TOWN OF JAMESTOWN, RI INVITATION TO BID FEASIBILITY STUDY FOR A COMMUNITY NETWORK





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Town of Jamestown, Rhode Island

93 Narragansett Ave – Jamestown, RI 02835 INVITATION TO BID



Feasibility Study for a Community Network

Proposed Bid Price: \$ 65,625

Bid Price in words: <u>Sixty-five thousand, six hundred twenty-five dollars</u>

The undersigned bidder hereby states that they have carefully examined this **INVITATION TO BID** and further agrees to the provisions, requirement, terms and conditions, all of which are acknowledged to be part of this **BID PROPOSAL.**

Name of Bidder: <u>Design Nine, Inc.</u>

Address of Bidder: 2000 Kraft Drive, Suite 2200, Blacksburg, VA 24060

Authorized Signature____

Date: January 3, 2022

Phone: 540-951-4400 Fax: 540-242-3201 Email: cohill@designnine.com

COVER LETTER

Design Nine is pleased to submit a response to the Town of Jamestown, RI, Invitation to Bid for A Feasibility Study for a Community Network. We believe that Design Nine is uniquely qualified to provide the Town with information and recommendations that will lead to improved broadband throughout the Town, especially in the underserved and unserved areas of the Town of Jamestown.

- Since 1993 we have worked with more than 300 communities on broadband planning and implementation projects. Our business and financial planning work has led to many successful projects. No other company has as many broadband planning successes.
- In late 2020, we completed a CARES funded project with Montgomery County, Virginia, that brought fiber to an underserved area of the county. We were able to complete the project in less than three months.

We provide the following services

- Assessment of your current broadband infrastructure and services
- Propagation studies to identify how to get better service to unserved/underserved areas
- Technical options and designs that are "grant ready" and that will help attract and retain jobs and businesses
- Detailed recommendations for achieving better broadband for residents and businesses
- Plans that will deliver a sustainable solution that makes the best use of your funding.
- Expert advice and the right technical specifications for grant applications

We will work closely with the Town of Jamestown and key stakeholders to produce a broadband plan that does not leave anyone in the Town unserved. We will guide the Town as it navigates all the options and tradeoffs with different wireless and fiber technologies, business/financial plans, operational models, and deployment plans.

We have a long history of working with local governments on broadband–longer than any other company in the United States (since 1993). We look forward to helping Town of Jamestown plan a world class network.

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Andrew Cohill, PhD. President, Design Nine, Inc. Email: cohill@designnine.com 2000 Kraft Drive, Suite 2200 Blacksburg, VA 24060

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OVERVIEW OF COMPANY

Design Nine has a world class team of broadband analysts and network engineers to support our work with the Town of Jamestown.

We have completed local government planning work for broadband in more than twenty-five states over twenty-eight years. Helping communities get better broadband is the only work that we

do. Our headquarters' staff and the staff in our three remote offices: Bozeman, Montana, San Diego, California, and Mocksville, North Carolina, have been able to effectively handle projects all across the country and Canada. Unlike many consulting companies, helping communities get better broadband is the only work that we do.



We are one of the only broadband planning firms in the U.S. that has experience in these critical areas:

- Early phase broadband planning
- Broadband grant funding and financing, with more than twenty-five years' experience writing successful broadband grants.
- Pre-implementation broadband network planning.
- Network design for both fiber and broadband wireless, and cost estimates
- Network operations and management
- Service Provider negotiations
- Financial pro forma development

Assisting local governments with the planning and the construction of community networks while managing several networks has given us invaluable hands-on experience that is part of the expertise that we share with our clients. Development of Partnerships and Cooperative Agreements is a core organizational strength.

Much of our work with local governments in successful broadband efforts has been driven by partnerships either between different levels of government, adjoining governmental entities, or public-private agreements.

Design Nine will help the Town of Jamestown bring better Internet connectivity to everyone in the Town that needs it. Broadband networks, should be managed more like community road systems that provide shared, economical transport for everyone. Our networks are unlike today's duplicated, expensive, and under-performing cable and telephone infrastructure.

- **Evaluate Current Conditions** This work typically includes current asset and future needs assessments, evaluation of current service provider offerings, examine current and future bandwidth needs, and map current fiber and wireless infrastructure in the Town. This work can also include business and residential broadband surveys to collect local broadband speed data, identify unserved and underserved areas, and map areas of high demand for ISP partners. We will also examine planned broadband projects that are discoverable.
- Identify Broadband Gaps and Needs To identify unserved and underserved areas, Design Nine will use FCC data and commercial data sources, noting that the FCC data is unreliable. We can conduct business and residential broadband surveys to collect more accurate and timely broadband speed, cost, and availability data. As part of our professional fee, we will design and host online Web-based surveys and work with the Town to promote them to businesses and residents. We have also found that a direct mail effort, using the USPS EDDM (Every Door Direct Mail) usually creates a much higher response—as high as 12% to 15% of households. The survey data we collect is geo-located to provide the Town with hard data that can be very useful as part of a grant application.
- **Provide a Market Study** Understanding the market, as it is now but also where demand is growing is an important early step in our planning process. The data we collect during the assessment phase is fed directly into our gap analysis work. We strongly believe it is critical to gather information from all stakeholders defined in the project. We will assess the economic and community impact of broadband issues, including issues limiting broadband expansion.
- Identify Partnership and Funding Strategies We will identify potential public/private partnership opportunities, evaluate and recommend funding strategies, and provide recommendations on working with ISPs to improve broadband service in the Town.
- **Develop Detailed Technical Options/Solution** This work includes developing appropriate wireless and fiber technical designs, detailed cost estimates, recommendations for a multiphase build out, and recommendations for the best technical solutions for the Town.
- **Provide a Road Map to Success** We will provide a comprehensive final report that provides the Town with specific recommendations and strategies to improve broadband in the Town.

Our final report is a step by step plan for your success with a timeline that can be shared with your community. While we deliver technical specifications and a price tag for construction, we also focus on answers for important questions which in our experience define success in broadband projects. Those questions go beyond technology and can be the difference between a project that has the community's support and one that doesn't. The following pages provide more detail on our approach to the work, the work activities, and the deliverables for each Scope of Work item in the RFP.

PROJECT TEAM, ROLES AND RESOURCES

Design Nine has a world class team of broadband analysts and network engineers to support the effort with Town of Jamestown. All team members listed will be available throughout the entire study. No sub-contractors will be used.

PROJECT MANAGER

Andrew Cohill, Ph.D., CEO

Andrew Cohill is President of Design Nine and will provide overall supervision and management of the project while serving as project manager. He will provide the strategic planning and design for the project, and he will directly supervise the work of other team members, will make all work assignments, and will review and approve all work items, reports, and recommendations before releasing them to the client.



Experience with related projects

Cohill has been the project lead for eighteen projects over the last three years including multi-county projects in Wisconsin. Texas,, Pennsylvania and West Virginia. He provided leadership for the the fall of 2020, Montgomery County, Virginia, CARES-funded project which was

conceived, and completed on-time and under-budget with customers connected to the network in ninety days.

Cohill has worked with more than 300 communities worldwide on telecommunications planning, design, and engineering of open access broadband systems. Cohill has provided assistance to community broadband projects throughout the United States..

Background

He served as Director of the Blacksburg Electronic Village for nearly a decade, beginning with the project's start in 1993. Blacksburg has been widely hailed as the most wired community in the world, and Cohill's work has been used as a model for the development of other community telecommunications infrastructure projects throughout the world. National and local government officials from more than 25 other countries visited Blacksburg to take seminars and workshops from Cohill, and more than 100 representatives from communities in the United States visited Blacksburg to learn from Cohill.

Recent Articles

Cohill, Andrew *Municipalities Need a Local Transport Provider (LTP)*. ICT Solutions and Education magazine, April 2019

Cohill, Andrew Breaking Telecom Monopolies. Broadband Communities magazine, March 2017

Cohill, Andrew The Role of the Local Transport Provider. Broadband Communities magazine, March 2015

Cohill, Andrew Worst Practices in Community Broadband, Part Two. Broadband Communities magazine, August 2014

PORTFOLIO OF KEY PROJECT STAFF

Sid Boswell, Senior Network Engineer

Sid Boswell will assist with specifications and network design tasks, valuation of contractors, and quality assurance. He has extensive experience with the deployment of broadband infrastructure. His prior work experience as a senior consultant and project manager for Accenture included extensive work with some of the country's largest service providers, including AT&T, Verizon, Sprint, Comcast, Nextel, and Iridium.

Background

Sid Boswell has twelve years of experience in the information technology and telecommunications industries. His technical skills include hands-on experience with optical networks, Voice over IP systems, TCP/IP (Internet) networks, and LAN/WAN (network) design.

Experience with related projects

Boswell has extensive experience with the design, development, and management of broadband networks. Some of his recent accomplishments include:

- Project lead for the original Wired Road fiber and wireless build out in 2008.
- Project lead for the Bozeman citywide fiber deployment, which includes 20 miles of backbone fiber, service provider meet point specifications, engineering oversight, and network technical specifications.
- Project manager for the stimulus-funded FastRoads project in New Hampshire, which includes 120 miles of fiber backbone and fiber to the home in two communities.
- Project manager for AccessEagan, the open access network Design Nine has designed and built for the City of Eagan, Minnesota.
- Project manager for Phase One build (integrated fiber and wireless) for The Wired Road in rural Virginia.
- Technical lead for the development of a carrier class open access network for the City of Palm Coast, Florida.
- Led team in planning, developing, and testing a successful multi-vendor proof-of-concept IPTV Service.
- Improved broadband provisioning and increased development program operational efficiency by introducing stage entrance criteria and cross-project issue, risk and jeopardy management for Comcast.
- Led a proactive data quality audit team for Comcast which uncovered revenue recovery opportunities on the order of \$2M every six months.
- Plotted a multi-year operational strategy for AT&T to supplant current technologies with a 'cybernated' network with an IP MPLS/Optical core and a multi-service edge.

Jack Maytum, Senior Broadband Analyst

Jack Maytum has a deep background in business model development and analysis. He will also assist with stakeholder meetings, ISP attraction, negotiation, and evaluation. He will manage service provider interactions and provide oversight of ISP contract agreements.

Education

B.A., Providence College, Providence, RI

M.S., Information Technology, Rochester Institute of Technology, Rochester, NY



Experience with related projects.

Maytum has extensive experience with the design and development of telecom networks:

- Senior analyst for a six county broadband feasibility study in West Virginia. Maytum met with service providers, stakeholders, and county staff. Interviewed local businesses, conducted a bandwidth needs assessment, and assisted with telecom asset identification.
- Four Towns Wireless Maytum is the project lead for a four town broadband wireless build out in rural Massachusetts. Work includes stakeholder interviews, review of financial documents, contractor quality assurance, and technical oversight.
- Keene, NH Project lead for a fiber to the home and fiber to the business study in Keene. Work included business interviews, asset identification, cost estimate development, and presentations to Town leadership.

Background

Maytum's employment/consulting experience has included both very large companies and a heavy focus on small, entrepreneurial start-up companies. He has extensive experience starting and managing new business enterprises like community broadband efforts.

Maytum's direct experience in telecom network management began immediately after college graduation in his role as a communications officer in the U.S. Amy Signal Corp.

For five years Maytum provided technical support for AT&T, coordinating the efforts of sales staff and networking professionals who were providing telecom services to Connecticut's 147,000 business customers.

Maytum was responsible for preparing technical information for presentations to mayors, councils and city managers across the U.S. regarding the installation and operation of networked red light cameras and speed detection systems. Maytum also taught network programming as an instructor at Northeastern University's state-of-the-art engineering program for five years.

Experience with Related Projects

Maytum has been involved with over thirty projects as either a senior broadband analyst or the project lead. The project locations span the country from Virginia and West Virginia to Wisconsin, Minnesota, Idaho, Texas to Vermont, Massachusetts. His work has included projects in Alleghany County, Virginia, New Kent County, Virginia, Culpeper County, Virginia, Wise County, Texas, Keane, New Hampshire, along with Grant and Hampshire Counties in West Virginia. HIs project involvement includes the nine counties in West Virginia's Regions III and VI, twelve counties in Pennsylvania and the eleven counties in Virginia involved in the PamunkeyNet planning study.

Matt Bussing, Network Engineer

Mr. Bussing is an experienced network design engineer. Bussing has worked extensively on broadband network design and construction, is familiar with a wide variety of fiber and wireless network configurations, and has worked on a wide variety of work efforts, including network design, wireless signal propagation studies, service provisioning, radio testing and configuration, and colo fiber and equipment management. Bussing will be conducting field inspections, assist with permitting, assessing contractor work, and overseeing compliance with plans and technical specifications.



Experience with Related Projects

Bussing has more than ten years experience with the design, development, and management of broadband networks. Some of his recent accomplishments and related activities include:

- Technical lead for a \$2 million dollar network expansion of The Wired Road, project included middle mile fiber, last mile fiber, tower construction, point to point wireless and broadcast wireless design and installation, building renovations, and design of a public community computing center.
- Lead designer for a high performance fiber/wireless county network in Wise County, Texas.
- Lead designer for a fiber/wireless FTTH network in Richwood, West Virginia.
- Bussing was the technical lead for the Charles City County planning work that led to a \$650,000 state grant to build fiber and wireless facilities in the county.
- Preparation of multiple broadband grant applications, duties included direction of workflow, collection of information with a focus on quality assurance, design and estimation of multiple middle mile and last mile networks, and thorough review of environmental effects of network construction.
- Bussing has worked extensively on the New Hampshire FastRoads middle/last mile stimulus work, including pre-construction planning, detailed network design, and early network construction cost estimates.
- He was project manager for a fiber to the home build out for The Wired Road, and provided the day to day project oversight.
- He was lead on the network architecture design for the 60 mile fiber backbone for the Rockbridge Area Network Authority.
- Network architecture and cost estimates for the 47 town Wired West fiber to the home project in western Massachusetts.
- Fiber design and cost estimates for the Stuart, Virginia downtown fiber project.

Daniel Cliburn

Cliburn is a GIS Analyst for the company. His work includes development of base maps and network route maps for fiber and wireless networks. He will assist with the development of bid documents, including any needed maps and route designs. Cliburn has extensive fiber and wireless network design, including propagation studies and cost estimating.

Experience with Related Projects

Cliburn has worked on a variety of Design Nine's broadband planning projects. His work has included:

- Cliburn has worked extensively on network and asset mapping of The Wired Road project.
- Four county planning project in Pennsylvania. Mapping work included base map development, tower asset analysis, fiber route analysis, points of interest, and wireless broadband propagation studies.
- Six county planning project in West Virginia. His work included extensive survey data map work–geo-coding survey responses, mapping broadband speeds from survey data, and an analysis of customer satisfaction with current broadband providers.
- Cliburn is part of the team developing a detailed technical architecture for several communities in Mingo County, West Virginia. His work includes base maps, calculating tower heights, line of sight requirements, and assisting with propagation studies.



Lindsey Finks, GIS Specialist

Ms. Finks is a broadband planner with Design Nine. Finks has worked on many of Design Nine's broadband planning projects. She is experienced in GIS and CAD software, and a variety of other design, planning, and management tools and approaches, has assisted with network planning and design, cost estimates, and broadband survey analysis. Finks will use mapping and GIS tools to identify future and existing infrastructure, asses current service levels, and map areas of need.



Her work has included:

- Fiber route design and cost estimates for broadband wireless and business fiber designs in fourteen counties in Texas.
- Downtown fiber route design for Wood County, Texas.
- Geo-coding of business and residential survey data for a large broadband survey for a city in Massachusetts.
- Neighborhood demand analysis for a fiber to the home project in Virginia.
- Development of telecom asset maps for public and private infrastructure in St. Croix County in Wisconsin.
- Development of base maps for unserved and underserved areas, telecom assets, existing and planned fiber routes, and key anchor facilities in Berkeley County, West Virginia.



David Sobotta

David Sobotta has extensive technical experience from Fortune 50 companies to startups. He has been with Design Nine since 2012, as a senior broadband analyst. He analyzes geographic data for current networks and their services.

Experience

Sobotta, a former director at Apple, was with the company for twenty years and helped Apple meet many technical and network requirements for OS X use in the federal government.



While at Apple, he helped Apple and NSA sign a cooperative research and development agreement (CRADA) for OS X while championing the inclusion of critical SmartCard technology in OSX.

Sobotta also worked in cooperation with Virginia Tech as a network evangelist for the National LambdaRail, a national-12,000-mile network, which supported tera scale computing grids and was used as a test bed for experimentation with next-generation large-scale networks. He has worked with CIOs of all the national federal labs, NIH, NASA, and two CIOs of the federal government.

Work at Design Nine.

Sobotta's work also involves research on potential network areas and developing plans for sustainable networks. He also analyzes geographic data for current networks and their services. He is involved on a day to day level helping Design Nine maintain the highest level of customer satisfaction.

Experience with Related Projects

While with Design Nine, Sobotta has developed detailed service provider reports with information showing pricing, services offered, and delivery areas by zip code for numerous counties and cities including Taylor, Doddridge, Harrison, Marion, Monongalia, Preston, Grant, and Jefferson Counties in West Virginia along with Clinton, Lycoming, Union, Northumberland, Bedford, Blair, Cambria, Fayette, Fulton, Huntingdon, Somerset and Westmoreland Counties in Pennsylvania. His work has also included reports for Williamstown, Northampton, and Pittsfield in Massachusetts along with Wythe, Franklin, and Gloucester Counties in Virginia and Marathon County in Wisconsin. His most recent work has been with Wood, Harrison, Anderson, Camp Cherokee, Gregg, Henderson, Marion and Rains Counties in Texas plus eighteen counties in the New North Development Region of Wisconsin.

PROJECT SCOPE OF WORK

ASSESSMENT OF COMMUNITY NEEDS AND INTEREST

We use a variety of GIS and mapping tools, including ArcGIS, to develop a comprehensive set of maps and data that illustrate where existing assets are located, where service is available, what services are available, where Internet and data cables leave/enter the area, and a wide variety of related information in both map and tabular form.

To provide the best possible detail on business and residential Internet use, we would recommend conducting an online and paper-based survey. This can provide valuable geo-located data to identify unserved and under-served areas.

In our experience, conducting a residential and business survey is one of the best ways to engage the entire community. Our usual approach is to design an 8 1/2" x 11" mailer with information about the study on one side, and the residential survey on the other side. This is mailed to every household, and residents are invited to fill out the survey online or complete the paper version and return it by mail.

Both the business and residential surveys collect data on current speeds, cost of Internet, uses of the Internet, service providers, and other key information. Our work will also include:

- Map existing public and private broadband infrastructure.
- Map business areas, economic development zones, business and industrial parks, retail/ commercial areas (including core downtown areas of demand).
- Analysis of potential fiber optic network connections.
- Identify potential network routes and interconnection points.
- Analyze vertical assets determine how existing Town property can be utilized and ensure interoperability between existing equipment and proposed new equipment.
- Provide an analysis of how to best leverage identified existing assets.
- We will assess business needs with regards to services required and desired, cost expectations and estimated subscription rate and give special attention to home-based, small and medium-sized businesses.
- We will identify ways to overcome shortcomings in cellular service in the community.
- Compare a needs assessment with current services and identify and characterize shortfalls
- We will hold virtual and in-person meetings with community volunteers, stakeholders, and advocacy groups to obtain their input and feedback.

ASSESSMENT OF NEED COMPARED TO OTHER PROJECTS

Our more than twenty-five years of work helping communities successfully get modern broadband infrastructure uniquely qualifies Design Nine to help Jamestown understand what other communities have done. In our report, we will include discussion of:

- Key success factors that lead to positive outcomes and improved broadband infrastructure.
- Lessons learned from other municipal projects.



- How to put together successful grant proposals.
- Key failure points from other projects, including planning, deployment, and operations failures.
- How other communities have successfully managed this new municipal infrastructure.

We will also assess the potential of collaboration with National Grid, and the potential of working with neighboring communities.

ASSESSMENT OF COMPETITIVE AND OTHER CHALLENGES

Many of our planning studies have led to highly successful municipal infrastructure deployments. We have extensive knowledge and experience with the reactions of incumbents, what kinds of objections are likely to be raised, and how to avoid being blocked by legal challenges. No municipal project that followed our recommendations has ever been blocked or sued by an incumbent provider.

We will also evaluate alternative responses from incumbents, and will assess the environmental, economic, and legal challenges that are specific to Jamestown and Rhode Island.

- We will evaluate the potential impact on retention of existing employers and the attraction of new employers who value high quality broadband access.
- We will provide examples relevant to the Town of Jamestown of other jurisdictions which have seen an increase in entrepreneurial activity due to high speed broadband.
- We will discuss the growth in work from home and business from home and how broadband has become essential to jobs growth in this area.
 - Identify and discuss education, home-based business, and home-based worker technology needs. Make recommendations for addressing short term and long term strategies, with special attention to business attraction and retention.

RECOMMENDATIONS FOR NETWORK DESIGN AND TECHNOLOGIES

Design Nine will perform a technology assessment that includes: backhaul routes, interconnection points, suggested routes, capacity, providers, technical and delivery models, expansion strategies, cost estimates, funding resources, best practices, and other appropriate factors to address barriers at local and regional levels, with an emphasis on unserved and underserved areas.

- Provide a detailed discussion of technology options, advantages, disadvantages, appropriateness for the county, and costs.
- Identify the best technology paths for the county, including both fiber and fixed point wireless technologies.
- Recommend routes and locations of infrastructure, equipment and points of connection.
- Identify high priority business, institutional, health care, and community sites that need improved and more affordable broadband access.
- We will provide a variety of options for achieving last-mile connectivity based on community needs and make certain that our options enhance economic development potential, education, and health care.
- Our network designs are always capable of being scaled for increased data capacity over time. We understand that the proposed network must scale for high take rates and use, and we have the expertise to provide the County with an accurate assessment.
- We will propose one or more network designs for Jamestown that show a fiber backbone, neighborhood distribution plans and other supporting infrastructure
- We will discuss the advantages and disadvantages of deployment strategies such as Fiber to the Premises (FTTP), fixed wireless and alternative technologies that should be considered
- We will discuss the advantages and disadvantages of a mixed deployment strategy for neighborhoods with limited distribution characteristics, e.g., all underground utilities
- We will discuss technology choices in terms of operational costs, flexibility to support tiered services and future viability. Our work will include Active Ethernet optical networks, GPON/ NG-PON optical networks, 5G macro/small cell wireless and fixed wireless (mmWave mesh and/or CBRS).
- We will evaluate the need for any special considerations for providing services to Jamestown's summer population and visitors
- We are very familiar with the OSHEAN backbone and will include an assessment of how to make best use of it in the network design, especially to lower prices and to improve service.
- We will discuss how the proposed network can evolve to increase capacity and incorporate future Internet services and network-based technologies, e.g., driverless vehicles
- We will evaluate how the proposed network can address likely needs and performance shortfalls of incumbent's existing networks and potential for continued hybrid infrastructure deployment, e.g., small cells, Internet of Things, and other emerging technologies.

NETWORK CONSTRUCTION

Design Nine will develop the strategy and concepts for a network design, including detailed cost estimates.

We will outline type(s) of technology; identify rights-of-way, describe network specifications and structural options. Our work will also include preliminary cost estimates for construction of proposed solutions.

Design Nine's work will include:

- Providing total project costs
- Material costs per mile
- Number of household and/or business with potential services
- Estimates of permit fees, pole attachment fees, potential leases and engineering fees
- <section-header>
- Our network designs will include the type of infrastructure (i.e. aerial and/or buried fiber, wireless, hybrid) that best suits the telecommunication needs of the area.
- For the proposed network design(s), we will estimate the cost of construction for:
 - i) Network backbone
 - ii) Neighborhood laterals
 - iii) Residences and businesses
 - iv) Routing, switching and endpoint access technologies
 - v) Network huts or other support structures on Town-owned or controlled parcels
- We will estimate cost differences for aerial, underground, micro-trenched or other installation methods
- We will discuss the benefits/disadvantages of build-once versus construction on subscription.
- We will propose possible strategies to lower initial construction costs.
- We will evaluate how to best use Town-owned parcels as part of the planned infrastructure.

FUNDING RECOMMENDATIONS FOR CONSTRUCTION, EARLY OPERATION

Design Nine always examines the potential partnerships both with private entities and with regional/local governments.

Design Nine has assisted with the assessment of many PPP (Public Private Partnership) opportunities. Our long experience helping our local government clients negotiate agreements with ISPs enables us to provide the County with the information needed to put together an agreement that helps ensure the preferred partner will actually be able to execute and deliver improved broadband services to Town of Jamestown.



Our work will include:

- Provide an evaluation of potential network partners, both local and regional
- Look at service providers whose expansion might be benefit from investments by the Town or regional cooperation.
- Review existing regulatory policies and strategies and make recommendations for improved access.
- Discuss bonding strategies, including recent changes in the bonding climate for municipal broadband projects.
- Detailed analysis of ownership/partnership options, including advantages and disadvantages of each, and considering local, state, and Federal regulatory issues and requirements. We typically start with more than a dozen options and will identify two to three that we believe are a good fit for Town of Jamestown.
- Analysis of business model options available to Town of Jamestown (e.g. triple play retail, dark fiber only, lit network, open access, etc.) with a discussion of the strengths and weaknesses of each model, and a recommendation for what we believe is the best fit.
- Evaluate ownership/partnership models with respect to operation and management of the network and protecting the County's investment over the long term-that is, the ownership model must ensure that County leaders have the appropriate oversight and decision making ability once any network is operational.
- Discuss various options for public, public/private partnership and fully private funding with terms for future Town ownership.
- Discuss consequences of a pure finance arrangement versus a financing and operations partnership.
- We will evaluate a variety of funding methods, including as property assessment, RI/Federal economic development under Broadband funding programs, and other means of long-term funding.
- We will evaluate the potential for revenue from dark fiber leasing.

NETWORK OPERATOR RECOMMENDATIONS

We will evaluate a series of options for operations, and make recommendations based on local needs and local capacity. Our extensive experience leading our municipal clients through funding, network construction, AND operations gives us a unique perspective and understanding of the operations and operator needs of a municipal network.

We strongly believe in the importance of local control of the infrastructure over the long term.

Our work will include:

- Evaluating several operations and operator options that will be a "best fit" for Jamestown.
- Evaluate the potential of working with an existing ISP, incumbents, and private sector network operators.
- Focus on ownership and management plans that achieve sustainability. This will include an analysis of licensing, contractual issues, and contract terms.
- Present partnership options that are a "best fit" for the Town. We will discuss advantages and disadvantages of each option.
- We will explain how voice and video services will "fit" into the network design and the service offerings, and how they can be managed easily and can contribute to the financial success of the network.
- We will recommend a road map and strategic plan for the entire network, and will identify the key factors that will ensure long term success and responsiveness to changing needs.

PROVIDE A TEN YEAR PRO FORMA ANALYSIS

Our ten-year pro forma has been designed specifically to model the unique business characteristics of a community-owned fiber network. We have provided these pro formas to more than forty communities in the past fifteen years, and we are confident that we have the most detailed and comprehensive business analysis available. Our ten year financial pro forma examines both sources of revenue from the network we propose and the detailed operating costs. This tool provides us with the ability to test multiple financing, service and product pricing, capex, and opex scenarios. We will provide a detailed analysis of start-up expenses and capitalization needed for successful implementation.

With it we develop a detailed financial analysis that gives you all of the business and financial information you will need to include with grant proposals.

Our pro forma has been the basis for millions in financial grants and successfully funded networks.



We often will produce a dozen or more "what if" pro formas in the course of a study.

- The pro forma will provide a complete set of service and product pricing recommendations for up to three different market segments (typically residential, business, and government/ institutional). The pro forma will use data collected from the demand aggregation work as input to market and revenue projections.
- We will provide a detailed analysis of start-up expenses and capitalization needed for successful implementation.
- The pro forma will include a detailed analysis and projections of operational costs, including staffing, office expenses, insurance, marketing, legal, equipment warranty costs, outside plant maintenance, network operations costs, emergency repair contract costs, pole attachments fees (if any), and lease costs for fiber and/or facilities.
- A detailed analysis of costs for building a network.
- A detailed explanation of operational costs of a network including staffing and equipment replacement. We will include RI prevailing wage requirements in all cost modeling.
- Multiple revenue and deliverable service options which match governance recommendations.
- Projected revenue based on different approaches to your specific market.
- Minimum take rates required for a successful network.
- Projected revenue based on expected take rates.
- A timeline which takes into account the planning, construction, and testing of your network
- The cost of marketing.

RECOMMENDATIONS / NEXT STEPS

With the policy goals and scope of work outlined in this document and the urgency of creating positive and measurable results, a constant focus on "what's next?" will be very important.

Design Nine will provide a comprehensive Recommendations document and develop a set of "Next Steps" items that will identify short term actionable projects, activities, and strategies that can be implemented quickly.



These next step items will always be aligned in careful coordination with longer term strategies

and comprehensive goals. In our experience, a concurrent effort of continual refinement of longer term objectives and strategies in concert with short term actions and activities provides a valuable feedback loop of information that allows for continuous improvement--creating for the community a national reputation as a technology innovator.

Our work will include:

- A written Recommendations report to Town of Jamestown, and will include ample time to review a draft of the recommendations.
- Our next steps material will be inclusive and specific, and will include estimated costs for each implementation step.
- GIS-based maps and the accompanying shapefiles to the Town.
- Detailed cost estimates of our technical recommendations.
- We will address governance and ownership options and make recommendations on how the Town should manage any broadband infrastructure.
- Recommendations for operations and management of any infrastructure the Town builds and owns.
- Our recommendations will include next steps for Town of Jamestown and detailed measures to help implement the Town's broadband plans in 2022.

CONTINGENCIES

We know of no issues or challenges that may affect our ability to complete the work as described in the RFP.

While in-person meetings still have some limitations, we believe most of the work can be completed using videoconferencing where face to face meetings may still be of concern. We have a complete set of Web-based project management tools to help us keep our clients informed of our work, including a controlled access Web site set up for the project, where we post drafts of materials for review. This Web site is easily accessible for those stakeholders still working from home. We will also rely on email and phone calls to keep all stakeholders informed.

PROJECT EXPERIENCE

SOME OF OUR RECENT ENGAGEMENTS

New Hampshire FastRoads, New Hampshire - We wrote a successful \$7.7 million stimulus grant and built a 150 mile, 20 town open access network. We designed and built the network, and now manage it. It has four providers and is in its 9th year of operation.

American Fork, Utah - Assisted this residential city near Salt Lake City with both a technical design for a citywide Gig fiber network and a financing plan. We proposed financing a full build out using a very modest utility fee.

Sandpoint, Idaho - We have been providing technical and business planning to the City of Sandpoint for more than two years. We helped them implement a very successful dark fiber network that has attracted three competitive ISPs to the City and lowered prices for businesses and residents. We are currently helping Sandpoint plan an expansion of their dark fiber network.

City of Danville, Virginia - Design Nine did the planning study, designed the network, and supervised construction of the network. It is the first municipal open access network in the U.S. It is now in its 12th year and generating enough revenue to return funds to the City and to fund fiber to more homes and businesses.

Bedford, Blair, Cambria, Fayette, Fulton, Huntingdon, Somerset, and Westmoreland Counties, Pennsylvania - Design Nine recently finished a planning study for these eight counties along the southern Pennsylvania border in the Southern Allegheny Planning District. These counties have a broad spectrum of Internet connectivity from FTTH to large under-served areas in some of the counties. Our work has included assessment of current assets, broadband wireless fiber design, potential project identification for grants in each county along with cost estimates, organizational planning and operations recommendations.

Clinton, Northumberland, Lycoming, and Union Counties , Pennsylvania - Design Nine provided market assessment and broadband demand aggregation and a study of telecom service provider coverage areas and gaps in service coverage. Design Nine established and prioritized three key underserved areas within each county and provided recommendations as to the best technologies for priority areas. We provided a model RFP to be used for implementation buildouts in the prioritized areas. Our work also included an overview of ownership options (i.e. public vs private) and the advantages and disadvantages of each one, including a summary of delivery/ maintenance/operations recommendations for each option and an analysis of Public Systems or Public/Private Partnerships.

Pennsylvania, Statewide LDD Study - Completed a fifty-five county study of broadband in Pennsylvania (only Pittsburgh and Philadelphia areas were excluded. Our work included local meetings and travel in the Carbon County area.

Montgomery County, Virginia - Design Nine worked with the County to submit a CARES funding application in fall of 2020. The project extended WideOpen Blacksburg's Fiber network to sixteen homes in a very rural area with challenging terrain. The project took less than seventy-five days from conception to customers being hooked up. Customers were using their Internet during the 2020 holiday season.

Wythe County, Virginia - This county-wide network design outlined the types of potential connectivity solutions including identifying grant eligible areas. The proposed network was designed to serve underserved and unserved residents. Areas of need were determined by using a web-based survey which also utilized a paper survey mailed to every residential household in the county. Results were analyzed for both residential and business locations. Mapping and detailed analysis of available current network speeds and delivery methods were also provided. This included identifying available fiber locations and potential additional service routes along with projected costs associated with creating/extending wireless service points and extension of current wired routes. Potential partners were also identified. Because of funding deadlines, the project was completed in less than sixty days.

Jefferson County, West Virginia – Design Nine recently finished a complete planning study for Jefferson County. The work included very successful residential and business broadband surveys, grant and funding recommendations, technical designs, and cost estimates.

Taylor, Doddridge, Harrison, Marion, Monongalia, and Preston Counties, West Virginia – Design Nine did a planning study for these six rural counties of Region VI in northwestern West Virginia. Work included assessment of current assets, broadband wireless fiber design and cost estimates, and organizational planning and operations recommendations.

Clay, Calhoun, Roane, West Virginia – Completed a three county planning study that included technical designs for county-wide wireless service in each of the three counties. Our work also included detailed cost estimates, a phased roll out approach with schedules for each phase, and recommendations on ownership, governance, public/private partnerships, and operations.

Dakota County, Minnesota – Our work with Dakota County spanned several years and included a feasibility study for a three hundred mile countywide network to serve the ten independent cities in the county plus the County government. That planning work was followed by our development of a complete technical and business plan for the project. The work required extensive interaction with all of the jurisdictions, and led to successful completion of a Joint Powers Agreement for an institutional network.

Bozeman, Montana - Our planning project, which included a technical design and financial plans, was produced in less than six months. It brought Gig fiber to the City of Bozeman, Montana. Our work with the City helped raise the initial \$4 million needed to build the network. We were competitively selected to manage the entire build out, including engineering, construction, procurement, and network configuration and testing. Construction on the network is finished and customers have been using the network since the fall of 2016. Our sister company, WideOpen Networks, also manages this network of over 25 miles of fiber.

WideOpen Blacksburg, Virginia - We did the design and construction of an all fiber Gigabit network in our first phase neighborhoods in Blacksburg, Virginia. Customers are now enjoying the fastest network in southwest Virginia. We also designed an expansion of that network which will pass 8,000 homes with fiber in the next eighteen months. Construction of the expanded network is well underway and the first customers were hooked up to the new fiber in July 2021.

Rockbridge County, Virginia - Design Nine did the planning study, designed the network, and supervised construction. Our work led to a \$10 million dollar Federal grant to build 90 miles of fiber throughout this mountainous county and a \$3 million state of the art data center. We wrote the grant proposal, built the network, and are now managing the network. The network provides fiber access to more than 50 local government and community organizations along with over 125

businesses. Both downtown Lexington and downtown Buena Vista now have Gigabit fiber services to many commercial and retail buildings.

Hampshire County, West Virginia - Recently completed an extensive county-wide planning study that included both broadband wireless and fiber to the home cost studies. Work also included mapping of current assets and evaluation of Capon Bridge FTTP project. The Fiber-optic cable leading to the Capon Bridge Technology Park was lit on October 12, 2018. It is considered the 1st step in bringing better broadband to all of Hampshire County. The project also included mapping of planned county fiber backbone, countywide wireless propagation studies, and data needed for a Federal grant application. Our work included next steps detail, and recommendations for governance, ownership, and management.

Morgan County, West Virginia – Completed an analysis of existing County-owned towers, performed a county-wide propagation study to determine fixed point broadband coverage areas and where towers are needed, provided a complete five tower network design, and included detailed technical specifications. Also provided tower lease pricing and recommendations. We have since assisted the County with upgrades needed for existing towers.

Clay, Calhoun, Roane, West Virginia – Completed a three county planning study that included technical designs for county-wide wireless service in each of the three counties. Our work also included detailed cost estimates, a phased roll out approach with schedules for each phase, and recommendations on ownership, governance, public/private partnerships, and operations.

Isanti County, Minnesota – Completed a fiber and wireless broadband planning study in 2017. Work included a county-wide six tower high performance backhaul and access network, technical architecture, cost estimates, and fiber to the home cost studies.

Richwood, West Virginia – Provided a complete technical design for a fiber to the home and fixed point broadband wireless in and near the City of Richwood. Design Nine is now assisting with the project management and construction of the network.

Middle Peninsula, Virginia - Design Nine evaluated, inventoried, assessed, and documented existing communication systems and technologies within the Middle Peninsula. We also made recommendations for a ubiquitous and standardized Wireless Infrastructure Service Provider (WISP) model.

Franklin County, Virginia -Design Nine did a Community Broadband Master Plan that included a summary of existing service areas and service options. The Plan included maps and information showing where broadband service is currently available, where gaps exist, the level of service available, and the general costs of these services as compared to other areas. We provided professional recommendations and network alternatives that were feasible and achievable for the communities. These recommendations included a preliminary network design.



Design Nine has worked with hundreds of towns, cities, counties, planning districts and states on broadband planning in our twenty-five years of experience. Some of our previous work engagements are listed below.

Dakota County, MN

Keene, NH Roane County, WV Marathon County, WI Clifton Forge, VA Altavista, VA Morgan County, WV Williamson, WV Bozeman, MT Clay County, WV Missoula Public Schools, MT Fayette County, TN Alys Beach, FL Berkshire, MA Cortez, CO Hanover, NH Kansas City, MO Memphis, TN Madison County, ID Person County, NC Port Hardy, BC Rexburg, ID Buena Vista, VA Roanoke, VA Fulton County, PA Prince George County, VA Spokane, WA Santa Cruz, CA Washington County, MD Teton County, ID Amelia County, VA Norton, VA Portsmouth, OH Rindge, NH Oconee County, SC

Pittsfield, MA Northampton, MA Hanover, NH Meeker County, MN Fayette County, WV Jefferson County, WV Danville, VA Mingo County, WV Richwood, WV Yellow Springs, OH Keene, NH Wise County, TX Mississippi County, AR Bedford County, PA Calabasas Village, CA Decatur, IL Fauquier County, VA Los Alamos, NM Newberry, SC DeSoto County, MS Palm Coast, FL Prior Lake, MN Lexington, VA Rockbridge County, VA Salem, VA Huntington County, PA Temple, TX Upper St. Clair, PA Stuart, VA Powhatan County, VA Fremont County, ID Canton, IL Smyth County, VA Blacksburg, VA Enfield, NH Pickens County, SC

Eagan, MN Sandpoint, ID Amherst County, VA Region VI, WV Columbia Basin Broadband, BC PA Statewide Broadband Study Marshall County, MS Tunica County, MS Phillips County, AR Tipton County, TN Dyer County, TN Tate County, MS Haywood County, TN Lee County, AR Accomack County, VA Teton County, WY Crittenden County, AR Marshall County, MS Amarillo, TX Shelby County, TN Salt Lake City, UT Grand Rapids, MI Eureka, CA Carroll County, VA Galax, VA Bremerton, WA Monmouth, IL Bath County, VA Albemarle County, VA Pittsfield, IL Blackstone, VA Camino, CA Anderson County, SC Highlands, NC

REFERENCES

Project Name	Location	Project Type	Client Name	Contact Person	Date of Completion
Marathon County Broadband Feasibility Study	Marathon County, WI	Planning w/ Tower Locations	County of Marathon, Wisconsin	John Robinson, Marathon County Broadband Task Force, Chair, 715 212-2227 Marathon County Courthouse, 500 Forest St. Wausau WI 54403 john.Robinson@co.marath on.wi.us	01/31/2020

Researched and evaluated the current supply of broadband and telecommunications environment and assets, products and services in the County, detailing the location of facilities, types of services, pricing, availability and limitations. Provided an analysis of business and financial models for a proposed network, including discussion of advantages and disadvantages of each.

Project Name	Location	Project Type	Client Name	Contact Person	Date of Completion
Four Towns Network	Florida, Hawley, Monroe, Savoy- towns in western Massachusetts	Owner's Rep for Wireless Network	FMHS Network	Kirby (Lark) Thwing FHMS Broadband Network Committee, Chair, 413-588-6922 15 Pond Road Hawley, MA 01339 kthwingjr@gmail.com	Continuin g

Providing quality assurance and technical oversight for the towns of Hawley, Monroe, Florida, and Savoy. The work includes analysis and review of the ISP technical design, project status and report tracking, ISP liaison, and review of ISP expenditures.

Project Name	Location	Project Type	Client Name	Contact Person	Date of Completion
New North Broadband Study and Expansion Plan	Northeastern Wisconsin	Eighteen County Planning Study	New North Inc.	Barbara Koldos, Vice President Strategic Initiatives, New North, Inc. 920-328-0572 2740 W. Mason Street, BT344 Green Bay, WI 54303 barbara.koldos@thenewnorth. com	12/30/2021

Surveyed broadband needs across all eighteen counties. Created mapping for fiber and broadband internet infrastructure, providers, facilities and other equipment in a format usable by GIS systems. Identified community readiness/barriers to address gaps. Completed Regional Infrastructure Development Plan with recommendations and cost estimates

Project Name	Location	Project Type	Client Name	Contact Person	Date of Completion
ETCOG Consultant Services for Broadband Project 2016	Eastern Texas	Fourteen County Planning Study	East Texas Council of Governments	David A. Cleveland, Executive Director, East Texas Council of Governments (903) 218-6400 3800 Stone Road, Kilgore, TX 75662 david.Cleveland@etcog.org	08/30/2021

Developed GIS-based maps of existing infrastructure, provided market assessment provide best technologies recommendations, provided a technical design for three to five broadband projects per county, recommended a regional strategy, provided an overview of ownership options, Identified operational roles/responsibilities, identified potential funding sources.

Project Name	Location	Project Type	Client Name	Contact Person	Date of Completion
The City of Pittsfield Broadband Feasibility Study	Pittsfield, MA	Fiber Feasibility Study	The City of Pittsfield	Michael Steben, Chief Information Officer, City of Pittsfield (413) 344-3765 70 Allen Street Pittsfield, MA 01201 msteben@cityofpittsfield.org	6/23/20

Design Nine assessed Pittsfield's broadband assets including their existing fiber optics infrastructure. Our work included development of a fiber to the home technical design and cost estimates, including a phased approach to a fiber build out. We also identified potential grant funding and did an analysis of network operating model options. That included evaluating an open access network vs a single ISP network. Our report included bond repayment calculations/ options and examined other funding strategies while providing a cost benefits analysis.

Project Name	Location	Project Type	Client Name	Contact Person	Date of Completion
Jefferson County, WV Broadband Planning Project	Jefferson County, WV	Planning Project	Jefferson County Commission/ EDC	Dennis Jarvis Executive Director (304) 728-3255 1948 Wiltshire Road, Suite #4 Kearneysville, WV 25430 djarvis@jcda.net	6/30/2020

Design Nine finished a complete planning study for Jefferson County in the summer of 2020. The work included very successful residential and business broadband surveys, grant and funding recommendations, technical designs, and cost estimates.

AWARDS



www.bbpmag.com

INSURANCE

Design Nine will meet all of the Town's requirements for insurance.

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TIME SCHEDULE

TIMELINE

We believe that our normal timeline can provide the Town of Jamestown the plans and steps required to move forward with a broadband project that will improve connectivity in the town. Design Nine will collect the needed information, deliver maps, recommendations and agreed-upon reports, and make regular visits to the Town of Jamestown. Coordination from the Town of Jamestown in scheduling our visits helps us reach as many stakeholders as possible.

MONTH 1

- Meetings with the Town staff, stakeholders, and interested parties
- Identify governance and operations options
- Identify and map anchor tenants
- Conduct current asset and infrastructure owner analysis
- Collect and map existing asset data and identify other pertinent assets
- Begin current and future bandwidth needs analysis
- Governance and operations options analysis

MONTH 2

- Additional meetings with the Town staff, stakeholders and interested parties
- Milestone: Delivery of asset maps and study/pilot areas for cost estimates
- Public/private partnership analysis
- Milestone: Delivery of draft business model options
- Milestone: Delivery of provider details and current service offerings and technologies
- Financial analysis, risk assessment, and opportunity assessment
- **Milestone**: Delivery of draft Preliminary Design and technology options
- Milestone: Draft funding strategies options and potential partners
- **Milestone**: Business and financial modeling for fiber systems

MONTH 3-4

- Feedback and revisions to funding strategies
- Legal and regulatory review and recommendations
- Governance and operations recommendation development
- Integration of materials into the Final Report
- Milestone: Draft recommendations and next steps options
- Milestone: Draft final report for review and feedback, including GIS files

PROPOSED COST

	Scope of Work	Estimated time	Cost	Requirements, dependencies, comments or otherinformation
1	Assess needs, interests, concerns	120	\$15,000	See below for cost of business and residential survey mailing.
2	Assess build out requirements and opportunities	85	\$10,625	
3	Assess competition,obstacles and challenges	60	\$7,500	
4	Propose Network topology and technologies	48	\$6,000	
5	Estimate Networkconstruction, infrastructure	55	\$6,875	
6	Funding model(s) for construction, operations, maintenance	40	\$5,000	
7	Candidate operators, support/ maintenance contractors	42	\$5,250	
8	Pro Forma models	75	\$9,375	
	TOTAL COST, EST TIME	525	\$65,625	

Fees will be invoiced in five equal payments of \$13,125, with the first payment due at contract signing and the last payment due only after all final documents and reports have been delivered.

All labor costs, overhead, and other direct expenses, including transportation, housing, and printing are included in the flat fee above.

If the Town of Jamestown chooses to do a business and residential survey as part of the Assessment task, a mailing of the residential survey using the USPS EDDM process (Every Door Direct Mail) can be extremely effective in getting a high response rate. We charge the

Town only the direct cost of the mailing and \$125/100 paper surveys received for the data entry (note that most survey respondents go to the Web site and fill out the form online, for which there is no extra charge).

COMPLIANCE WITH CONTRACTUAL TERMS

Design Nine will fully comply with the Terms and conditions as delineated in this RFP. We will fully complete all Scope of Services items and any modifications required by Town of Jamestown.