

CASE STUDIES

We're proud of our success stories, not just for our clients and partners, but for the communities they serve.



1100+

route miles

"When you're designing at scale, autodesign is necessary. Biarri Networks paid attention to all the things, all the little nuances.."

-- Patrick Thibeault, CTO
The Broadband Group

115k

addresses

7 design
areas

The **BROADBAND GROUP**

FOCUS: A trusted advisor, end-to-end.

OVERVIEW

A utility provider wanted to branch out beyond its existing services with a fiber network that would reach every house in Springfield, Missouri. They needed to encourage economic growth, from drawing in new businesses to keeping local college students in town after graduation. After securing funding, they engaged the Broadband Group (TBG) to manage the project, and Biarri Networks was tasked with managing the design and field validation. Design speed, high quality, and consistency were essential to be able to deliver the project quickly and minimize risk, and Biarri was ready to deliver.

RESULTS

- Design delivered under budget and ahead of schedule. This enabled TBG to reallocate funding to other parts of the project.
- Because of the incredible success of the project, Biarri has been awarded additional markets and projects
- True collaboration that has resulted in ongoing efforts and a number of opportunities TBG and Biarri are pursuing in partnership

BIARRI NETWORKS' APPROACH

We knew quality was of the utmost importance, so our attention to detail was super sharp. We gathered data from a variety of sources, from the utility itself to on-site field validation, and in collaboration with the customer, created new schemas and approaches to fit the unique situation. The teams worked hand-in-hand to develop workflows and share information and ideas in an effort to create designs that were constructible with minimal changes. When challenges arose, everyone teamed up to find the best way forward through a completely collaborative process.

CASE STUDY

CRAIGHEAD ELECTRIC

FOCUS: Game-changing cost savings

OVERVIEW

With 27,000 subscribers, Craighead Electric Co-op Corporation (CECC) wanted try its hand at providing fiber optic broadband service to its members across seven counties in rural northeastern Arkansas. CECC partnered with electrical distributor Irby, who sought the best approach to deploying the fiber network rapidly and efficiently, with quick customer activation. Irby and CECC called in Biarri Networks and set a challenging goal: generating a converged network design so that network construction could begin in six months.

RESULTS

- High-level designs delivered within 3 months of project kickoff
- Simpler, more accurate management of network construction priorities
- Flexibility to determine where fixed-line or wireless would be most beneficial
- Construction milestones will be completed 2-3 years earlier than expected

BIARRI NETWORKS' APPROACH

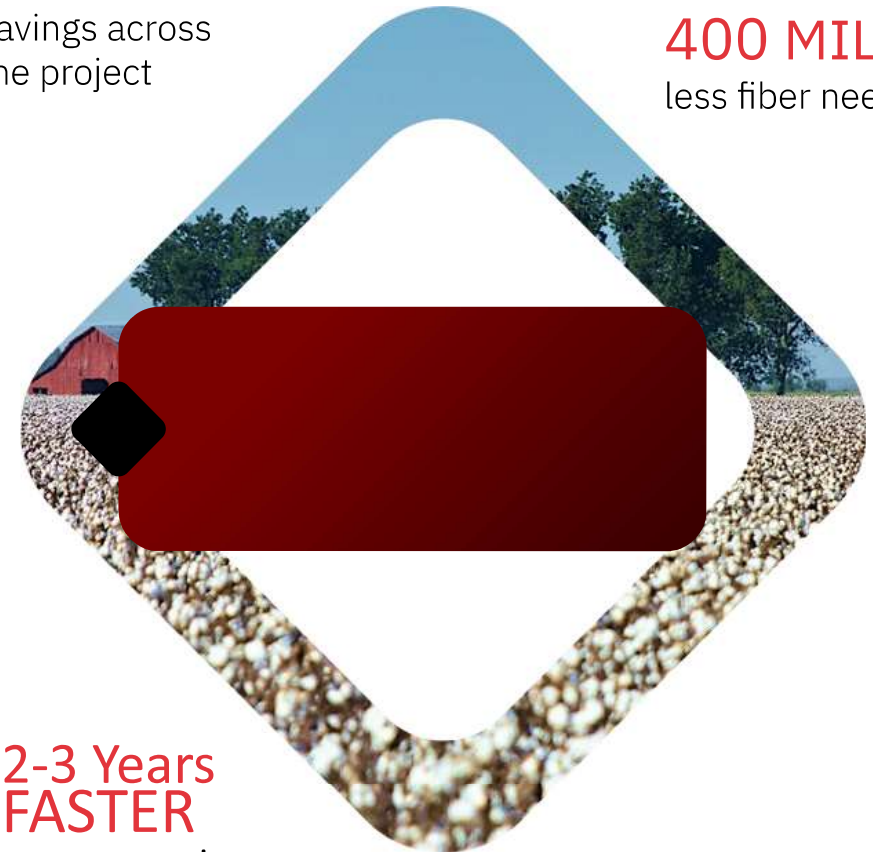
Biarri's method generated a design for the entire fiber network before the project even began! This enabled Irby to obtain accurate costs for the entire deployment of the network. It also gave CECC the confidence that they would have a network ready for operations as early as possible. The Biarri Networks approach resulted in massive savings of cost and time over Irby and CECC's initial estimates.

\$5.5M

savings across the project

400 MILES

less fiber needed

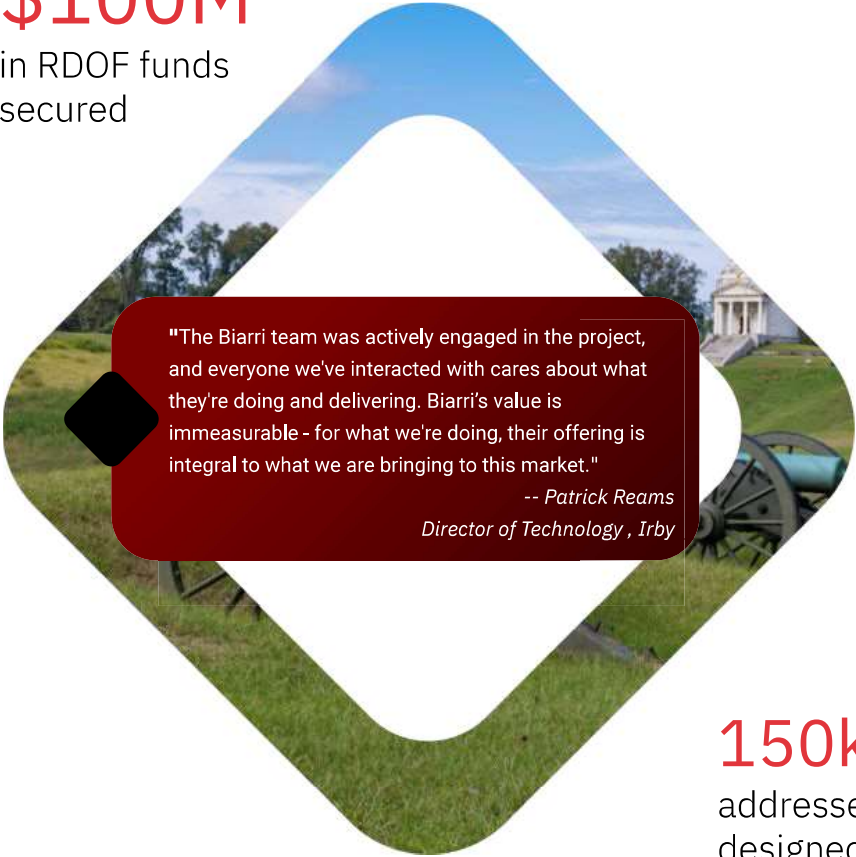


**2-3 Years
FASTER**

to construction milestones

\$100M

in RDOF funds secured



"The Biarri team was actively engaged in the project, and everyone we've interacted with cares about what they're doing and delivering. Biarri's value is immeasurable - for what we're doing, their offering is integral to what we are bringing to this market."

-- Patrick Reams
Director of Technology, Irby

150k+
addresses
designed in
under four weeks

IRBY UTILITIES

FOCUS: Addressing the Digital Divide

OVERVIEW

In Spring of 2020, Irby signed on three new co-ops with a total address count of over 150k across Arkansas and Mississippi. When they came to Biarri to assist with the effort, they were in a time crunch with fewer than six weeks until accurately costed designs were due to apply for Rural Digital Opportunity Funds (RDOF).

BIARRI NETWORKS' APPROACH

Typically, this kind of work would require 3-4 months, not weeks! We started by analyzing some previously completed co-op projects to understand the best ways to gain cost-per-home (CPH) efficiencies while using the most streamlined design process possible. We used those test cases and compared the total cost and CPH using three different approaches.

- A feasibility design using the co-op's existing datasets, with minimal cleaning.
- A hybrid design process using cleaned input data from a previously completed High Level Design (HLD) to run a feasibility-level solve

RESULTS

- The June HLD sprint was a resounding success, with fast-tracked High-Level and Field-Level Designs generated and submitted for all three new co-ops before the RDOF submission date.
- Our HLD approach captured 80-95% of the reduction in CPH that Biarri Networks typically sees between our FLDs and HLDs, in addition to significantly reducing the time taken to produce an accurately costed network design.
- **25K+ additional homes** serviced above and beyond the original plan due to cost savings and visibility in planning through utilizing the Biarri approach.

CASE STUDY

TING/LAT LONG INFRASTRUCTURE

FOCUS: Record-setting speed to construction

OVERVIEW

Ting, a mobile company with a fast-growing fiber internet business, contracted with Lat Long Infrastructure to build out fiber connections for Culver City, an LA Metro area city of almost 40,000 residents. It's a densely populated area, with an existing fiber ring owned by the city that should have been easy to work with... but clear access points and details were unavailable. And timing was going to be tight - the goal was to have the network built by spring, and the project was getting underway just before Thanksgiving.

RESULTS

- From start to finish, Biarri Networks delivered construction ready designs for the entire city in under two months
- The micro trenching technique saves time and money, enabling them to sign up new subscribers faster
- Service scheduled to begin in April

BIARRI NETWORKS' APPROACH

Biarri created a microtrenching strategy to work around the lack of information on the initial construction plan. Within a week of beginning the work, Biarri Networks delivered a high-level design for all 22k demand points, matched to the city's trash schedule zones. In the first week of December, the team headed to the site with partners for field validation in the first work zone with construction-ready low level designs completed the week before Christmas. By a couple of weeks into the new year, all five low level designs were complete and delivered.

164 Days

from project start
to scheduled
homes lit

8 Weeks

from contract
to digging



42k homes

in Arizona new development areas

"I would definitely recommend working with Biarri to any company looking to enhance their fiber deployment method or get started in this business."

-- Ami Rodriguez,
VP Sales, Marketing, and Business Development, TWN Communications

45k FTTX feasibility designs under two weeks

18k homes connecting rural Indiana

TransWorld Network COMMUNICATIONS

FOCUS: Partnership goes the distance

OVERVIEW

TransWorld Network Communications (TWN) is a telecommunications provider based in Tampa, FL, focused on constructing and managing networks in underserved communities throughout the country.

As they looked to expand their business into fiber broadband, their initial concern was speed-to-market. But as this was a whole new business for them, they needed a partner with deep knowledge and agility to make recommendations and help navigate two very different landscapes in Indiana and Arizona.

RESULTS

- Delivered the capability to modify architecture to suit local government requirements and regenerate designs rapidly without jeopardizing construction schedule
- Drove collaboration between TWN and other stakeholders to collect field data efficiently to incorporate into design

BIARRI NETWORKS' APPROACH

TWN approached Biarri Networks just looking for an auto design demo, but ended up working together for full end-to-end services, from feasibility to build-ready construction pack delivery.

We were able to adjust designs on the fly based on evolving information and update orders within FIVE MINUTES in some cases to get them what they needed.

CHORUS

FOCUS: Complete services for a whole country

OVERVIEW

The leading telecommunications provider in New Zealand, Chorus began the work connecting 75% of the country in its national ultra fast broadband initiative (UFB) in 2010. Chorus constructed about 70% of the network — just over 1 million premises in its portion of the project.

In 2013, the network architecture needs had shifted from centralized splitters in above-ground cabinets to a distributed splitter network with buried joints. The project was at risk of not meeting budget and timeline targets. With 575,000 homes and businesses left to connect, Chorus needed to rethink and restructure the remaining network plans. Intrigued by the cost-saving possibilities of machine-assisted design, Chorus partnered with Biarri Networks to create a more cost-effective design for the remaining network.

RESULTS

- Revised fiber network designs for 2014 and beyond were created, revised, validated, completed and deployed ahead of schedule.
- In 2016, designs for a town of 10,000 were created and approved for construction within five months, meeting timeline and budget expectations.

BIARRI NETWORKS' APPROACH

The Biarri Networks and Chorus teams collaborated on identifying priorities and constraints, and accurate designs were especially important to avoid penalties.

We identified necessary data to ensure accuracy and consistent design output. Much of the initial address data was out of date, so the teams collaborated on new workflows to improve and validate that data. These new data-cleaning, quality assurance and validation processes were applied to across the board

After defining all crucial data for network design and construction, the Biarri Networks team used its autodesign capabilities to generate and iterate revised network designs for the Chorus team.

565k
premises designed

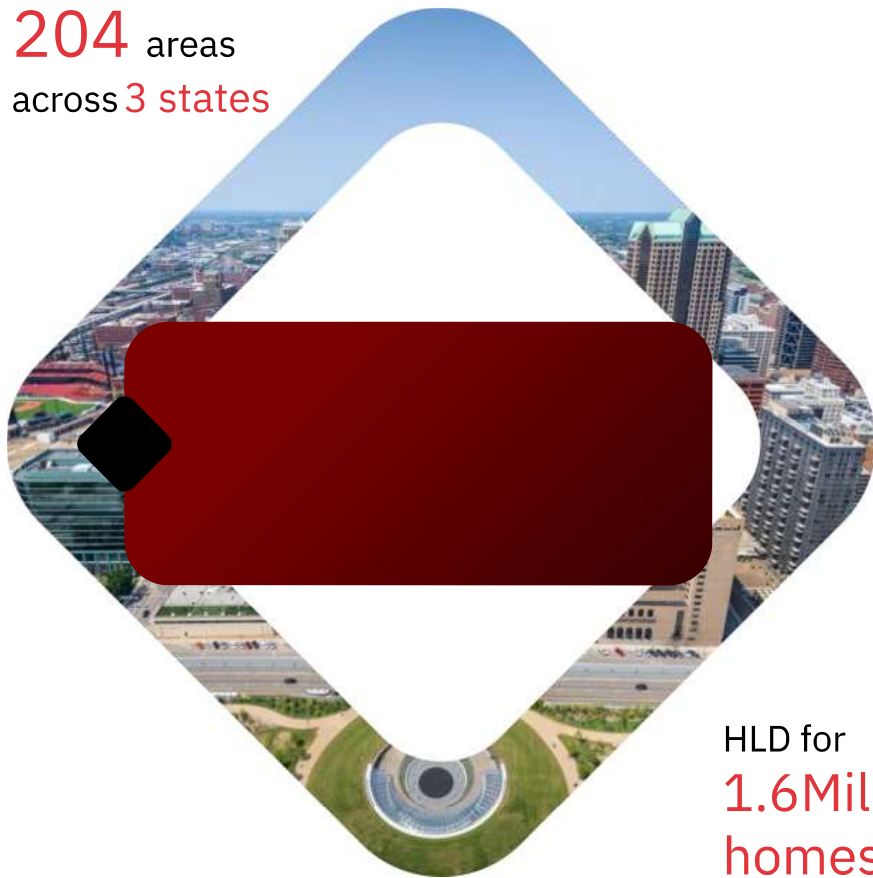


"An automated, data-driven approach to FTTH Network Planning and design just makes sense. When we look back on the last couple of years now, it's hard to see how we ever worked without this approach."

--Daryl May
Head of Planning and Design, Chorus, NZ

75%
Average effort
reduction through
autodesign approach

204 areas
across 3 states



HLD for
1.6 Million
homes delivered
in ONE MONTH

Tier One CHALLENGER

FOCUS: One month, 1.6 Million Homes Passed

OVERVIEW

A tier one telco began an exploratory mission to expand rapidly in six existing markets. The goal was to serve 1.5 Million homes in areas that had not yet been built out. The project required high level designs quickly, and with a multiple layers and levels of detail that would enable them to adjust boundaries for anticipated take rates. After reviewing Biarri's proposal, an agreement was inked at the beginning of March 2021 – one month before the designs were due.

BIARRI NETWORKS' APPROACH

With designs to include 1.5 Million homes in a month, it was all hands on deck. Acutely coordinated teams in the US and Australia enabled literal round-the-clock work that was broken into teams – data prep, designs, boundary generation, and packaging for submission. The largest market included 330k addresses broken into approximately 80 areas. Each area was designed individually before being merged into one complete design for the market to be to enable viewing in multiple configurations.

To add staff who could help deliver in the short time frame, Biarri worked with Australian Spatial Analytics, a company that employs individuals with autism to work on engineering projects

RESULTS

- Delivered multi-layered high-level designs across six markets
- Total homes passed in one month, 1,643,000

CASE STUDY

T-MOBILE

FOCUS: Small market solutions to create big change

OVERVIEW

Communications giant T-Mobile wanted to partner with municipalities and electric co-ops nationwide to expand and build more robust networks for local communities. They believed in empowering local communities, not only to facilitate better connectivity, but with local job opportunities as well. Deals were inked across the country in the northwest, southeast, and midwest. But they needed a partner to help them know where to start and how to maximize their resources to serve more communities using both fixed fiber and wireless.

RESULTS

- Complete feasibility of converged network design based on cost to serve.
 - Wireless vs. Fiber
- 540k+ premises feasibility study completed in less than 4 months across multiple markets and states
- Roadmap created for future projects

BIARRI NETWORKS' APPROACH

Biarri Networks was brought in to build a converged network design process from the ground up – where to start, the steps, and the assets they needed, including internal staffing. Once feasibility and design began, we focused on keeping the cost-per-home as low as possible for efficient use of resources, both financial and environmental. Optimized network designs lowered both cost and impact on local environments.

Ultimately, the relationship became a true partnership, with Biarri team members becoming a true extension of both the T-Mobile and local partner teams.

540k
HHP to date

"You would be CRAZY if you didn't work with Biarri!"

-- Gerry Lawlor
VP Fixed Broadband
T-Mobile

2.8k
cell sites
to date