

CITY OF WATERLOO



Fiber-Optic OSP Design, Engineering and Permitting

Waterloo Communications Utility FTTH

Prepared for:
City of Waterloo, Iowa

Prepared by:
Courtney Violette
Magellan Advisors
cviolette@magellan-advisors.com
386-931-3520
www.magellan-advisors.com



ABOUT MAGELLAN ADVISORS

Magellan Advisors is the leading turnkey engineering firm specializing in broadband deployment for municipalities, utilities and cooperatives. We specialize in building fiber to the home networks for local governments across the US. With over 16 years in business and over 400 municipal clients, Magellan provides turnkey broadband deployment services to build networks that enhance communities and make them competitive in the digital economy. Our combination of unmatched broadband, telecom, business and operational experience creates actionable strategies that communities use to realize their broadband objectives. We have led the planning, funding, construction, and management of over 50 fiber-to-the-premise networks passing over 1 million homes and connecting more than 1,000 schools, hospitals, government offices and community organizations. Our work has resulted in over \$1 billion in new broadband investments nationwide. Magellan has helped more communities successfully plan, implement and manage gigabit broadband networks than any other firm in the market.



We maintain experts across all aspects of developing networks, from feasibility studies, financial planning and grant development, to engineering design, project and construction management, to operations and management of live broadband networks. Our staff is composed of broadband, telecom, government and utility professionals that have been on the front lines of deploying fiber and wireless services for over a decade.

Our turnkey services allow our clients to maintain a single partner that fulfills every aspect of planning and deploying next generation infrastructure, with seasoned experts guiding their deployments every step of the way. Our success is based on our clients' success and we have managed the deployment of over 50 communications and broadband networks across the US. In every case, these networks are performing to plan, meeting financial goals and achieving community needs.

OUR TURNKEY MUNICIPAL BROADBAND SOLUTIONS



Broadband Planning

Fiber master plans, business plans and implementation roadmaps that give you real-world guidance and results you can count on when deploying fiber and broadband.

[Learn more →](#)



Feasibility Studies

Honest, unbiased and independent advice from the firm that has more experience implementing fiber and broadband networks.

[Learn more →](#)



Grants & Funding

Funding strategy, grant writing and compliance for all major federal and state fiber and broadband grant programs.

[Learn more →](#)



Design Engineering

Cutting edge fiber and broadband engineering to connect more sites, more devices and more customers at the speed of light.

[Learn more →](#)



Turnkey Implementation

A single, trusted partner to manage your entire network implementation, with over 50 fiber and broadband deployed networks across the US.

[Learn more →](#)



Construction Management

We manage the entire construction process to ensure your fiber and broadband networks are built to specification and your construction standards are followed, while minimizing impact to the community.

[Learn more →](#)



Network Management

We take the heavy lift out of managing fiber and broadband networks by providing centralized resources to provide monitoring, tech support and emergency repairs.

[Learn more →](#)



Retail ISP Services

LightSpeed, powered by Magellan Advisors serves your community with fast, reliable and affordable internet services, built on a culture of delivering superior service.

[Learn more →](#)

KEY MUNICIPAL CLIENTS



			FEASIBILITY STUDY	FIBER MASTER PLAN	BROADBAND BUSINESS PLAN	GRANT DEVELOPMENT	BROADBAND POLICY	ENGINEERING DESIGN	PERMITTING	PROCUREMENT	CONSTRUCTION MANAGEMENT	INSPECTIONS & CLOSE-OUT	STARTUP & LAUNCH	OPERATIONS & MANAGEMENT	SALES & MARKETING	BROADBAND EXPANSION
City of Hillsboro	OR	City	•			•		•	•	•	•		•		•	
City of Lehi	UT	City	•			•		•								
City of Boulder	CO	City	•	•				•	•	•	•		•			
Newport Utilities	TN	City	•	•	•	•		•	•	•	•	•	•	•	•	•
City of Portsmouth	VA	City	•	•				•	•	•	•	•	•			
City of Rancho Cucamonga	CA	City	•	•				•	•	•	•		•			
City of Mont Belvieu	TX	City	•	•	•	•		•	•	•	•		•	•	•	•
City of Manhattan Beach	CA	City	•					•								
City of Mission Viejo	CA	City	•					•								
City of Ventura	CA	City	•					•								
City of Oxnard	CA	City	•					•								
City of La Mesa	CA	City	•					•								
City of Santa Clarita	CA	City	•					•								
City of Chula Vista	CA	City	•					•								
City of Hayward	CA	City	•					•								
City of Alameda	CA	City	•					•								
City of Inglewood	CA	City	•					•								
City of San Leandro	CA	City	•					•								
City of Woodland	CA	City	•					•								
City of Winters	CA	City	•					•								
City of West Sacramento	CA	City	•					•								
Johnson City Energy Authority	TN	Electric Utility	•	•	•	•		•		•					•	
City of Yuma	CO	City	•	•		•		•								
City of Wray	CO	City	•	•		•		•								
Napa County	CA	County	•			•		•								
City of Waterloo	IO	City	•			•		•								
City of Missoula	MT	City	•					•								
Alameda County	CA	County	•			•		•								
City of New Braunfels	TX	City	•					•								
City of College Station	TX	City	•					•								
City of Bryan	TX	City	•					•								
City of Santa Ana	CA	City	•					•								
City of Walla Walla	WA	City	•			•		•								
City of Centennial	CO	City		•		•		•								
City of Loveland	CO	City	•			•		•								
Indianola Municipal Utilities	IO	City	•		•	•		•								
Lenoir City Utilities	TN	City	•	•				•								
City of Lodi	CA	City	•			•		•								
City of Dayton	TX	City	•		•	•		•		•						
City of Chesapeake	VA	City	•					•								
City of Lehi	UT	City	•	•		•	•	•								

YOUR DEDICATED ENGINEERING DESIGN TEAM



COURTNEY VIOLETTE

Project Executive: Strategy & Fulfillment

Courtney has led over 100 municipal broadband planning and implementation projects across the country. He is a Certified Fiber-To-The-Home Professional and holds several technical certifications in broadband, information technology and information security. Prior to joining Magellan, he spent six years as the CIO for the City of Palm Coast. During this time, he planned and built the first true City-owned open-access network in the Southeast. Through his leadership, the network grew to serve government, business, education and healthcare needs across the City, saving these organizations millions of dollars and providing gigabit connectivity to meet the community's needs. Courtney holds an MA in Information Technology Management and a BS in Computer Science from Webster University.



COLE HENKLE

Team Lead: Broadband Design Engineering

Cole has a decade of experience managing large broadband designs. He manages the full life cycle of engineering projects from inception to completion, managing all permitting activities and personnel in local and remote locations. He has direct experience working with major carriers, municipalities and regional governments on regional fiber and broadband deployments across the US, some of which include Google Fiber, Verizon and the Cities of Hillsboro, OR, Chesapeake, VA, Portsmouth, VA, Boulder, CO, and Ann Arbor, MI. Mr. Henkle lead the City of Hillsboro design engineering project, with 100 miles of fiber backbone and 5,000 homes designed and built to date.



JOHN WILLIAMS P.E.

Broadband Professional Engineer

John uses a pragmatic approach to building networks. He has worked his entire career in municipal broadband since he has graduated from Tennessee Tech Engineering School in 2004. He has built multiple successful FTTH projects from the ground up, including the planning, engineering, construction and implementation of services for systems covering 50,000 homes. He has also worked in sales engineering, supporting a sales team focused on municipal broadband deployments across the US.



SHAWN MORRIS

Broadband Designer

Shawn has more than seven years of experience designing, and coordinating fiber projects and has additional experience in the architecture design industry. Most recently, Shawn has contributed towards multiple municipal FTTH and backbone projects. Shawn excels at identifying potential problems early in projects and uses his problem-solving skills to plan and develop processes and procedures to navigate each unique challenge. His excellent customer service is consistently recognized by our clients and Shawn always ensures that quality deliverables are provided. Shawn holds a Masters of Architecture from Kansas State University.



MATT HUHMANN

Broadband GIS Engineer

Matt has more than seven years of experience designing fiber networks and providing GIS & programming support for telecom projects across the United States. With additional experience in the customer service industry, he always puts our customer's needs first. Matt leverages his background in computer science to improve efficiency and project workflows, which allows our teams to consistently deliver against deadlines. Using his programmatic approach to outside plant design, Matt has automated many processes and deliverables including splice sheets, BOMs, make-ready production and tracking, and construction drawings. Matt holds a Bachelor's of Science in Computer Science from the University of Missouri - Saint Louis.



ZACH KICKHAEFER

Broadband Designer

Zach has seven years of experience in designing and managing fiber projects as well as seven years of GIS solutions for both the construction and transportation industries. Zach has managed major fiber design projects for large communication carriers, resulting in nearly 500 miles of aerial and underground fiber paths designed. Zach specializes in process improvement, problem solving and project managing both internally and externally. Zach has excellent customer services skills and strives to ensure that a quality deliverable is provided to the client. Zach has a Bachelor of Science in Geography with an emphasis in GIS from Kansas State University.

Name	Title	Project Role
Courtney Violette	Project Executive	Project fulfillment, strategy, milestones and deliverables. Working with client leadership team and final presentations to the City.
Cole Henkle	Team Lead Broadband Design	Project management, design/engineering point of contact, network design, attend progress meetings, production of construction plans, specifications and cost estimates.
John Williams PE	Professional Engineer	QA/QC, construction print stamping and sealing, compliance with local & state regulations.
Shawn Morris	Broadband Designer	Production of construction plans, specifications, and cost estimates, bill of materials.
Zach Kickhaefer	Broadband Designer	Production of construction plans, specifications, and cost estimates, bill of materials.
Matt Huhmann	GIS Software Engineer	GIS related tasks for fielding and identifying existing infrastructure, map development and infrastructure integration.

STATEMENT OF WORK

Task 1: FTTP Low Level Design, Engineering and Permitting

Magellan will develop a 100% design for the Waterloo Communications Utility's (WCU) Fiber to the Premise (FTTP) project which will include the full network design, engineering and permitting for a ubiquitous fiber-optic network passing nearly every household and business throughout the community. During this phase of the project, Magellan will execute and finalize 30%/60%/90%/100% design milestones, PE stamps, and procurement document development to support both a potential Bond Issue, as well selection and to contract with an Underground Fiber-Optic Construction Contractor.

Magellan will continue to collaborate closely with the City's departments to ensure they are informed of the project, processes, goals and requirements. This should include public works, utilities, permitting and community relations. Our goal is to design the network to meet the City's current construction standards and ensure that it minimizes impact on the community. Our process will focus on right of way usage, utility separation, erosion control and restoration requirements. We will establish points of contact between our team and departmental personnel so they can communicate throughout the design process. We believe that tight collaboration and a free flow of information will produce the best design for the City.

Magellan will develop a formal engineering design, construction prints and bill of materials with cost estimates for WCU. This process will include:

1. Project kickoff and data collection;
2. GIS map development, layer development and initial routing and desktop design;
3. Develop 30% design and review with the City;
4. On-the-ground fielding of all fiber running lines that will be used in the project;
5. Collection of field data through handheld GPS units that upload to back-office engineering;
6. Identification of all permitting authorities with jurisdiction and right of way;
7. Identification of any environmental requirements along running lines;
8. Identification of all special crossings, including railroads, ditches and bridges;
9. Review of existing utility data and locations;
10. Review of existing running lines with City representatives; optimization of running lines based on overall constructability, cost, redundancy and security;
11. Based on optimized running lines, development of a 60% low-level design, bill of materials and cost estimates;
12. Review the 60% design package with the City;
13. Create any adjustments as needed based on feedback from the 60% design;
14. Development of the 90% design, bill of materials, cost estimates and construction prints;

15. Review the 90% design with the City;
16. Make any final adjustments to the 90% design package;
17. Produce the final 100% design, final bill of materials and cost estimates and final construction prints to be submitted in a bid package for construction.

We will ensure that your design rules and requirements are fully understood and implemented across our organization so that our outputs and performance are consistent. Additionally, we will ensure that best practices from past projects and those identified during this project are shared with our teams so that our design deliverables, and ultimately the cost to build, can be optimized as much as possible.

Project Coordination

Magellan's dedicated project manager will coordinate communications and resources that need to interact throughout the project. This includes interfacing between your team, permitting authorities, and other resources. We will coordinate meetings, critical information and processes to ensure that the engineering timelines are met throughout each phase of the project. Our standard project management practices for this engagement will include but are not limited to:

- Development of project charter;
- Development of online project plan, timeline and dependencies;
- Weekly or bi-weekly project status calls;
- Meeting agendas and meeting minutes;
- 30%, 60%, 90% and 100% onsite design reviews
- Onsite kickoff meeting with the City;
- Periodic site visits as needed for meetings with the City.

Task 2: Fiber OSP Construction Procurement Support

Magellan Advisors will develop RFP scope of work language, and support necessary documentation needed to issue procurement documents related to Fiber OSP construction. Our team will develop all documents in coordination with the City's purchasing department, will support solicitation tasks (Q&A, pre-bid meetings), and will evaluate and recommend a short-list of vendors. Magellan will support and coordinate all vendor interviews, as well as the City's contract process. Magellan will also support the City in negotiations for the most optimal agreement.

- Prepare Request for Proposals for network construction for review and approval by City staff.
- Assist City with preparation of written responses to contractors' questions.
- Prepare presentation and assist with pre-proposal conference for interested contractors.
- Work with City's selection team to evaluate and rank responses.
- Assist with contract execution as needed

Magellan assumes 30 days to develop the Fiber OSP Construction RFP document, 30 days for public solicitation and another 30 days for RFP submittal review, short-listing of vendors, vendor interviews, and selection.

PRICING

Magellan's pricing is based on 309 miles of fiber plant estimated for the fiber to the premise (FTTP) network. Magellan will bill on a monthly basis for percent completion of each task as itemized below. Invoices will be submitted on the last day of the month for work completed in that month.

Task	Description	Pricing
High-Level Design (309 miles)	<ul style="list-style-type: none"> Fiber running lines Underground placement Use of existing conduit and assets Fiber cabinet placement Hut placement Data center location Workshops with City departments for coordination and consensus 	\$636,293
Detailed Engineering (309 miles)	<ul style="list-style-type: none"> Constructability walkout Adjustment to running lines Utility coordination, alignments and separations Permit authorities Permitting plan Preliminary fiber splicing plans First bill of materials and cost estimates Workshops with City departments for coordination and consensus 	\$636,293
Final Engineering (309 miles)	<ul style="list-style-type: none"> Refinement of final routes Value engineering opportunities Final fiber splicing plans Final construction prints Construction packages and bid documents Workshops with City departments for coordination and consensus 	\$636,293
Construction Packages & Permits (309 miles)	<ul style="list-style-type: none"> Final construction packages and bid documents GIS-based design, incorporated into City systems Permit package submission 	\$212,098 (+60 days)
Professional Engineer Stamping (PE Stamping of Drawings)		\$348,475
Travel Expenses and Incidentals (Not to Exceed)		\$20,000
Procurement Support - Development of RFP/Management of Solicitation		\$10,000
Total Pricing		\$2,499,452
<ul style="list-style-type: none"> Existing Subsurface Utilities will be designated on plans using ASCE 38 QLC. Design, Engineering and Permitting is billed at \$1.30 per foot for any work over and above stated distances in this proposal. Professional Engineering services are billed at \$180 per hour Pricing does not include post Construction as-builts. 		

- Magellan will bill on a monthly basis for percent completion of each task as itemized in the pricing table.
- Magellan offers net 30 pricing to its clients.

TIMELINE

Task	Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Project Kickoff														
2	Data Gathering														
3	High-Level Design (30%)														
4	High-Level Design (30%) Review with Waterloo														
5	On Site Fielding & Survey														
6	High-Level Design (60%)														
7	High-Level Design (60%) Review with Waterloo														
8	Final Design (90%)														
9	Final Design & Bid Package (100%)														
10	Final Review with Waterloo (100%)														

REFERENCES

Magellan is happy to provide six references for similar fiber design projects that are comparable to the City's project, which you'll find in the following pages. These references all have backbone design connecting City sites and facilities similar to the City of Waterloo. In these projects, we have also managed construction and inspections as the City's representative to ensure that the fiber design was built to the engineering specifications, City construction standards and state requirements.

Our construction management teams also ensured that the construction contractor protected the community and environmental components in each project, as these communities were particularly sensitive to impact from construction. In addition, Magellan provided fiber design services for the clients listed below over the past three years.

FIBER DESIGN & CONSTRUCTION REFERENCE: CITY OF PORTSMOUTH, VA



CONTACT

Daniel Jones
Chief Information Officer
P: 757.393.8398 x2117
E: jonesd@portsmouthva.gov

"Our municipal fiber backbone fits right in with Council's vision of becoming a smart city and being prepared for the next generation of technology"
-Mayor John Rowe, City of Portsmouth

CHALLENGE

With significant growth, the City of Portsmouth's existing budget for telecommunications services was expected to double from \$1 million to over \$2 million per year. To reduce its costs and create new capabilities, the City envisioned investing in its own fiber backbone. To do so, the City needed a partner that had planned, designed and built these networks in the municipal environment.

MAGELLAN'S SOLUTION

In 2017, Magellan conducted a needs assessment and fiber master plan for the City. The master plan included a high-level design for a citywide fiber backbone, with accompanying cost estimates and a strategic business case. The business case showed by investing in the fiber, the City would eliminate 95% of its recurring telecommunications costs and own the fiber to support growing needs among city departments, external stakeholders and the community.

In 2018, City Council approved the master plan and authorized the construction of the fiber network to 85 city, school, library, public safety, tower and other sites. Magellan developed the engineering design for the fiber network using 100% underground construction, with high capacity fiber and multiple levels of redundancy. Magellan's design process gave the City the most effective solution to build the network at the lowest cost. Upon completion of the design, Magellan was retained to procure the construction contractor and manage construction and inspections for the City.

OUR CLIENT'S SUCCESS

Today, the majority of the network has been built and the City is already realizing benefits of its investment. The City will connect each and every site at 1 Gbps and 10 Gbps, increasing site bandwidth to every facility. The network is connecting major community anchors like Tidewater Community College and other key stakeholders throughout the City. It will enable a new platform for innovation in traffic management, public safety, utilities management, and most importantly, it will Portsmouth as a Smart City for tomorrow.

FIBER & WIRELESS NETWORK DESIGN REFERENCE: CITY OF CHESAPEAKE



CONTACT

Jay Krail
Project Manager
P: 504.920.3181
E: jkrail@cityofchesapeake.net

“The deployment of fiber throughout the City will open doors and offer benefits that we have only begun to fathom. It is critical that we approach this project with a strategic mindset, and that’s why we’re so pleased to have Magellan Advisors on our team. They, along with our regional partners in Hampton Roads, will help us all take a giant leap into the future.” - Rick West, Mayor of Chesapeake

CHALLENGE

The City of Chesapeake, located in the Hampton Roads region of Virginia, is currently experiencing a technology ecosystem boom. As the region flourishes, Chesapeake’s leadership noticed a lack of resilient and accessible fiber infrastructure to support the City’s technology initiatives and broadband services. In late 2019, the City engaged Magellan Advisors to lead the development of Chesapeake’s Next Generation Network (C-NGN) in an effort to provide world-class fiber connectivity to the City’s enterprises, partners, and the greater Hampton Roads region. The objectives included enhancing municipal services, promoting economic development, supporting education and creating a catalyst for future private investment in broadband.

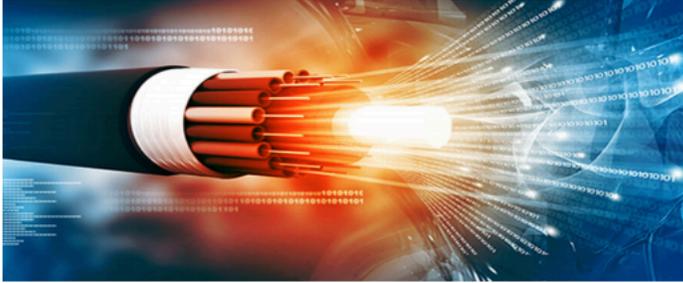
MAGELLAN’S SOLUTION

Magellan worked with the City to engineer the 170-mile C-NGN fiber-optic network and complementary smart city wireless overlay, branded Chesapeake Connects. Magellan conducted detailed assessment of each stakeholders’ needs and developed the network design to maximize community use of the fiber. The network connects over 200 community facilities including city, school, library, hospital, public utility, public safety and traffic locations. The design also incorporates Chesapeake’s economic development goals by ensuring that key business corridors are equipped with high-capacity fiber. Magellan Advisors engineered over 170-mile route miles of fiber, including fielding, low-level design, construction prints, permitting, master budgets and construction bids. In late 2020, Magellan’s scope was expanded to determine how Chesapeake Connects will support organizations during and after the COVID-19 pandemic focusing on telehealth and remote education.

OUR CLIENT’S SUCCESS

Magellan’s process of design, then bid, then build is giving the City best approach to minimize the cost of construction, select the most capable construction contractor and ensure rapid deployment of the network, which will start in 2021. The City of Chesapeake plans to begin construction by July 2021 and is working with Magellan to accelerate the timeline, targeting 18-24 months for completion of major construction related activities.

FIBER DESIGN & CONSTRUCTION REFERENCE: CITY OF DAYTON



CONTACT

Theo Melancon
City Manager
P: 936.258.2642
E: citymanager@daytontx.org

“Reliable high-quality internet service is vital to both our residents and our businesses. “With gigabit service as a utility, our customers can expect service at a price that’s cheaper than most national providers and a speed that exceeds anything currently offered in the area.”

-Theo Melancon, City Manager

CHALLENGE

In 2018, the City of Dayton contracted with Magellan Advisors to conduct a broadband study and engineering estimates for a fiber to the home network to reach 100% of the City’s homes and businesses. The results of this study showed that the City could build the network and serve its community with gigabit internet services in a fiscally responsible way. In late 2019, the City secured over \$13 million for the project and partnered with Magellan to conduct the full engineering design, business plan and construction procurements.

MAGELLAN’S SOLUTION

In 2019, Magellan was selected to provide the City’s fiber to the home engineering design, covering 100% of homes and businesses within the City. Magellan’s engineering team created a blueprint for fiber backbone and distribution for the lowest possible cost and which would provide 1 and 10 gigabit high-speed internet services to homes and businesses from day 1. Magellan worked with the City to determine the best constructability methods, protect City rights of way and minimize construction impacts to the City. Magellan’s field team walked every route in the City to ensure constructability and avoid any obstacles that would create construction delays. In 6 months, Magellan completed the engineering design, construction bid package, permitting packages and electronics design for the network, meeting the City’s goal of moving into construction in January of 2021.

OUR CLIENT’S SUCCESS

In early January 2021, Magellan released the construction RFP with the City and received numerous bids. Magellan’s bid process allowed for a highly competitive process, with the winning bidder providing a final price that was \$3 million under the project budget. Today, Magellan is managing the entire construction and implementation process for the City and will assist the City launch services to the community in late 2021.

FIBER DESIGN & CONSTRUCTION REFERENCE: CITY OF HILLSBORO, OR



CONTACT

Greg Mont
Information Services Director
P: 503.681.5401
E: greg.mont@hillsboro-oregon.gov

“The partnership between the City and HSD is all about what’s best for our community. We have a long history of working together to best serve our students and families, and this is another opportunity for us to do the right thing and make our schools and our community stronger.”

-Mike Scott, Hillsboro Schools District Superintendent

CHALLENGE

The City of Hillsboro and Hillsboro School District envisioned a joint partnership for a community owned fiber network to support schools’ connectivity needs and enable a platform for world-class broadband. In 2017, the City and School district signed an agreement to co-build the network. The next step was to identify a partner that understood municipal fiber projects and could manage the complex engineering process at hand, creating two networks from one.

MAGELLAN’S SOLUTION

The City of Hillsboro hired Magellan in 2017 to develop a citywide fiber backbone and fiber to the home broadband network. Magellan approached the design by working with School District staff to determine their most important needs – high bandwidth, reliability and redundancy across all schools. Through the planning process, Magellan designed a highly redundant, multi-ring fiber backbone to connect 34 schools with dark fiber.

Concurrently, Magellan engineered an optimal fiber to the home architecture using the backbone network as a launchpad for broadband. Our design furnished the City with a blueprint for broadband across 44,000 homes and businesses. We provided detailed fielding, utility assessment, permitting, make-ready, prints, costing and as-builts for each phase of construction. The design delivers 1 and 10 gigabit capabilities natively in the network. To enable seamless deployment of the network, the City also selected Magellan to manage construction, given our deep experience constructing municipal fiber and our collaborative approach with the City’s internal departments.

OUR CLIENT’S SUCCESS

Today, 34 schools are connected to the network, providing nearly unlimited bandwidth to support their current and future needs, while reducing its operating budgets by \$200,000 annually. The fiber backbone and the first phase of fiber to the home construction have been completed to enable the City to launch its gigabit internet services to the first homes in Hillsboro.

FIBER DESIGN & CONSTRUCTION REFERENCE: CITY OF MONT BELVIEU



CONTACT

Nathan Watkins
Assistant City Manager
P: 281.576.2213 x228
E: nwatkins@mont-belvieu.net

"Without Magellan, our network would have been double the estimated costs and taken longer to complete. We could not be more pleased with the level of service and professionalism and would highly recommend Magellan to any city looking for fiber solutions for their community."

-Nathan Watkins, Assistant City Manager

CHALLENGE

After many attempts to persuade local providers to upgrade their internet services to support higher speeds and better reliability, the City realized that it needed to take action directly if it wanted to ensure its residents and businesses had access to world-class broadband. The City's challenge was how to build, launch a City-owned internet service without this core expertise in house. The City needed a turnkey solutions partner that could plan, engineer, construct and launch a broadband network to meet the needs of its community.

MAGELLAN'S SOLUTION

To implement the network, the City looked to Magellan to engineer, construct and launch the fiber to the home network. Magellan provided a dedicated team of broadband engineers and planners that managed all facets of design, construction and operational support. Our engineering team designed a scalable 10-gigabit GPON-based network to reach 100% of homes and businesses within the City. We advised the City on optimizing the design to support rapid construction, which was completed ahead of schedule and under budget. Our team provided all fielding, constructability analysis, low-level design, construction prints, permitting and as-builts. On completion of engineering, we managed the bid process, identified contractors and provided construction management, equipment integration, beta testing and go-to-market launch of the City's internet services over the 24-month deployment.

OUR CLIENT'S SUCCESS

One year after launch, the Houston Chronicle claimed that Mont Belvieu "May have the best internet in Texas." The City provides gigabit Internet to homes and businesses at prices less than the competition and with no data caps. For \$75 per month, residents receive 1 gigabit internet service and an in-home gigabit gateway router. To date, over 70% of residents have signed up for service.

FIBER DESIGN & CONSTRUCTION REFERENCE: CITY OF RANCHO CUCAMONGA, CA



CONTACT

Fred Lyn
Utility Division Manager
P: 909.477.2740 ext. 4035
E: fred.lyn@cityofrc.com

“Today this infrastructure plays a crucial role in Rancho Cucamonga, not only in economic development, but will be pivotal in the long-term sustainability and future planning of the City. Rancho Fiber has arrived.”

-Fred Lyn, Utilities Division Manager

CHALLENGE

City leadership recognizes that fiber-optic infrastructure is an important part of the Rancho Cucamonga community. They understand that in today’s world, connectivity affects every aspect of the community - whether in municipal operations, public safety, education, healthcare, quality of life, entertainment and commerce. To realize leadership’s vision, the City needed a partner that could develop and manage the expansion of fiber-based broadband across the City in a measured approach that achieved the City’s financial constraints while expanding access in year-by-year deployments across the City.

MAGELLAN’S SOLUTION

In 2016, Magellan worked with the City to develop a fiber master plan and engineering assessment that laid out a multi-year plan for new aerial and underground fiber deployment throughout the City, totaling \$12 million over 6 years. Since adopting the master plan in 2017, Magellan has designed and built the first three phases of the fiber to the premises network. In this work, we have provided full engineering, fielding, utility assessments, pole and make ready planning, construction prints and bid packages. We also manage construction as an owner’s representative for the City in the fiber build, ensuring that the construction contractor meets our engineering specifications developed for the City, with tight quality control and within the budget.

OUR CLIENT’S SUCCESS

Today, the City has connected neighborhoods and business corridors, enabling gigabit broadband services to residents and businesses across the City. Residential customers receive gigabit service for \$69.99 per month, giving them nearly 5 times the bandwidth for a lower cost than is available in the market today. Businesses have competitively priced internet on City fiber that has replaced slow and unreliable dsl and cable internet services.

Signature & Acceptance

Signature of this Proposal by Client warrants that all components of this Proposal are acceptable to the Waterloo Communications Utility and the City of Waterloo and that the person(s) signing this Proposal has the right, power and authority to execute the Proposal.

Magellan Advisors, LLC
999 18th Street, Suite 3000
Denver, CO 80202

Waterloo Communications Utility

Print Name: Courtney Violette

Print Name:

Title: COO

Title:

Signature:



Signature:

Date: September 30, 2021

Date: