About \$5 million of the grants would fund the project in Yakima County. Tacoma-based NoaNet partnered with several government agencies including Yakima County, ESD 105 and the Yakama Nation to identify needs in the area.

NoaNet, which is currently in the land-use process, is aiming to finish construction by late 2012, said Mike Henson, the company's chief security officer.

Once finished, newly installed cable would provide minimum speeds of a gigabyte per second, more than enough for faster and more competitively priced service to individuals, businesses and institutions in nearly every community in the Yakima Valley, he said.

Typically, the private sector -- namely Internet service providers -- would install such infrastructure. But, in general, such projects are capital-intensive and rural areas often lack the population to provide a return on that investment.

"We're hoping (new infrastructure) will stimulate people to provide new services in the area," Henson said.

Internet speed is tied to bandwidth, the amount of data that can be transferred through a given connection at a given time.

It's like a pipe. The faster the connection, the bigger the pipe and the more data that can be transferred through it.

Now imagine multiple people trying to access data through the same pipe.

That's the situation at many area rural school districts, such as the Highland School District. There, Internet speeds are currently at 6 megabits per second -- which can be easily used up by 10 computers in a lab accessing the Internet at the same time, said Vachon, of ESD 105.

Now consider that the connection is shared by hundreds of students, teachers and administrative staff in several buildings, he said.

"What they have now doesn't meet the educational needs of the school (district) and it isn't giving the students that wealth of resources the Internet can offer," he said.

The infrastructure available in a given area limits what type of Internet service the network can purchase for the local school district, said Tom Carroll, systems manager for the K-20 Education Network, a state agency that purchases telecommunications services on behalf of school districts, community colleges and universities.

In a densely populated area like Seattle, fiber infrastructure-- and the faster speeds that come with it -- is plentiful.

According to the Washington State Broadband Office, the Seattle area has widespread Internet speeds of at least 50 megabits per second, while such speeds are only in a handful of places in the Yakima Valley.

With new cable via the NoaNet project, school districts such as Highland would be able to access speeds of at least 100 megabits per second, which is common in larger school districts in more populated areas, Vachon said.

In 2005, Yakima County went online with a fiber-optic cable that went along the railroad tracks from Naches to Grandview.

With speeds of up to 2 gigabits per second, the cable line provided the backbone for faster Internet access to many municipal buildings, such as the Yakima County Courthouse.

But those same speeds were less accessible for communities farther away from the railroad tracks, said George Helton, director of Technology Services for Yakima County.

The city center of Sunnyside, for example, is about seven miles from the fiber cable. As a result, some municipal offices in Sunnyside were running on connections of 1.5 megabits per second or slower.

And at \$30,000 to \$50,000 per mile, it was not financially realistic for Yakima County to install cable to connect distant city centers, such as Sunnyside, to the established fiber backbone.

As a result, installation of cable in that seven-mile gap is a key component of the NoaNet project.

The planned upgrade to 10 gigabits per second -- also funded with the NoaNet grants -- would also provide a major speed boost.

"Most (offices in Sunnyside) will get a 10-fold increase the moment they plug in," Helton said.

Once the project is complete, new infrastructure would not only cure today's virtual traffic jams, but provide more than enough capacity for the future.

That infrastructure would also be key in future economic development.

Currently, small businesses located in more remote areas may be at a competitive disadvantage due to less-than-sufficient Internet service, said Dave McFadden, president of New Vision-Yakima County Development Association, the county's economic development arm.

"If we care about equality and an even playing field, this is a piece of infrastructure that needs to be deployed evenly to the countryside," he said.

Statewide, the growing importance of broadband to economic development officials is noted with the move of the Washington State Broadband Office to the Department of Commerce.

Once new broadband infrastructure, both from the private and public sectors, is installed, the next step is to determine how that infrastructure can be best used to improve state and local economic development, said executive director Wilford Saunders.

"That's what we need to work on -- demonstrating ways for the broadband connection to become an asset and generate revenue rather than be an expense," he said.

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Infrastructure projects

* The Broadband Technology Opportunities Program is one of two broadband efforts funded by federal stimulus money. The program includes \$4.7 billion in grants to projects to expand access and adoption of broadband service nationwide.

* The Northwest Open Access Network is administering the work locally and across the state. Two grants of \$138.7 million have been earmarked for statewide projects, including \$5 million for the Yakima Valley.

SOURCE: National Telecommunications and Information Administration, Washington State Broadband Office, Northwest Open Access Network.