

TECHNOLOGY

Internet service in western Colorado was so terrible that towns and counties built their own telecom

The new 481-mile rural Project Thor network is complete -- and run by a regional government council. It's the opposite of what a state law intended 15 years ago



Tamara Chuang 5:05 AM MDT on Apr 16, 2020

Credibility:  Original Reporting  Sources Cited

Internet outages became a distant memory this month as a good chunk of western Colorado turned on a new broadband system. But this wasn't built by a typical telecom. It took a band of local governments and partners from 14 rural communities to stitch together the 481-mile network, dubbed "Project Thor."

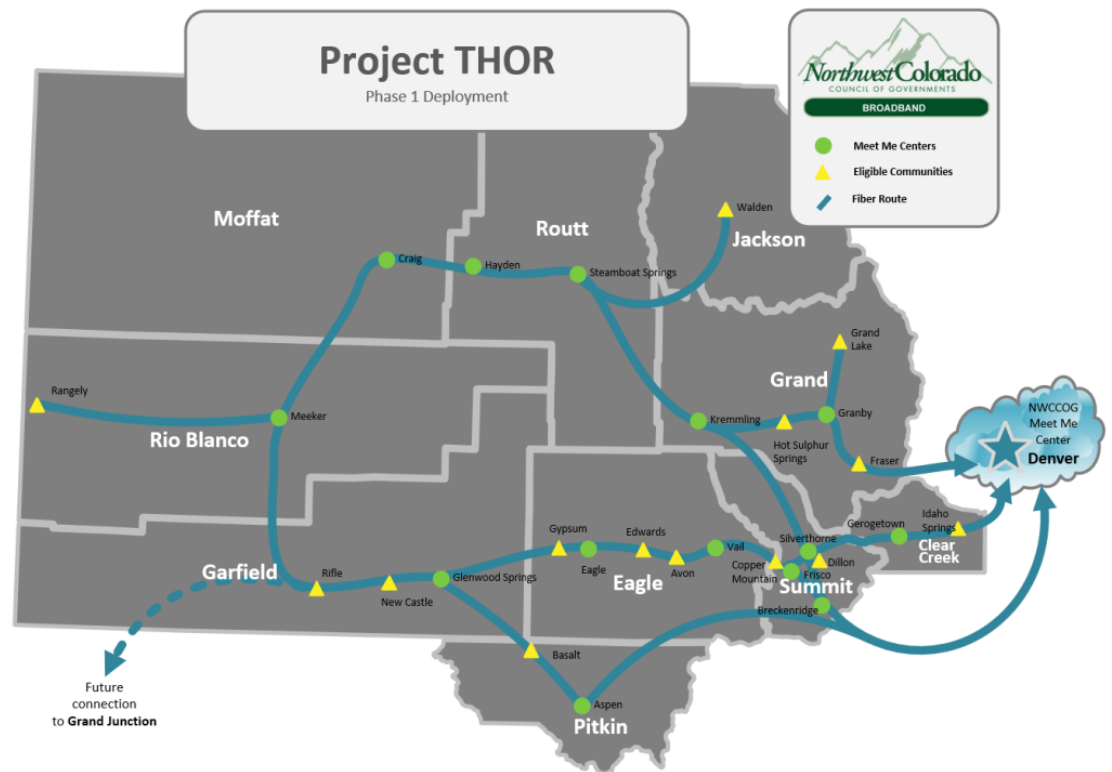
Communities from Aspen to Meeker craved better access and affordability but also demanded reliability. Over the years, multiple outages caused by accidental cuts in the internet line would shut them off from the rest of the world. At a Granby clinic, for example, medical staff couldn't quickly send images of stroke patients' brain scans down to radiologists in Denver for review during an outage, putting "the patient at significant risk of long-term damage," said Dr. Thomas Coburn, a family and emergency medicine physician and CEO of Middle Park Health.

So the Northwest Colorado Council of Governments, referred to as Northwest COG, coordinated the two-year effort of public and private organizations that couldn't wait any longer for existing broadband providers to fix their problem.

"A service outage is extremely taxing on our hospital operations and frustrations do run very high during a down time. No internet means no email, no access to the outside world, and limited access to even our own networks," said Rob C. Wissenbach, director of information technology services for Middle



Park Health clinics, which partnered with Project Thor in Kremmling and Granby. “So far, the partnership with Thor has proven to be successful.”



Map of where Project Thor has been installed. The new 481-mile internet backbone, which was completed in April 2020, was built to provide a redundant internet network in Western Colorado. The lines run through 14 communities. But there's room for expansion as new internet service providers, such as Allo Communications, are now attracted to the rural region with a “middle mile” system that won't cause an outage if a fiber line gets cut along the route. (Provided by the Northwest Colorado Council of Governments)

Project Thor is that “middle mile” of physical lines sitting between the greater internet and an internet service provider that serves consumers.

Thor doesn't serve home users, but Northwest COG partners can tap it for their own communities and share it with their school districts, local institutions and even local ISPs, which, in turn, can expand service to consumers.

It's been fully operational for a few weeks now, though facilities like Middle Park Health have been able to access part of the network since last summer. While there still could be outages, Thor has multiple redundant lines. If one line gets cut, internet traffic is rerouted to another to prevent an outage for customers.

“The other day, there was a small fiber outage that affected a few of our communities,” said Nate Walowitz, director of Northwest COG's broadband operation. “And Project Thor kept going. Nobody knew.”





Construction workers installing Project Thor fiber on Interstate 70 in Silverthorne. Project Thor is a 481-mile internet network built by the Northwest Colorado Council of Governments. The project was completed in April 2020 for about \$2.6 million. (Provided by Northwest Colorado Council of Governments)

Government-owned internet

Project Thor represents a municipal success story in what has been a contentious battle in Colorado over who controls internet service.

Back in 2005, state lawmakers passed a law preventing municipalities from becoming internet providers. But beginning in 2008 with the city of Glenwood Springs, communities began voting to opt out of [Senate Bill 152](#). Today, more than 100 communities are [exploring or offering their own broadband service](#).

Criticism came — and still comes — largely from the cable and telecom industry, which supported the bill as being the fiscally responsible thing to do with taxpayer money.

“Where you’re using government money to put in a duplicate network in a community that already has broadband, that I think is a waste of money,” said Ron Rizzuto, a finance professor at University of Denver’s Daniels College of Business and a consultant for the cable industry. “And it’s a conflict where you have the government competing with the private sector.”

He pointed to [projects in Fort Collins](#), where the city is constructing a broadband network. But Rizzuto feels differently about Thor.



“(Thor) is a good example of why you need the government to be the catalyst. The private sector is not stepping up,” he said. “The government sector can help entice the private sector to participate because the private sector won’t act on its own.”



Workers connect Glenwood Springs existing fiber-optic network to the new Project Thor backbone, a 481-mile network built by the Northwest Colorado Council of Governments to improve reliability of internet service in Western Colorado. Since Northwest COG relied largely on existing fiber in 14 communities, the project was relatively affordable and much of the \$2.6 million in funding was spent on connecting existing networks together. That often meant just a few blocks to less than a half-mile of new construction at a time. The two-year project was completed in April 2020. (Provided by Northwest Colorado Council of Governments)

Northwest COG owns the Thor network. The council is made up of local governments from Jackson, Grand, Summit, Eagle and Pitkin counties. Not all



the county governments joined the broadband project as partners, though some of their cities did. And neighboring communities — including Glenwood Springs, Georgetown and Meeker — chose to join and help finance construction of the \$2.6 million project.

The new network is available to large users who want to pay for it. So far, neither Comcast nor CenturyLink has joined.

CenturyLink is plugging away to expand faster internet to 50,000 homes and businesses in rural Colorado by 2021 with the help of federal funds. Last July, CenturyLink officials [told The Colorado Sun](#) that even with federal funds, it's been able to get to only 60% of the targeted population and cannot reach every rural Colorado consumer.

Thor, however, isn't going anywhere CenturyLink doesn't already have service, the company said in a statement. The new network "does not add any significant route diversity and, unfortunately, does not provide the last-mile facilities needed to deliver broadband to rural Colorado consumers and businesses, which are the most expensive areas to serve.

"We hope that future taxpayer-funded projects focus on meeting the needs of unserved and underserved Coloradans, rather than competing with existing facilities and networks," the Monroe, Louisiana-based telecom wrote.

Meanwhile, Comcast is expanding its cable broadband service into Eagle and Gypsum. Comcast still offers its service to communities involved in Project Thor and "we appreciate the valuable partnerships we have in those communities, and will remain open to others that could benefit customers," the company said in a written statement.

TODAY'S UNDERWRITER



Expanding broadband in rural areas has been difficult for private companies, said Chris Mitchell, director of the Community Broadband Networks at the Institute for Local Self-Reliance, which tracks municipal-owned broadband.

“Some people believe that the existing companies can be regulated to make sure everyone has access. I’ve lost faith in that approach. I don’t think you can force CenturyLink to meet rural Colorado needs,” Mitchell said. “In particular, CenturyLink’s (former) [CFO has said](#) they’re focused on urban enterprise customers and they are not trying to invest a lot in rural areas, which is a perfectly rational thing for them to do as a publicly owned company.”

That’s why Project Thor is “an impressive feat,” Mitchell said. He believes it will pay long-term dividends for those rural communities.

“Colorado already has a good system of regional collaboration that other states don’t have,” Mitchell said. “So in Colorado, I think it makes sense for local governments to play a major role in solving this problem.”

Thor’s origins

Project Thor sprang up in 2018 and was named after the Norse god of thunder (“The image of the hammer and breaking down roadblocks and breaking down barriers really worked,” Walowitz said).

But the project’s origin dates back to 2013 when the council studied internet service in the region. Back then, 76% of Colorado’s households had broadband access if you counted [connections of 200 kbps as broadband, which the Federal Communications Commission did](#). That’s one-fifth of a megabit per second. In the Front Range, speeds were about 10 mbps.

“In sum, we find northwest Colorado broadband sits at the tail end of a middling state in a middling country,” according to the [Northwest COG’s report from 2013](#). “The NWCCOG has decided that simply isn’t good enough.”

More: [As Colorado nears 100% broadband access, funds for rural support shrink](#)

Northwest COG then hired Walowitz, who helped connect the dots for municipalities to get faster broadband. It helped Jackson County attract a Wyoming broadband provider in 2017. It promoted the benefits of broadband in [Rio Blanco County, where 1 gbps service is now available in Meeker and Rangely](#), with wireless service available to “the remaining, most remote 7,000 residents.” [Red Cliff’s broadband service went live in December 2017](#).



But there remained a major problem for every town even after their residents voted to opt out of the 2005 law. In those rural communities, if a part of the fiber line inadvertently got cut, there would be no internet since there was often only one internet pipe into the region.

Hence, Project Thor would build a series of loops and provide alternate lines. The momentum grew, attracting local governments, a school district, a medical office, an electric co-op, internet service providers and even Colorado Department of Transportation, which had existing fiber along local roadways.

“Most of what we did was leverage existing fiber. That’s what made the cost of this project so low comparatively. If we had to build 400 miles of fiber, that would have been a significant investment,” Walowitz said. “... We knew that if we built it on our own, it would have been unaffordable for the region.”

The state Department of Local Affairs kicked in about \$1.3 million in grants, while participating communities matched the funds.

Thor’s final price tag? \$2.6 million.

The affordability factor

While reliability was the key goal, a more affordable service was also desired. Years before Thor became a project, Tim Miles wasn’t having any luck negotiating a lower price for internet service from the town’s main provider, CenturyLink. As technology director of the Steamboat Springs School District, he said the district paid about 10 times more for the same amount of data as school districts in more urban areas. He felt helpless.

He realized he needed some political power. So he reached out to city and county officials and together, they negotiated as a larger single customer. It worked. Prices came down for the school district. They formed Northwest Colorado Broadband, a nonprofit cooperative, that was soon joined by the local hospital, electric utility, community college and others.

But there were still reliability issues resulting in outages. So the group built its own redundant system and acquired its own internet lines. Eventually, they weaned themselves off of CenturyLink.

Thor was built on the same premise that as a group, they could negotiate lower prices. With its own network, NCB also had reached its 10-gig capacity and would have to invest heavily to expand capacity to accommodate more users. So they joined the Thor effort from the start.

“Thor is exactly what we did but just with more parties,” Miles said. “And now we share that cost and so I’m paying less now to join Thor, and I can turn the



dial to 100 gigs. And I'm paying less than I was when I was paying (NCB) for 10 gigs."

More: Rural Colorado sees more broadband options coming online. But getting up to speed is taking longer than anticipated in some areas.

For the Steamboat Springs school district, Miles said he's now paying \$500 a month less for 10 times the amount of bandwidth. And that's already a major savings from what the district once paid CenturyLink years ago.

It's a "drastic change" in how much the internet now costs for some Thor partners. "I'll say we were paying at least 10 times more per megabit than what we're currently paying" for Thor, said Wissenbach, with the Middle Park Health clinics.

Northwest COG owns the network and splits its annual \$1.1 million operating costs among its partners based on the amount of data they use. Partners host "Meet Me" centers in 14 communities that opted in for internet. For Northwest COG, it's a break-even venture where partners pay per megabyte — \$1.30 per MB for private-sector partners and \$1.02 for public sector partners. That's about half what other middle-mile providers charge, Walowitz said.

"Everyone pays, whether at a large or small Meet Me center, they still pay the same cost per megabyte because we aim to be fair and equitable," he said. "Project THOR is structured to be an enterprise that covers its costs. It is not a profit center for Northwest COG."



Near the Interstate 70 bridge in Eagle, workers connect Project Thor to internet fiber already installed by the Colorado Department of Transportation. Project Thor is a 481-mile internet network built by the Northwest Colorado Council of Governments to improve internet service in Western Colorado. The two-year project was completed in April 2020. (Provided by Northwest Colorado Council of Governments)

Hope for home users

Project Thor, however, isn't an internet service sold directly to home users. But because Thor now offers a reliable backbone, local internet service providers can tap into it and expand service into new communities or upgrade speeds for existing ones.

That's the case for Visionary Broadband, a subsidiary of Mammoth Networks, that launched wireless broadband service in Kremmling in August. Luminate Broadband, part of Yampa Valley Electric Association, is expanding in Routt County. Both parent companies are partners in Thor.

But for residents eager for faster internet, the point of Project Thor is that it's already helping attract more ISPs to the region. One is Allo Communications, which is rolling out service in the Town of Breckenridge. The Nebraska company agreed to expand in the town because Thor provided that needed redundancy.





Allo Communications is the new broadband provider in the Town of Breckenridge. The town is paying for the installation to residents' homes, while Allo is selling the service and recently opened a store at 105 Jefferson Ave. (Provided by Allo Communications)

“Even if it was for a maintenance period at night, it’s not responsible (to cause an outage) when you’re providing services to first responders or critical businesses or those types of things,” said Brad Moline, Allo’s president and founder. “It’s just not how we do business.”

Summit County and Breckenridge are handling the installation to residents' homes, with the town expected to spend more than \$20 million to finance the project. Allo manages the customer side of the service. According to Allo, its prices start at \$60 for a 500-mbps connection. Allo relies on two sources for




internet: Thor and the town's existing provider CenturyLink. Without two sources, Breckenridge users would be in a bind if there was a fiber cut.

"The biggest problem that the mountain communities have is with resiliency and redundancy and telecommunications services, especially internet services," said Andy Atencio, the IT director for Summit County, a Thor partner. "So one of the things that we're getting out of Thor is the ability to really provide redundant and resilient service to customers that are able to get connected to it."


Ultimately, Thor exists to equip rural governments with tools to help their community access services and other benefits that are disappearing if you're not online, such as telemedicine, banking and even news. Walowitz said that's Northwest COG's goal: helping its local governments.

"There are increased numbers of our population that are getting either improved broadband or just getting broadband. And I believe that will continue to expand," Walowitz said. "The reality is that local governments are not in the business of marketing other than, 'Hey come to our town, it's really cool.' ... They're not in the telecom business. We're helping bring them to an understanding on how they can help enable more providers to come into town and improve broadband in their communities."






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