

BRINGING HIGH SPEED BROADBAND TO WEST KENNEBEC LAKES REGION



8/19/2020

Matrix Design Group Proposal to WKLCBA

Matrix Design Group's proposal to design, build, maintain and operate a FTTH network at our expense in Fayette and Vienna, ME. A business model based on over 25-years of experience building fiber networks that is designed to minimize tax-payer impact.



August 19, 2020

Western Kennebec Community Broadband Association
Attention: Brian Lippold Casco Bay Advisors

Dear WKLCBA,

Transmittal Letter:

Matrix Design Group is pleased to provide this proposal to Design, Build and Operate a GPON FTTH network for the Towns of Fayette and Vienna.

Matrix Design Group and our sister company Millennium Communications Group were founded over 25-years ago. Both companies are privately held with the same principal owners. Matrix can handle the engineering requirements of any fiber project, including the planning, permitting, design, and project management of the installation of our proposed fiber network on budget and ahead of schedule.

Millennium Communications Group handles the installation and electronics for fiber and technology projects. Combined our two companies can handle the “design” (Matrix) and “build” (Millennium) of any fiber project or as we like to say the ability to take any fiber project “from Concept to Completion.”

During the past 25-years we've done projects such as building the fiber network for Rutgers University, data centers for ADP, network operations centers for Homeland Security and recently two multi-million dollar Smart Grids for Public Service of New Jersey. We have designed and built 10 FTTH Networks for rural New England towns (9 in Vermont and the Town of Leverett in MA) and are in the process of building 6 more (4 in Vermont for Burlington Telecom and the Towns of Petersham and Shrewsbury in Massachusetts). Our top billing customers include AT&T, Level 3 (now part of CenturyLink), and Verizon which also happen to be the three largest Internet providers in the US and they choose to do business with us.

Matrix Design Group designed, built and managed the first nine towns built for EC Fiber in Vermont. We put in place the billing systems and customer service and tech support policies and protocols. After three years of operation we handed over control of the network to a new company, Valley Net, formed for this specific purpose by the EC Fiber cooperative of towns.

Under the Matrix Plan the WKLCBA would be responsible for paying for the utility make-ready costs, a place to house and power the network electronics, and traffic safety details during make-ready. Matrix would design, build and operate the GPON FTTH network at our

expense. Matrix would also give the WKLCBA the option to purchase the network after 3-years.

Due to the nature of the work and for simplification's sake - this proposal is being submitted on behalf of Matrix Design Group. However, included in this submission is also information on Millennium Communications Group so that the WKLCBA Board can better understand the depth of our combined resources and experience.

Matrix Design Group looks forward to working with the WKLCBA to help create a FTTH network that would include the following:

- Matrix Design Group and sister company Millennium Communications would Design, Build and Operate a GPON FTTH network in the Towns of Fayette and Vienna at our expense
- **The Matrix Plan would require no State funds going directly to Matrix. All State or Federal grants would be going to cover the requirements of the WKLCBA.**
- The WKLCBA would have the option to purchase the completed network for **\$3.4 million** after 3-years of operation (**buy-out price based upon 83.5 miles of network build passing 1,176 homes**). The WKLCBA would also have the option to purchase after 20-years for just \$10.
- The WKLCBA would be responsible for make-ready costs, traffic control details during make-ready and place to house and power network electronics.
- On an on-going basis the WKLCBA would be responsible for maintaining the pole attachment surety bond, the yearly utility pole rental fees and power to the network electronics (all of which to be paid for via a fee added to subscriber's monthly bill)
- Matrix would offer residents a Standard High Speed Internet Service (up to 100 Mbps symmetrical) for \$95 / month and an Enhanced High Speed Internet Service (up to 200 Mbps symmetrical) for \$155 / month
- **The WKLCBA would have control over the Standard Internet Tier pricing. The rate of \$95 per month would be locked in for 2-years. Thereafter Matrix would only be able to raise the rates by that's year's CPI (Consumer Price Index) without approval from the WKLCBA.**
- Matrix would offer residents a VoIP line for an additional \$20 / month
- An 802.11 AC WiFi router will be optional for a charge of \$5 / month
- Subscriber would pay a \$400 installation fee (split into two payments) and have a 24-month commitment. If the subscriber also wanted a VoIP line then the installation fee would be \$500 (since we would also be installing a battery back-up unit)

This proposal is designed to minimize or eliminate any tax impact on the citizens of Fayette and Vienna.

Due to our experience Matrix Design Group is uniquely qualified to provide this scope of work for the WKLCBA. No firm better understands the unique problems facing a rural New



England town trying to build a FTTH network. We have gained this real-world experience and understanding from 25-years of building thousands of miles of fiber networks.

We are currently building a FTTH network in Petersham, MA which has been designed by Matrix and which will be built and operated by Matrix under almost the same terms as our offer to the WKLCBA. We highly recommend contacting Petersham to see how they regard their partnership with Matrix Design Group and the benefits it is bringing to their community:

Chip Bull
Chair Petersham Broadband MLP
(978) 724-3339 Home
(978) 413-8089 Cell
chipbull@gmail.com

Matrix Design Group hopes to put our experience to work for the WKLCBA.

Thank you for the opportunity to submit this proposal for consideration.

Sincerely,

Chris Lynch
Director, Business Development



WKLCA Executive Summary

- **Matrix Design Group would design, build, maintain and operate a standards based FTTH network in Fayette and Vienna at our expense. The estimated value of Matrix's investment in this project would be about \$3.5 million.**
- **Matrix would be willing to build in both Fayette and Vienna or just the Town of Fayette alone. We could not build in just Vienna as that would not match the business model.**
- **The proposal is based upon 52 miles of fiber network build passing 748 homes in Fayette and 31.5 miles of fiber network build passing 428 homes in Vienna.**
- **Matrix is proposing this solution with the idea we would be passing all homes in Fayette and Vienna whether the homeowner is taking service or not. However, where we build fiber is dependent upon the Towns providing the right of way. Certain areas may be excluded at each Town's discretion based upon an area being deemed already "served" or based upon cost of "make-ready."**
- **It is estimated that WKLCA's responsibilities (or the Towns) under this plan would cost about \$1.21 million which could be paid for via a roughly \$10 monthly charge added to subscriber's bills. This is based upon a 60% "take-rate" and either the WKLCA or the Towns financing the full amount without any State grant(s) from ConnectME.**
- **Matrix is not constricted by Town borders and could also extend service into neighboring unserved WKLCA areas of towns. We would not be looking to overbuild existing cable infrastructure.**
- **Any State or Federal funds or grants would go directly to WKLCA (or the Towns) to minimize the economic cost and taxpayer impact of this business model.**

- **Matrix would require at least 500 subscribers signing up during a pre-subscription period before beginning construction of the GPON FTTH network (roughly a take-rate of less than 43%)**
- **The WKLCBA (or the Towns) would have the option to purchase the fiber network after three years of operation. That purchase price would come down by a set amount each year for 17-years until after year 20 it would be just \$10.**
- **Matrix would offer residents Standard High Speed Internet Service (up to 100 Mbps symmetrical) for \$95 / month and Enhanced High Speed Internet Service (up to 200 Mbps symmetrical) for \$155 / month**
- **There are no “data caps”**
- **The WKLCBA (or the Towns) would have control over the Standard Internet Tier pricing. The rate of \$95 per month would be locked in for 2-years. Thereafter Matrix would only be able to raise the rates by that year’s CPI (Consumer Price Index) without approval.**
- **Matrix guarantees that our Standard Internet tier will meet or exceed the FCC’s definition of broadband (currently 25 Mbps down and 3 Mbps up) for the life of the agreement. This guarantee means that the residents of Fayette or Vienna would not find themselves “unserved” when it comes to broadband speeds again for at least 20-years or more.**
- **Matrix fully supports Net Neutrality and will not sell subscribers private data to any third party. Nor will we favor one web site over another.**
- **A VoIP (Voice over Internet Protocol) telephone line can be added for just \$20**
- **Based upon past experience of building 10 rural New England Towns – Matrix estimates the time to build the GPON FTTH network for Fayette and Vienna to be between 18-24 months. Because Matrix would be owning and operating the network we would be able to “light up” subscribers as we build. That means subscribers in WKLCBA could start seeing broadband service in as little as 10 months.**

WKLCBA Proposal

Matrix Design Group is pleased to provide this proposal to the WKLCBA. This proposal is for Matrix to Design, Build and Operate a GPON FTTH (fiber to the home) Network at our own expense. The plan is designed to minimize or eliminate any tax impact to the residents of Fayette and Vienna.

The WKLCBA would be responsible for all aspects of the utility pole owners "Make-ready" process including but not limited to pole data survey, utility company pole applications and surety bonds, joint walk-out with utility companies (if needed), actual utility company make-ready work, and traffic control details during make-ready. The WKLCBA would also be responsible for a place to house and power the network electronics.

The proposal is based upon Matrix building 83.5 miles of fiber network passing 1,176 homes.

The first step in the process would be to do a Utility Pole Data Survey which would provide; GPS location, utility pole identification number(s), a cataloging of what is attached to each pole, and a photo identification record of each pole.

Matrix would handle the utility pole data survey and preparing and shepherding the pole attachment applications at a rate of **\$24 per pole**. Matrix would require doing this work to reduce or eliminate any potential delays. It is estimated that combined the Towns of Fayette and Vienna have 2,756 utility poles.

The second step would be to do a route Strand Map.

Matrix would create Route Strand Map on behalf of the Town to help insure pole attachment applications are created in most efficient manner. **Rate \$.08 per foot.**

These two first steps are the necessary first steps in any fiber build.

The estimated total overall cost to the WKLCBA for utility company make-ready work based upon an estimated 2,756 poles would be **\$1,102,400**. (Please note that this figure also includes both the Pole Data Survey and Route Strand Mapping work.)

The WKLCBA would also be responsible for providing a secure area with clean power to house the network electronics. Matrix will assist the WKLCBA with specifications for any bids needed to insure a suitable space. The estimated cost to provide a suitable space for the network electronics is **\$100,000**. The costs could be much less if an area in an existing municipal building is utilized for this purpose.

Once again Matrix Design Group would Design, Build and Operate a GPON FTTH Network at **OUR OWN EXPENSE**. This would include the traffic control details needed during construction.

The cost estimate breakdown for the WKLCBA's expenses for this project would be as follows;

- **\$1,102,400** for utility company pole attachment and make-ready process
- **\$100,000** for place to house and power network electronics

Estimated total of \$1,202,400

Information on how the WKLCBA could pay for this is included in the next section.

Based upon past experience of building 10 rural New England Towns – Matrix estimates the time to complete the GPON FTTH network for the build in Fayette and Vienna to be between 18-24 months. **Because Matrix would be owning and operating the network we would be able to “light up” subscribers as we build. That means subscribers in Town could start seeing broadband service in as little as 10 months.**

The fees for a Standard Aerial Fiber installation of FTTH service to Subscribers during a three (3) month pre-subscription period established by Matrix and agreed to by the WKLCBA shall be **\$400**. The fee could be broken into two payments of **\$200** each. The first could be due while the make-ready work is being done and be fully refundable. The second payment of **\$200** would be due just prior to construction and could be financed over a period of a year by Matrix with payments added to the subscriber's monthly bill. The fee includes a standard fiber drop to home and standard ONT installation. Subscribers signing up during the pre-subscription period shall commit to a 24-month minimum term of service.

If a subscriber wanted a VoIP line the installation fee would be **\$500**. The extra \$100 would go towards the installation of a battery back-up unit rated for 8 hours of battery so that a dial tone would be present even if power is lost.

Matrix would require at least **500 subscribers** signing up during the pre-subscription period before beginning construction of the GPON FTTH network. **That's a take-rate of about 43% of the homes in Fayette and Vienna.**

It is expected that the Matrix plan will serve between 96% to 100% of the residents of Fayette and Vienna.

Subscribers requesting service after the three (3) month pre-subscription period **or who do not wish to commit to a 24-month minimum term of service** shall pay a **\$1500** fee for a Standard Fiber Installation (includes fiber Drop to home, ONT and installation).

The WKLCBA would have the option to purchase the completed network for an agreed upon amount after the third year of operation. Based on the estimated 83.5 miles of network and 1,176 homes - the buy-out amount should be approximately **\$3.4 million**. After



that third anniversary the purchase price would then decrease by **\$198,480** each year thereafter. After 20-years the buy-out amount would be **\$10**.

If the WKLCBA does not exercise the option to purchase after 20-years then the assets of the network would revert permanently to Matrix Design Group. The WKLCBA is under no obligation to exercise this option to purchase.

The agreement agreed to between the Town of Petersham and Matrix Design Group has been vetted and approved to be in according with Mass General Law by the following law firms:

- Koppleman & Paige on behalf of the Town of Petersham
- Sidney Sayovitz of Schenck, Price, Smith & King, LLP. (http://www.spsk.com/our-attorneys/Sidney_Sayovitz/).

This agreement would be the model for any agreement with the WKLCBA and has been included in this proposal.

The Matrix Plan has also been reviewed by Goulet, Salvidio & Associates, P.C. Certified Public Accountants (perhaps the leading CPA firm for Municipal Lighting Plants in Massachusetts). They conclude that the Matrix Plan under accepted accounting standards would be accounted as a Capital Lease (see attached letter).

As far as the subscribers - there are two (2) residential service tiers:

Standard Internet: Up to 100 Mbps Internet connection for \$95/month.

Enhanced Internet: Up to 200 Mbps Internet connection for \$155/month.

Matrix Design Group would be able to offer custom dedicated services ranging from 100 Mbps Symmetrical to 10 Gbps Symmetrical to subscribers wishing such **dedicated bandwidth** offerings.

Matrix Design Group will also offer a Disadvantaged Student tier of 25 Mbps for \$45 per month for any family with a student who is income eligible under the National School Lunch Program.

Matrix Design Group will lock in all rates for a period of two years. Thereafter, Matrix will agree to limit any future price increases to the Standard Internet Tier to that year's CPI (Consumer Price Index) increase set by the US Department of Labor and Statistics. Any price increase above the CPI for the Standard Internet Tier would have to be approved by the WKLCBA.

Internet and VoIP: A VoIP line will allow for unlimited local and long distance calling (all United States and Canada). The VoIP service will come with standard features including but not limited



to Caller ID, Call Waiting, 3-Way Calling, etc. Cost to add a VoIP line would be **\$20/month**. A second VoIP line may be ordered for an additional \$20/month.

Subscribers at time of installation may opt for a Calix GigaCenter 844E 802.11 AC WiFi Router for an additional equipment charge of **\$5/month**.

Pricing does not include any applicable taxes or Municipal fee. The Municipal fee would be used to pay for the yearly pole rentals, surety bonds and miscellaneous Municipal expenses. The Municipal Fee could also be used for loan or Bond repayment. The Municipal fee would be set by the WKLCBA.

General Subscriber Terms and Conditions: The following are partial general Terms and Conditions of Use for Residential Broadband Service:

- Two year agreement required if customer signs up during three-month pre-subscription period.
- An adult 18 years of age or older must be present during the installation of services.
- Price applies to base monthly rate only; excludes optional services and installation charges.
- Customer will be responsible for the installation of necessary conduit if none is available.
- Payments 30 days past due will result in termination of service. A reconnection fee of \$10.00 will be charged for any service disconnected due to non-payment.
- Pets must be restrained or otherwise kept away from the installer(s) until work is complete.
- Electronic equipment is and shall remain property of Matrix.
- Failure to allow for equipment removal upon termination of services, or damaged equipment, shall result in a \$500.00 fee.
- Internet service and fees will be billed on a monthly basis.
- Except for the ONT, battery back-up unit (if applicable) and service drop, the Customer is responsible, at its expense, for the installation, maintenance and repair of all equipment and wiring on the Customer's premises to the point of connection, as specified by Matrix.

Subscriber Comparative Costs

The average household in Fayette and Vienna today may have monthly communications and entertainment bills (not including cell) of roughly:

- **\$85** for combined DSL and landline charges
- **\$140** for DirecTV or Dish satellite service

That's a total of **\$225 per month**

Under the Matrix Plan the average household in Fayette and Vienna could have monthly communications and entertainment bills (not including cell) of roughly:

- **\$130** for combined 100 Mbps Symmetrical Internet and VoIP line charges
- **\$26** for Netflix and the Disney+ package (Disney+, Hulu, and ESPN+)

That's a total of **\$156 per month or a potential savings of roughly \$828 per year** for the average home in Fayette and Vienna.

The **\$130** in Matrix related charges include the following:

- **\$95** for 100 Mbps Internet
- **\$5** for Municipal Fee (estimated up for simplicity)
- **\$10** for Loan or Bond Repayment
- **\$20** for VoIP line

Please note that Matrix has no relationship with Netflix or Disney+ and is using that package purely for illustrative purposes. Other popular video packages include:

- YouTube TV
- Amazon Prime
- Sling TV
- HBO Max

Miscellaneous:

The Matrix proposal is based upon using existing utility pole routes. No underground served areas are included in the plan. If new utility poles were installed those poles would be paid for by and remain the property of the WKLCBA. Any work done on underground facilities by Matrix would be done at a mutually agreed cost.

House drops would be 300' from the road either aerially or via useable customer owned conduit. Drops longer than 300' may have additional charges.

All physical assets of the GPON FTTH network would be placed into a new LLC to facilitate transfer of ownership if the Town decides to exercise their option to purchase the network.

How WKLCBA Could Finance Their Part

The estimated total overall cost to the WKLCBA for utility company make-ready work based upon a combined estimated 2,756 poles in the Towns of Fayette and Vienna would be **\$1,102,400**. (Please note that this figure also includes both the Pole Data Survey and Route Strand Mapping work. The 2,756 pole estimate was based upon 83.5 miles of road with an average of 33 poles per mile.)

The WKLCBA would also be responsible for providing a secure area with clean power to house the network electronics. Matrix will assist the WKLCBA with specifications for any bids needed to insure a suitable space. The estimated cost to provide a suitable space for the network electronics is **\$100,000**. The costs could be much less if an area in an existing municipal building is utilized for this purpose. Please note we would only need one such structure to serve both Fayette and Vienna.

Once again Matrix Design Group would Design, Build and Operate a GPON FTTH Network at OUR OWN EXPENSE. This would include the traffic control details needed during construction.

The cost estimate breakdown for the WKLCBA's expenses for this project would be as follows;

- **\$1,102,400** for utility company pole attachment and make-ready process
- **\$100,000** for place to house and power network electronics

Estimated total of \$1,202,400

The first step in the process would be to do a Utility Pole Data Survey which would provide; GPS location, utility pole identification number(s), a cataloging of what is attached to each pole, and a photo identification record of each pole.

Matrix would handle the utility pole data survey and preparing and shepherding the pole attachment applications at a rate of **\$24 per pole**. Matrix would require doing this work to reduce or eliminate any potential delays. It is estimated that the Towns combined have 2,756 utility poles.

The second step would be to do a Route Strand Map.

Matrix would create a Route Strand Map on behalf of the WKLCBA to help insure pole attachment applications are created in most efficient manner. **Rate \$.08 per foot**.

These two first steps are necessary in any fiber build prior to submitting the utility pole attachment applications.

Please note that the total overall cost for this projected fiber build would be about \$4.7 million with Matrix Design Group being responsible for about 74% of that total. That 74% could be utilized to satisfy any State or Federal “matching funds” requirements in most grant applications.

It is not for Matrix to suggest the proper way for the WKLCBA to finance their responsibilities under this proposal, however, if the WKLCBA were to borrow or do a Bond then a \$10 charge to subscribers should be able to cover the cost of the Bond without having to raise taxes and only broadband subscribers would be paying with non-subscribers having zero financial impact.

If the WKLCBA did a 20-year Bond at a 3.5% interest rate and Matrix Design Group added a \$10 “Bond Charge” to each monthly bill then 706 subscribers could cover the note. That’s a take-rate of about 60% (706 out of 1,176). If there’s a higher take-rate then the note could potentially be retired early. If the WKLCBA received a ConnectME grant then the amount added to the subscriber’s monthly bill could be substantially less.

A few notes on the above:

- **It assumes the full estimated amount of \$1,202,400 would be borrowed. The actual amount borrowed may be less due to engineering efficiencies, the use of Town Capital Projects Fund, Capital Reserve Fund, or any Town “rainy day” funds.**
- **It should be noted that there’s a difference between a home passed and a subscriber as a home could have more than one subscriber (home business, apartments, etc.). We based our numbers on 1,176 homes but the number of potential subscribers could be much higher.**
- **The Town of Petersham, MA which is similar to the West Kennebec Lakes region in demographics and where we are currently building currently has a take-rate of 82%.**
- **According to General Accounting Standards the proposed Matrix Design Group plan would count as a Capital Lease to the WKLCBA (see attached letter from Goulet, Salvidio, & Associates)**

**GOULET, SALVIDIO
& ASSOCIATES, P.C.**

CERTIFIED PUBLIC ACCOUNTANTS

January 2, 2018

Mr. Chip Bull, Chairman
Petersham Broadband MLP
2 South Main St
PO Box 486
Petersham, MA 01366

As requested we have reviewed the Matrix Design Group Contact.

It is our position that this contract represents a purchase of equipment that under the current accounting standards should be accounted for as a Capital Lease (ASU 842-10).

Specifics are as follows:

If the lease meets one or more of the following criteria it is accounted for as capital lease

1. Lease term is 75% or more of the estimated economic life of the underlying asset
2. Present value of the lease payments equals or exceeds 90% or more of the fair value of the underlying assets
3. Transfer of ownership to the lessee
4. Lease contains a bargain purchase option

Although the lease Accounting standards are changing effective for 2018 those changes are making it much harder to record leases as operating leases and are advocating for all leases to be recorded as Capital leases, therefore we don't anticipate the new rules to effect Petersham Broadband MLP.

Regards,



Tracy Vaughan, CPA

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