Good Evening.

Springs-Net, as many of you know, is an ad-hoc, volunteer citizens group. Our goal is the same as the Council's goal: to **"Develop and implement a plan to build a municipally owned fiber optic network that will support all Yellow Springs citizens and encourage economic development."** For nearly the past year members of Springs-net have been hard at work studying the issues, researching details of solutions, and meeting 2X per month to process our work. My name is Scott Fife, and I am pleased to be here on behalf of Springs-Net to present to you:

- our findings
- a suggested solution, along with a funding plan,
- to lay out the next steps for making this goal a reality.

By necessity, this is a high level summary of the group's work, which is more accurately detailed in the 22 page white paper you received last week, and to which I will be referring frequently. In addition, all of the financial scenarios, calculations, and methods included in these slides reside in a detailed spreadsheet we will be sharing with you.

Economic Development – 21st Century Infrastructure

Businesses are demanding more bandwidth

- Attract, retain and expand business
- Home-based workers
- Telemedicine
- Telepresence (video conferencing)

Affordable fiber give businesses a unique advantage

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YS COMMUNITY FIBER MUNICIPAL BROADBAND NETWORK

The connection between economic development and infrastructure is undeniable. Businesses of all types and sizes require ever more bandwidth as applications like telepresence become commonplace.

Census data from 2010 indicate that 10.6% of the overall village workforce, an estimated 195 citizens, were home based workers--a 35% increase in ten years. In engineering, science, and computer based occupations, however, the number of home-based workers in Yellow Springs was up 69% over the same period. This trend is expected to continue.

Telecommunications capacity is no longer a luxury, or "nice to have," it has become an **essential** condition for business--like electricity or water.

But Our Current Situation Is…

- Existing copper infrastructure outdated and severely limited
- Small market = low priority for modernization by AT&T and Time Warner
- Surveys reveal substantial community support
- Internet of Things is coming – 4K Smart TVs, thermostats, etc.

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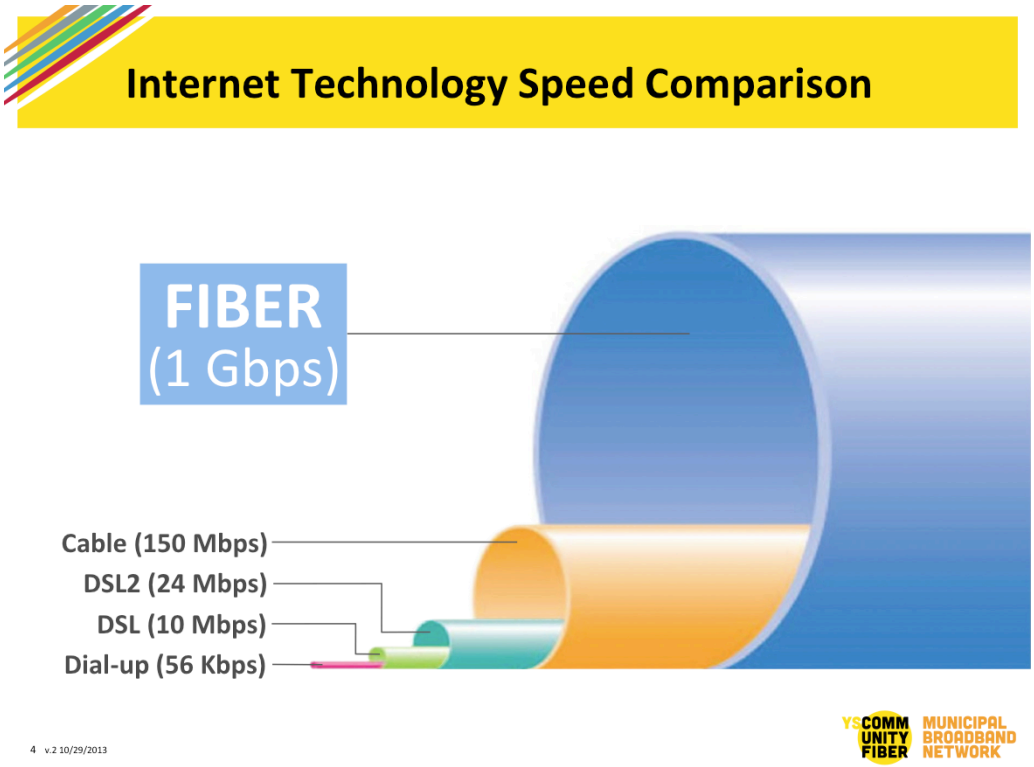
The Telecommunications infrastructure in the Village is predominantly either copper wire (from the first half of the 20th Century) or coaxial cable (from the second half), almost all of which predates the Internet, and was built based on a profit motive. And, while advances in technology have led to skyrocketing demand for bandwidth, the relatively static area and population of the village naturally limit the number of customers and with it the incentive for AT&T and Time Warner to modernize the infrastructure. Meanwhile the number of Internet connected devices, currently about 5.7 per household, will double by the year 2020. All of this supports the idea that today's telecommunications infrastructure is both an individual and a community need, worthy of a community utility to supply it.

The recent survey conducted by Springs-Net (see white paper, p.16) showed significant dissatisfaction with the overall value of current service, including speed, reliability, quality, and customer service. It also indicated substantial community support for a publicly owned alternatative.

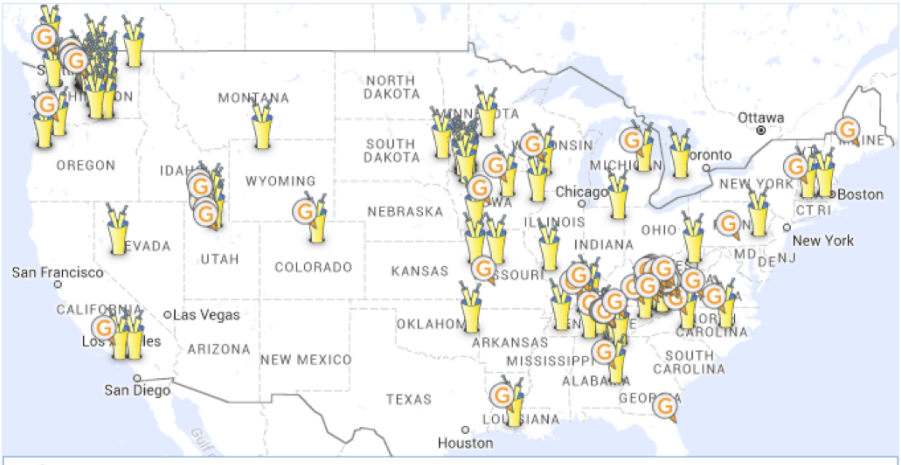


This graphic illustrates the bandwidth capacities of common communications networks, from dial-up to Fiber optic. Beyond the obvious capacity difference, Fiber Optic cable offers additional advantages:

- extremely reliable -- carries no electricity -- not vulnerable to lightning or water -- no static -- no corrosion or cracking
- environmentally friendly -- lower carbon footprint
- electronically upgradeable as technology evolves, and therefore
- State of the art for decades to come

Municipal Fiber Networks Serving Businesses and Homes

83 communities with a publicly owned fiber network reaching most or all of the community.



Over 50 communities in 19 states with a publicly owned network offering at least 1 Gigabit services.

5 Source: http://www.muninetworks.org/communitymap Oct 2015

While many municipalities have some fiber optic resources, only 83 communities in the US have a publicly owned fiber optic network reaching most or all of their homes and businesses. Only 50 of these offer service with a speed of 1 Gigabit or faster.

Springs-Net is proposing that Yellow Springs become the first “Gigabit Fiber to the Premises” community in Ohio--capable of reaching every address in the village.

Monthly Residential Cost/Value Comparison

Provider	Technology	Speed	Average Cost	Notes
AT&T (land line)	DSL	4-20 Mbps	$40	primary phone service
Time Warner	Cable	25-50 Mbps	$60	primary cable service
Springs-Net	Fiber	100 Mbps	$40	Up to 25X faster than existing, 20% cheaper, better quality
Springs-Net	Fiber	1000 Mbps (1 Gbps or Gig)	$80	Up to 250X faster than existing, unavailable in YS limits

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The blue shaded rows in this table show current levels of service and average costs for telecommunications by the two major providers (TW, AT&T) in Yellow Springs. Compare these with estimated levels of service and suggested pricing for a community owned fiber optic network, shown in orange. (Suggested pricing is based on assumptions detailed in the white paper on p.p. 9-10).

The bottom line is that we could expect exponentially faster speed and better quality at a fraction of the current price. This proposal would benefit the entire community, would pay for itself, and would keep costs affordable.

First Year Estimated Expenses

INSTALLATION	
Project Engineering	$150,000
Outside Plant	$773,789
Premise Drop Costs (70% aerial, 30% underground estimated ratio)	$647,100
Service Installation	$212,500
Optical Connections (ONT, OLT & Patch at Premises/Data Center)	$643,320
Network Management + Marketing	$35,570
ANNUAL RECURRING	
Support (2 fulltime @$55K and $30K plus benefits)	$131,255
Emergency and Recurring Support (infrastructure)	$15,000
After-hours Support (remote support w/answering service)	$600
Data Center	$1,200
Bandwidth (1 Gbps at 50% subscription rate for 1 Year)	$36,000
First Year Total	**$2,646,334**

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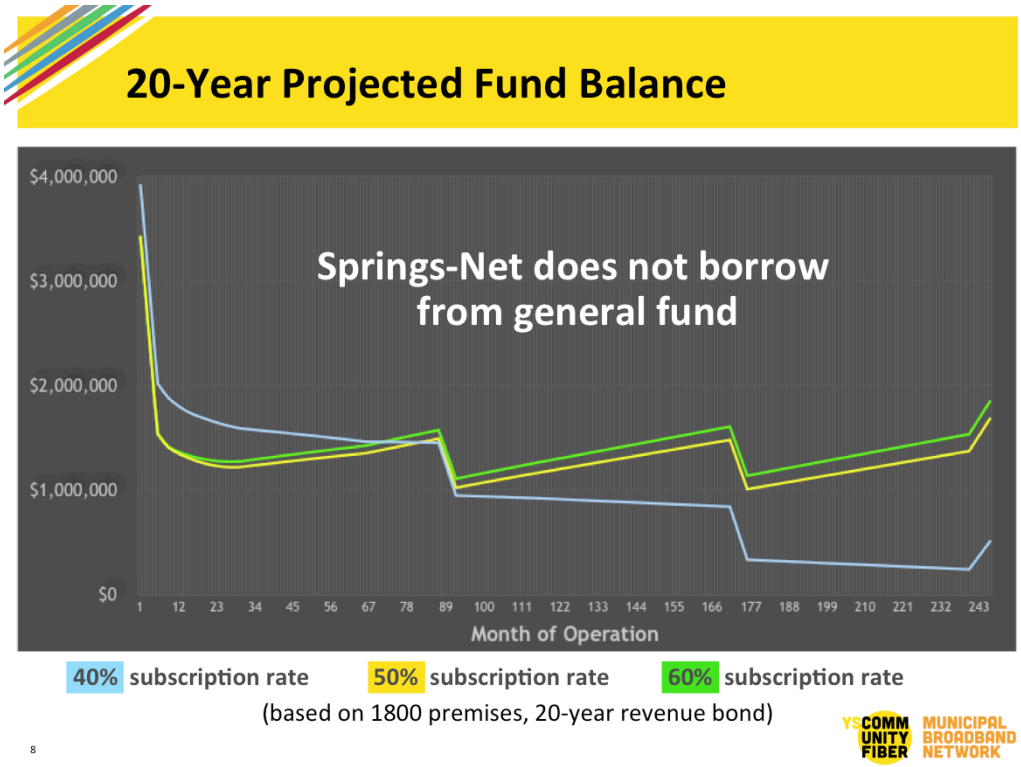
Time does not permit drilling into these numbers tonight, but we wanted to share our conservative estimates for year one expenditures, which includes all construction, equipment, and operational costs, at total we think will surprise many. We have worked through multiple corresponding revenue models and are excited to share those with you in a working session.



This graph illustrates the projected fund balance under our proposal using three different subscription rates (also known as the "take" rate) -- 40%, 50%, and 60% . Of the 83 municipal networks shown previously, the average subscription rate is 55%, and our survey suggests we could expect an even higher percentage. This demonstrates the Springs-Net proposed solution pays for itself in twenty years or less, even under pessimistic subscription levels.

We are anxious to share the assumptions and details behind this graph (reproduced from the white paper) with Council in the near future.

Why Springs-Net is an Awesome Idea

- Consistent with Village history of self-determination
- Small and manageable footprint = technical advantage
- Rights of way and existing infrastructure already in place
- Billing mechanism in place
- Lifeline Program participants will get more bandwidth
- Local data center like MVECA puts us light years ahead of where others have started

Yellow Springs is ideally positioned for municipal fiber

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YS COMMUNITY FIBER MUNICIPAL BROADBAND NETWORK

There are a number of reasons we believe this is a great idea. This slide highlights some of the more important ones.

- Consistent not only with village history and sense of community, but it also acknowledges telecommunications as a public utility
- While our small area and static population suggest we are unlikely to see solutions from the private sector, those same factors also mean that planning and building a network will be simpler and less expensive
- We own the poles, we own the trucks with buckets, rights of way are already established, and the Village already bills residences for electricity, water, and sewer
- **MVECA**, a not for profit public agency, maintains a wealth of critical **public** resources, including expertise, experience, and high volume "purchasing power" for bandwidth. MVECA already provides internet connectivity to local governments, higher education, non-profit organizations, and more than 65,000 K-12 students in an eight county region. Right here in Yellow Springs. Springs-Net's proposal takes advantage of this important resource
- Potential small business opportunities related to implementation and ongoing support
- Village ownership of the system means:

  - valuable asset

Next Steps for Council Consideration

- Council work session to review details of Springs-Net proposal and answer questions
- Initiate marketing study to solidify our preliminary estimates for subscription rates
- Develop an RFP to initiate an engineering study to verify preliminary cost estimates

This fiber network could be up and running in 2017

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The Springs-Net committee believes that this proposal is technically and economically sound, consistent with Village practices, and that it has strong support from the community. At the same time, we recognize that there is more work to be done. We therefore respectfully request that Council:

- Schedule a work session for more detailed discussion of the white paper and proposal
- Authorize an RFP to initiate an engineering study to verify preliminary cost estimates
- Consider a marketing study to solidify preliminary estimates for subscription rates

- The members of the Springs-Net committee are listed on page 1 of the white paper, and are all present tonight. If members of Council have any questions, we would be happy to address them

- We also encourage members of the community to visit the Springs-Net website (shown here) where there is a wealth of information, including video of the Fiber Forum speakers, background information, the white paper, and a discussion forum. We have a Facebook page as well

- We thank you for this opportunity, and we look forward to a more detailed discussion in the near future