

Ontario Is Investing For the 21st Century Featured Article

Ontario, California, a fast-growing city in the Inland Empire, leverages its growth with an ambitious fiber-to-the-home network.

*By Masha Zager / Broadband Communities
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A generation ago, Ontario, California, was a sleepy farm town surrounded by acres of fruit trees. Today, it's an up-and-coming city of 174,000, poised to double in size in the next 25 years, and an economic engine of California's Inland Empire.

The city has many advantages: location, infrastructure and a history of planning for growth, along with a skilled workforce, low labor and real estate costs and a positive business climate. It also has a city-owned fiber optic network that amplifies all its other advantages.

Ontario is 35 miles east of downtown Los Angeles, within commuting distance for people priced out of Los Angeles and Orange counties – or just seeking a less-stressful living environment. It isn't merely an exurb but also a transportation hub easily accessible by interstate highway, railroad and air.

That Ontario is well served by transportation isn't an accident but rather a result of the city's history as one of the first planned communities. In the 1880s, two brothers, George and William Chaffey, built Ontario close to the Southern Pacific Railroad, constructing advanced-technology tunnels to bring water into their "model colony" in the desert and selling water rights in conjunction with plots of land. The brothers also started a power company and an agricultural college.

Their successors built a streetcar system, an airport and other infrastructure that helped the town develop, and eventually the orchards gave way to factories and residential developments. When the airport lost business after becoming part of Los Angeles World Airports, the city of Ontario and county of San Bernardino formed the Ontario International Airport Authority and took ownership of the airport in November 2016. Since that time, the airport has experienced rapid growth in passenger volume and cargo volume and continues to expand flight options, including daily direct flights to Taiwan on China Airlines and New York City via JetBlue. Amazon Prime flies out of Ontario, and UPS and Fedex have facilities there.

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The New Model Colony

Forward-thinking city leaders realized that continued economic growth would require more room, so they annexed 13 square miles of land in 1999 for a “new model colony” – now called Ontario Ranch – that could allow the city’s population to double. The city adopted master plans for the area in 2002, envisioning a 30-year transition from agricultural uses to single-family, multifamily, commercial and business park/light industrial development.



Ontario installed a “proof of concept” FTTH network in the Park Place community of Ontario Ranch.

In place of suburban sprawl, the master plan calls for distinct neighborhoods connected by greenways, trails, open spaces, amenities and infrastructure. Walkability, livability and quality of life were prime goals. About 47,000 residential units are expected to be built eventually; about 2,000 of these will be built and occupied by the end of 2018.

The Ontario Ranch Master Plan required developers to install conduit for fiber as part of their site preparation, and a great deal of conduit was built from 2003 to 2007, until the recession put a stop to development activity of all kinds. Having this conduit available proved critical later.

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In 2012, as development began to heat up again, the city restarted discussions about connectivity in Ontario Ranch. Elliott Ellsworth, Ontario's IT director, explains that the city needed to connect City Hall to Ontario Ranch and designed a backbone ring for that purpose. He adds, "As we were looking at it, we saw that it could connect other city facilities and traffic cabinets, and that there were also underserved areas, especially on the commercial side, where we could make a difference." The idea of a citywide fiber optic network was born.

From that point on, things moved quickly. In 2013, the city approved a fiber optic master plan, and in 2014, it created a broadband division. By 2015, OntarioNet was officially inaugurated, and the city contracted with The Broadband Group to assess, design, and financially model the operational structure and technical requirements for the initiative.

Funding the Network

To date, the OntarioNet initiative has focused on Ontario Ranch, city facilities and commercial areas largely because these parts of the network could be funded – Ontario Ranch through developer impact fees, city facilities as part of normal city operations, and commercial areas by business customers, including multifamily properties. As of today, because no funding is available for existing residential neighborhoods, there is still no official plan for OntarioNet to cover the entire city – but as Ellsworth says, "We're a visionary group of people, so it's certainly on our minds."

Persuading the developers of Ontario Ranch to pay for the buildout of OntarioNet through developer impact fees wasn't easy. The developers expected to pay impact fees, which are standard throughout the United States. Such fees, which support the capital costs of the city infrastructure that makes their developments viable, typically cover water, sewer, public safety and other services that all cities provide.

But developers didn't expect to pay for an FTTH network, and they balked. For one thing, they didn't think the network was necessary – Verizon (and later Frontier, which purchased Verizon assets in California) was building out its Fios network into the new developments, and Time Warner Cable (later acquired by Charter) was building cable.

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For another thing, some developers were skeptical that the city could successfully build and manage an FTTH network. As Dave Bartlett, vice president for land at Brookfield Residential, one of Ontario Ranch’s major developers, explains, “Usually private investors do this.”

City officials disagreed. They believed Ontario Ranch residents would want a city-owned network as a third option and that such an option would spur the two other providers to deliver first-class service. They also believed the city had the capacity to build and oversee the network.

Proof of Concept

As a proof of concept, the city put up the money to build fiber to the home in new neighborhoods of Ontario Ranch and connected the network to the internet. The project benefited greatly from the developers’ having put conduit in the ground during site preparation. The availability of conduit reduced the costs of building FTTH by more than 60 percent.



OntarioNet fiber is blown into existing conduit.

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Despite the developers' fears, the city not only proved capable of building a network but also developed customized software for its operations support system and built an in-house inventory for conduit and fiber cables, saving between 20 and 40 percent on materials and eliminating delays in construction.

Inyo Networks, the provider contracted to operate the network and deliver services, connected its first customer in December 2015. It charged (and still charges) \$59.95 for symmetrical gigabit service with no contract – a better value than other providers offered. As a result, the other providers improved their offerings to compete with OntarioNet.

The city hoped the proof-of-concept network would show builders what the impact fees were all about, and that they would showcase the service, says Jimmy Chang, Ontario's broadband operations director.

By the time the first proof-of-concept network was lit, residents in the neighborhood were already locked into two-year contracts with other providers. "We were 500 units behind the curve," Chang says. But when new homes opened in these areas, between 60 and 70 percent of homeowners chose the city network, and today more than 450 residential customers are online. Businesses, too, are showing interest in OntarioNet – there are now 32 business customers. In addition, an 800-unit, luxury multifamily community being built in a new mixed-use development near the airport will soon be connected. City facilities, including more than 50 traffic cabinets, are also receiving gigabit service.

The fact that OntarioNet worked and that Ontario Ranch homeowners would subscribe to it convinced the developers that the network was a plus for them – though they still weren't thrilled when the city reinstated the developer impact fee for it in 2017. These fees will eventually repay the city for the proof-of-concept builds and will pay for building out new neighborhoods currently under construction.

Bartlett says broadband isn't the prime consideration for home buyers, who are more interested in finding the right house in the right place with the right sense of community. Schools and recreational facilities are high on their lists, too. But once new residents realize they live in one of the few FTTH communities in Southern California and can

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load movies in 10 seconds, they are “intrigued and delighted.” Bartlett adds, “It’s one thing that contributes to what makes the community unique.”

Brookfield uses the fiber network to offer smart-home amenities such as automated lights and blinds, which appeal to tech-savvy millennials. However, what the company likes best about the network is that it is guaranteed to keep pace with the community’s future needs. “You’ve got to give the city credit,” Bartlett says. “They had a vision, and they stuck to it.”

The Lewis Group, the city’s lead developer for Ontario Ranch, also cites OntarioNet as an example of the kind of technology that home buyers seek. In an interview with the Los Angeles Times, Randall Lewis, the principal of the Lewis Group, said, “We are hearing more and more from customers that they want to live somewhere with all the high-tech capabilities.”

Partnership with Inyo

The city of Ontario was always more interested in providing choices to residents than in being a service provider, so it designed OntarioNet to accommodate multiple service providers. However, because Ontario Ranch initially had few residents and was being built gradually, starting the network with a single provider made more sense. Through an RFQ process, the city selected a competitive local exchange carrier, Inyo Networks, to operate the network. It gave Inyo an exclusive right to sell services for five years and retain a share of customer revenue.

Inyo Networks was a spinoff from Praxis Associates Inc., a design/engineering firm that engineered and built FTTH networks for AT&T from 2004 to 2010. Inyo focused first on building and operating middle-mile networks, including Digital 395, a BTOP-funded project in Nevada and California, and then became interested in last-mile projects that could take advantage of backhaul from Digital 395. Inyo served businesses, cell towers, schools and other large customers in the area. OntarioNet was its first residential FTTH project, though it now provides services in several other towns.

Nick Keeler, president and chief operating officer of Inyo, says the company tried to simplify its residential product line by offering only a single tier of internet service:

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symmetrical gigabit, with no contract required. (It also offers voice and video services.) He explains, “It’s simpler to administer, and customers love the idea. There’s one product, one dollar amount, not multiple service plans.” The same plan is now in effect in the other FTTH communities Inyo serves.

Keeler says customers are happy with the OntarioNet service, and churn is very low. He sees OntarioNet as more of a draw for home buyers than Bartlett does, saying, “People tell us they moved to the area because they could get decent internet service.”

Inyo is prepared for the advent of competition on the network in 2020, though Keeler hasn’t heard of much interest from potential competitors. Adding providers, should any want to join the network, will be fairly simple. A new provider could use the existing drops to the houses, and the change would be made at the software level. Traffic on the network would be segregated through virtual LANs.

Inyo has a “great partnership” with the city, Keeler says. Asked what advice he can give other potential private partners for city-owned broadband, he says the biggest challenge is that cities “don’t move as fast as private entities because they have rules and regulations to protect public money. ... Keep that in mind, and you won’t get frustrated.”

OntarioNet is a valuable asset for the city, Keeler adds. “It made a big change in the market and forced the local competitors to step up their game. Hopefully that means better and faster services for everybody. That’s good for the community.”

Economic Development

Ontario’s economic development agency doesn’t miss a chance to tout OntarioNet to businesses seeking to move to the area. It markets the network online, in social media, in print publications, through special events, door to door and by word of mouth.

The effort seems to be working. Bradley Gates, business operations director of the economic development agency, calls the network “one more reason why a business should call Ontario home,” in addition to the city’s many other advantages.

Gates says, “The need for access to fast, reliable and quality internet connectivity has never been greater. OntarioNet offers gigabit per second internet speeds at an affordable

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price for business. This service gives Ontario companies an edge when speed matters. OntarioNet is still in its infancy, with additional business customers subscribing each month, but initial feedback is extremely positive. ... Anecdotally, both new and existing businesses are telling us how important this service is, and that they appreciate the investments being made by the city council to bring OntarioNet to the community.”

The city’s ability to bring fiber services to its own facilities also enables projects that boost economic development. For example, in August, the Ontario library opened the Lightspeed Makerspace, where residents can create 3D objects and digital art and use virtual reality. The opening-night celebration featured a 3D printer and laser cutter creating a blue T-Rex. The makerspace, open free of charge to anyone with a library card, is intended to develop innovative thinkers in the community.

On a larger scale, the city connected its convention center and 10,000-seat arena, two of its primary assets, almost as soon as OntarioNet was lit. These facilities, each of which has about 1 million visitors per year, had struggled with inadequate broadband service. Now, they have a total of 2 Gbps dedicated bandwidth (soon to be increased to 4 Gbps) for a much lower cost than they paid previously.

Michael Krouse, president and CEO of the Greater Ontario Convention & Visitors Bureau (GOCVB), which operates the convention center and arena, says guest usage is now separated from the GOCVB’s business operations, which enables high quality of service for both groups. The servers that operate functions such as parking and food service are now all cloud-based, which means the GOCVB no longer has to store and maintain large equipment in protected, air-conditioned rooms. Cloud-based servers are more economical, reliable and accessible than on-premises servers, Krouse says.

When the OntarioNet connection was installed, the GOCVB upgraded its Wi-Fi service so guests reliably receive 100 Mbps speeds. “If they’re in the arena, they want to film the event,” Krouse explains. “Now they can stay connected while they stream video.” When signing up for Wi-Fi, guests can opt to receive discount coupons for food-service items in the arena or communications about additional events in the arena. The GOCVB now has a marketing database of half a million email addresses.

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Krouse says the improved connectivity at the convention center and arena keeps the city in the running for booking many large events. “It’s a minimum expectation now,” he says. “We’re keeping up with the changing technology demands of existing and new customers.” And the booming attendance at the convention center means more business for the city’s 60 hotels, which are seeing higher occupancy and higher room rates.

What does OntarioNet mean for the city of Ontario? Nate Rosenberg, vice president of business strategy for The Broadband Group, sums it up this way: “The city of Ontario is leading California by investing in fiber, the infrastructure of the 21st-century economy. It is a testament to the city’s vision and leadership that others are now following in its path.” ❖

About the Author

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