

RESOLUTION NO. 2019-_____

Establishing a partnership with Netwurx Internet, LLC to provide Broadband infrastructure and services to underserved areas of Jefferson County

Executive Summary

Broadband is often cited as the infrastructure of the future. Attracting new businesses, education access, residential appeal and quality of life will be impacted by the availability of a community's broadband service. Jefferson County has parts of the County that are underserved in broadband capabilities. This has been identified as a priority in numerous ways, but most recently through the County's strategic plan. To date, the County has been designated as a Broadband Forward Community by the Wisconsin Public Service Commission and created a Broadband Working Group. Further, the County has set aside funds in the 2019 budget to provide matching dollars towards the development of broadband infrastructure, including technical assistance.

Netwurx Internet, LLC has expressed an interest in developing broadband infrastructure in Jefferson County and has requested to partner with the County in applying for state grant funds to assist with broadband infrastructure development. Netwurx Internet currently has a presence in our County to include sponsorship of the Fair Park, as well as assisting the Town of Watertown in its grant process with the Public Service Commission. In coordination with the Broadband Working Group, Netwurx Internet has developed a plan for phase 1 of its project which will provide broadband service to residential, agri-business and other businesses in Jefferson County this year. This resolution authorizes Netwurx Internet to start phase 1 of this project which will be a test project with the goal of providing broadband service to approximately 257 residential properties, 13 agri-business, 68 other businesses, 2 multi dwelling units and 2 county facilities. The County's portion of the project is anticipated to be \$45,610 with Netwurx Internet contributing \$30,408. The Broadband Working Group considered this resolution at its meeting on April 11, 2019, and recommended forwarding to the County Board for approval.

The Broadband Working Group will continue to develop a phased plan to provide additional coverage across the county, specifically geared towards a 2019 summer grant cycle. These efforts will include working to develop additional partnerships to include working with Dodge County and UW-Whitewater.

WHEREAS, the Executive Summary is incorporated into this resolution, and

WHEREAS, the County's Strategic Plan has identified broadband as being a key infrastructure for Jefferson County, necessary for the County to be competitive, and

WHEREAS, the County recognizes working with partners is needed to provide this service to underserved areas of the County that may not otherwise receive reliable service, and

WHEREAS, initiating this project will make the County more competitive for future grant opportunities, and

WHEREAS, the Broadband Working Group supports the partnership with Netwurx Internet, LLC and Phase 1 of this project.

NOW, THEREFORE, BE IT RESOLVED that the County Board authorizes the County Administrator to enter into a partnership agreement with Netwurx Internet, LLC for phase 1 of the project to develop broadband infrastructure in Jefferson County.

BE IT FURTHER RESOLVED that Jefferson County will continue to seek partners to continue the development of broadband infrastructure in Jefferson County.

Fiscal Note: Costs associated with this partnership will be \$45,610. Funds have been included in the 2019 budget as a contingency line item to implement the strategic plan, account number 11002.599908.

Ayes _____ Noes _____ Abstain _____ Absent _____ Vacant _____

Referred By
Broadband Working Group

04-16-2019

REVIEWED: County Administrator: _____; Corporation Counsel: _____; Finance Director: _____

JefCo and Netwurx Roadmap 2019 R4

Author: Ken Baehler

Start Date: 03/1/2019

Purpose:

The purpose of this document is to define for Ben Wehmeier and appropriate Jefferson County government personnel the approach and roadmap to provide broadband, otherwise known as high speed internet, to different segments of the population. It is of critical significance to ensure that the analysis, development and execution of this plan results in success that can be documented, communicated, reported and most importantly realized by both individuals and businesses. For this reason, it is highly recommended that multiple projects are started in parallel and completed in this fiscal and calendar year of 2019. The main reason for this plan of action, is that Jefferson County has already made funds available with the necessity to experience results of the funds. It is important to note here that Netwurx is already in the process of executing the success of work in Jefferson County with the Town of Watertown in which many hours were spent is developing and submitting an application to the PSC of Wisconsin for the Broadband Expansion Grant project. This resulted in a grant being awarded on October 8th, 2018 for the year 2019. While the opportunity exists to submit another application, phase 2, that can piggy back off of the Town of Watertown grant and will affect more parts of Jefferson County, the results would not be realized until sometime in 2020-2021. For this reason, it is clearly understood another solution needs to be underway with results before this time.

For this reason, Ken Baehler of Netwurx has developed this roadmap based on a conversation with Ben Wehmeier and Dave Roller. It should be understood that there will be more conversations and meetings as work groups are assembled regarding this roadmap that may result in changes to this document. Update: Conversations will take place on April 11th, 2019.

Goal:

The goal of this document is to define the how's, when's and where's.

This should result in both Jefferson County and Netwurx fully understanding their roles, obligations, projects, projected results and actual results.

Resulting in success with individual and business experiencing all the advantages realized by urban areas that have access to broadband / high speed internet.

It should be understood by all that this is an initial roadmap.

After this document is reviewed and discussed, there may be revisions.

Tools & Analysis:

The list of tools and analysis are in chronological order of process:

- Jeff Luser (and team) Netwurx Tower Analysis process
- Dave Roller (and team) Engineering, Building, Network, Middle Mile, Last Mile
- Ken Baehler – Project Management / Process Improvement & Engineering
- Ken Baehler – PSC Broadband Expansion Grant application experience
- Ben Wehmeier – Jefferson County Administrator
- Dave Roller (and team) – Results (Netwurx is in the process of implementing a complex/comprehensive software solution to aid in this)
- Other

Multipronged Approach:

In order to meet the targeted strategies laid out in this roadmap, it clearly leads one with deductive reasoning that multiple projects need to be defined and implemented in parallel.

The first project named JefCo1, is going to be an effort involving both Jefferson County and Netwurx. The formal or legal definition will be discussed and agreed upon. For example, the Town of Watertown and Netwurx worked as a Joint Venture with the PSC Broadband Expansion Grant project. This project will actually consist of two projects. One project will focus on a residential area that is unserved and at least significantly underserved as defined by the PSC of Wisconsin. The second project will focus on an area of commerce. An area heavily populated with businesses that may or may not be defined as unserved or underserved but could benefit from a competitive internet market or to have a secondary option for DR/BCP [Disaster Recovery / Business Continuity Planning].

The second project named Town of Watertown PSC Phase 2 is self-explanatory. The most significant change to the original roadmap for this project is that the new relationship with Jefferson County should result in expansion and assistance from multiple villages and towns in providing the basic information and support to enhance the application being developed by Ken Baehler to be submitted by late June of 2019 for the year 2020. Update, the project below may take the place of this project.

A third project named Jefferson County PSC Phase 1 is based off of the first project JefCo1. That being said, the application can still reference the future scope of the Town of Watertown grant. This will help in the screening panel rank the application higher. Also note, the PSC allows for multiple applications. Once the size and scope of the solutions selected for the PSC grant application as been determined, Ken Baehler will provide his opinion based on experience, as to the best method to use in developing an application or multiple applications. This will be based off of analysis of both winning and losing applications since 2014 and applicable experience in the grant process. If at all possible, the application for the year 2020 will be submitted in mid to late June this year 2019. Last year the final submission date was July 16th at 4:00pm. If the application results in the grant being awarded, the order is usually given in October of the application due date year meaning 2019. This means the first work done could start in mid to late Q4 of 2019 and any trenching, digging or major builds may be held off until spring of 2020.

Prong 1 JefCo1:

Description: As defined above, this project will use the funding made available in the Jefferson County budget for broadband for the year 2019. This project will address two distinct types of population. The first focuses on unserved or underserved residential locations while the second focuses on a commerce centered area.

Residentially Focused: The analysis performed was to determine what area has a large number of the population that are either unserved or underserved. An area where current infrastructure can be expanded ensuring the most efficient use of the funds available while providing the largest impact. Another critical analysis point utilized in this stringent vetting and selection process was future scope. This to ensure this current project will result in future expansion costs being efficient due to careful consideration of the infrastructure being implemented.

Build One: Hebron 1 (HBRN1)

Tower located at: Just west of Hwy D Between Hwy Y and Hagedorn Rd at 42.971289° - 88.691131°

Service Radius: Six (6) Miles

The following towns and outlying areas will be serviced with this build.

Hebron, Helenville, Rome and Jefferson to name a few

Tower Analysis indicates the following:

- 151 Residential properties can initially be served
- 22 Ag businesses can initially be served
- 4 Businesses can initially be served

Commerce Focused: The analysis performed was to determine what area near the residential focused analysis could benefit with broadband, result is a positive economic impact, provide for efficient distribution of broadband and allow for both load balancing in this area of the network. While we feel it is important to ensure consistent internet to be provided to residential areas even in high usage times, it is of critical importance to ensure businesses do not experience inconsistent internet. For this reason, critical analysis was completed to select this area along with the residential expansion to ensure consistency. This portion of the project will work in concert with the required backhauls need in delivering the internet both to the residence/business and back out. Last but not least this build will provide another angle of attack to reach both the Hebron and Oakland builds.

Build Two: Jefferson Water Tower (JEF5)

This build focuses on the city of Jefferson and the immediate surrounding rural area

Service Radius: **We are limiting this to 2 miles**

Tower located at: South end of Jefferson, just east of Hwy 26 by Walmart at 42.986179° - 88.810251°

Tower Analysis indicates the following:

- 106 Residential properties can initially be served
- 2 MDU residential properties can initially be served
- 6 Ag businesses can initially be served
- 64 Businesses can initially be served

Backhauls:

In a telecommunications system, a backhaul is the portion that connects the backbone and the edge networks.

A Fixed Wireless backhaul is the use of wireless communications systems to get data from an end user to a node in a major network. The term can also refer to the transmission of network data over an alternative wireless route when the normal route is unavailable or overtaxed. The most common method of wireless backhaul involves microwave systems.

For this project we designed the solution to include two (2) backhauls. This not only ensures the ability to move a significant amount of bandwidth for the two builds defined above but is also scalable for future projects keeping future project costs as low as possible. These backhauls also ensure stability throughout the entire infrastructure to ensure all customers in Jefferson County experience a stable and consistent experience.

Backhaul A: Fort Atkinson 4 (FTA4)

Backhaul B: Jefferson 4 (JEF4)

Project / Economic Impact

Healthcare

Students

Work from home

Property Values

Forecasted Project Cost:

Hardware:	\$42,917.38
Professional Services:	\$ 9,100.00
Labor:	\$24,000.00
Total:	\$76,017.38
Jefferson County Funds	\$45,610.00
<i>Netwurx In-Kind & Cash</i>	<i>\$30,407.38</i>

*Forecasted Homes:	257 plus two (2) MDU's or Multiple Dwelling Units
*Future Forecasted OKLN1	79 totaling 336

*Forecasted Ag Businesses:	28
*Future Forecasted OKLN1	7 totaling 35

*Forecasted Businesses:	68
*Future Forecasted OKLN1	4 totaling 72

Actual Project Cost

*Forecasted shows the number of customers covered, it does not define the number of customers that elect to use the service provided.

Prong 2 ToW PSC Phase 2: TBD- Work in Progress

Special Notes:

No movement on ToW as no funds are available.

Possibly a hybrid fiber / fixed wireless solution may assist populations in terrain with the river, hills and trees

Beggan Lane, Circle Drive, Donald Lane, East Gate Drive, River Road and Rock River Paradise area.

Possible – Grain Leg C&A Lands LCC Beggan Lane

Description

Project / Economic Impact

Forecasted Project Cost

Forecasted Homes

Forecasted Businesses

Actual Project Cost

Actual Homes

Actual Businesses

Prong 3 JefCo PSC Phase 1: TBD- Work in Progress

Residentially Focused: The analysis performed was to determine what area has a large number of the population that are either unserved or underserved. An area where current infrastructure can be expanded ensuring the most efficient use of the funds available while providing the largest impact. Another critical analysis point utilized in this stringent vetting and selection process was future scope. This to ensure this current project will result in future expansion costs being efficient due to careful consideration of the infrastructure being implemented.

Oakland 1 (OKLN1)

Special Notes:

Based off of the March 28th Work Group Meeting: Find options based off the Jefferson County Project

Need to determine monthly rent on this tower and engineering costs

Tower located at: Just west off of Hwy G between Hwy 18 and Dell Rd at 42.993500° - 88.897248°

The following towns and outlying areas will be serviced with this build.

Oakland, Lake Ripley, Fort Atkinson, Lake Mills and Jefferson to name a few

Service Radius: Six (6) Miles

Tower Analysis indicates the following:

- 79 Residential properties can initially be served
- 7 Ag businesses can initially be served
- 4 Businesses can initially be served

Possible – Hwy N and 106 Tower = Residential

Possible – Hord Dairy Farm = Commerce

Possible - Waterloo

Project / Economic Impact

Healthcare

Students

Work from Home

Property Values

Forecasted Project Cost

Forecasted Homes

Forecasted Businesses

Actual Project Cost

Actual Homes

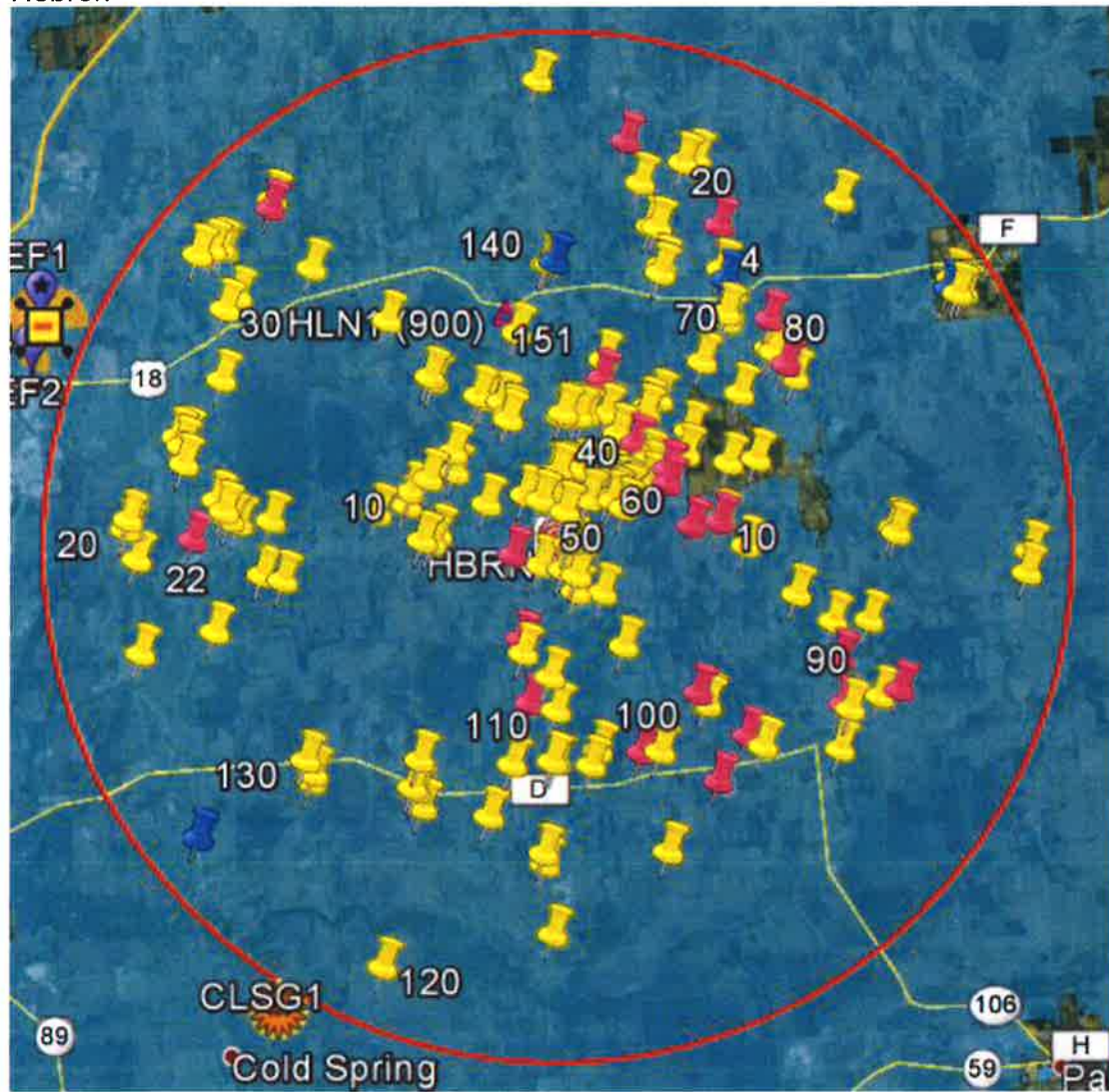
Actual Businesses

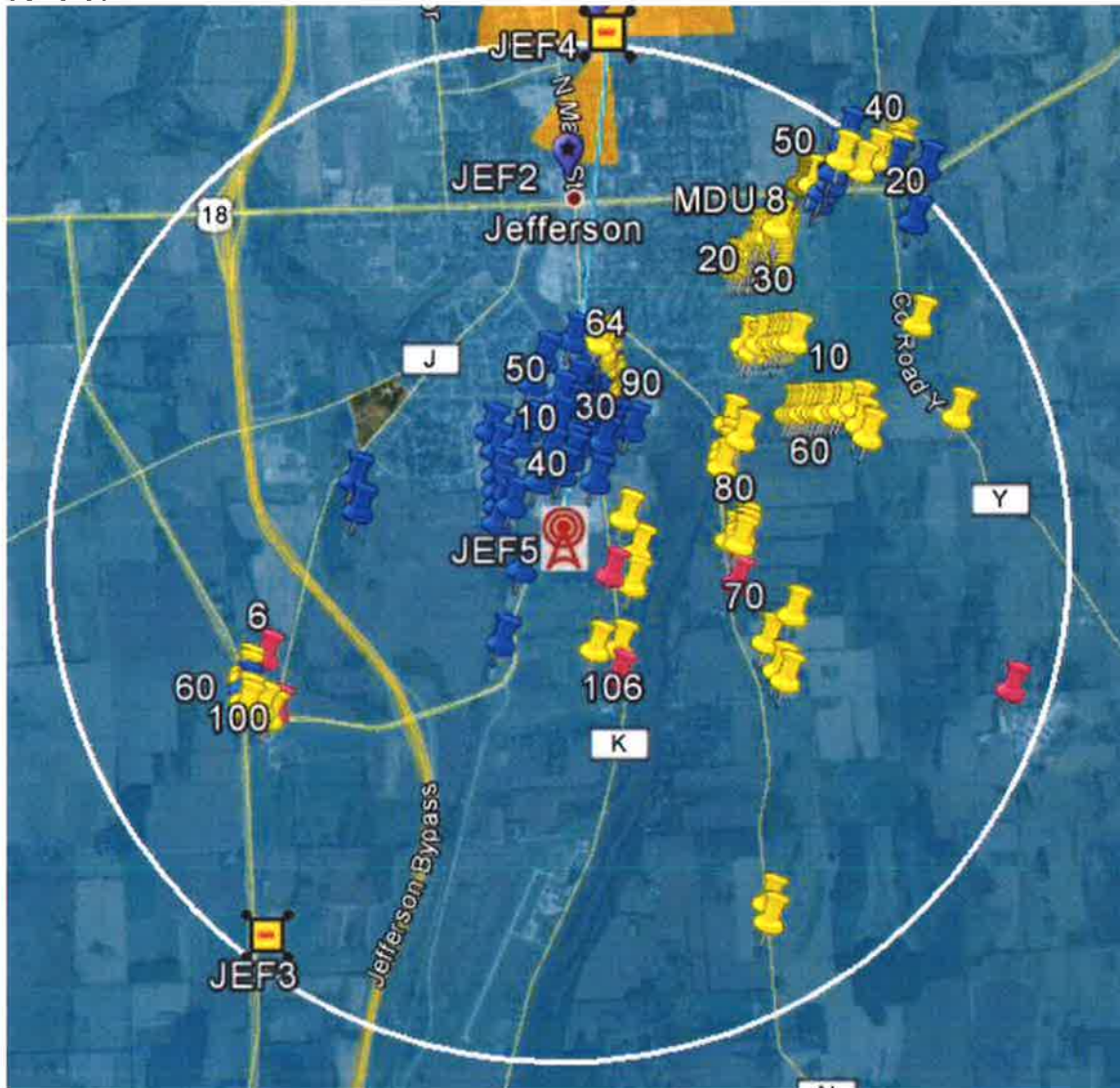
SPECIAL NOTE:

An item that would be of great interest is the change in property value once the property can state they have access to broadband / high speed internet.

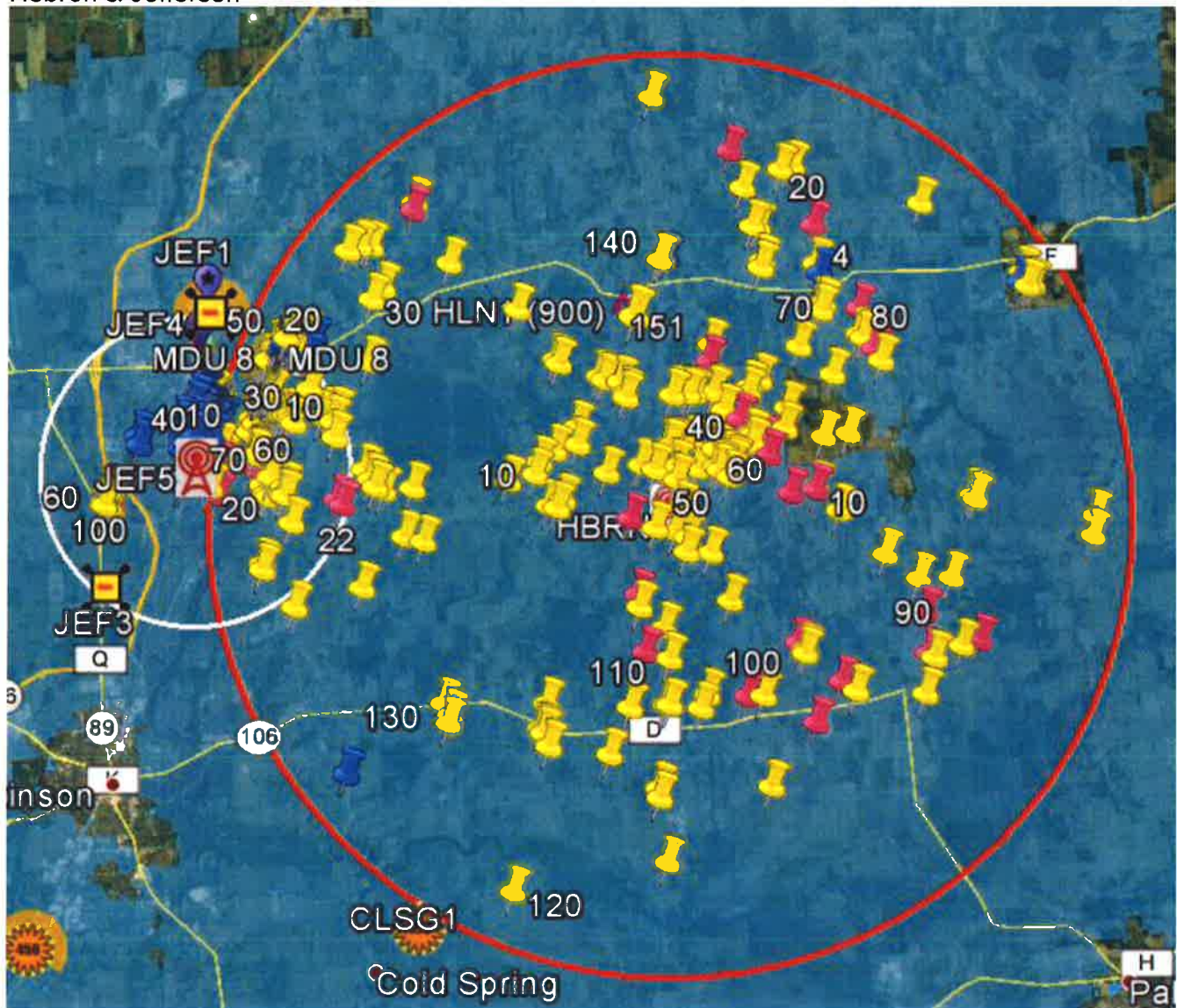
Coverage Maps

Hebron

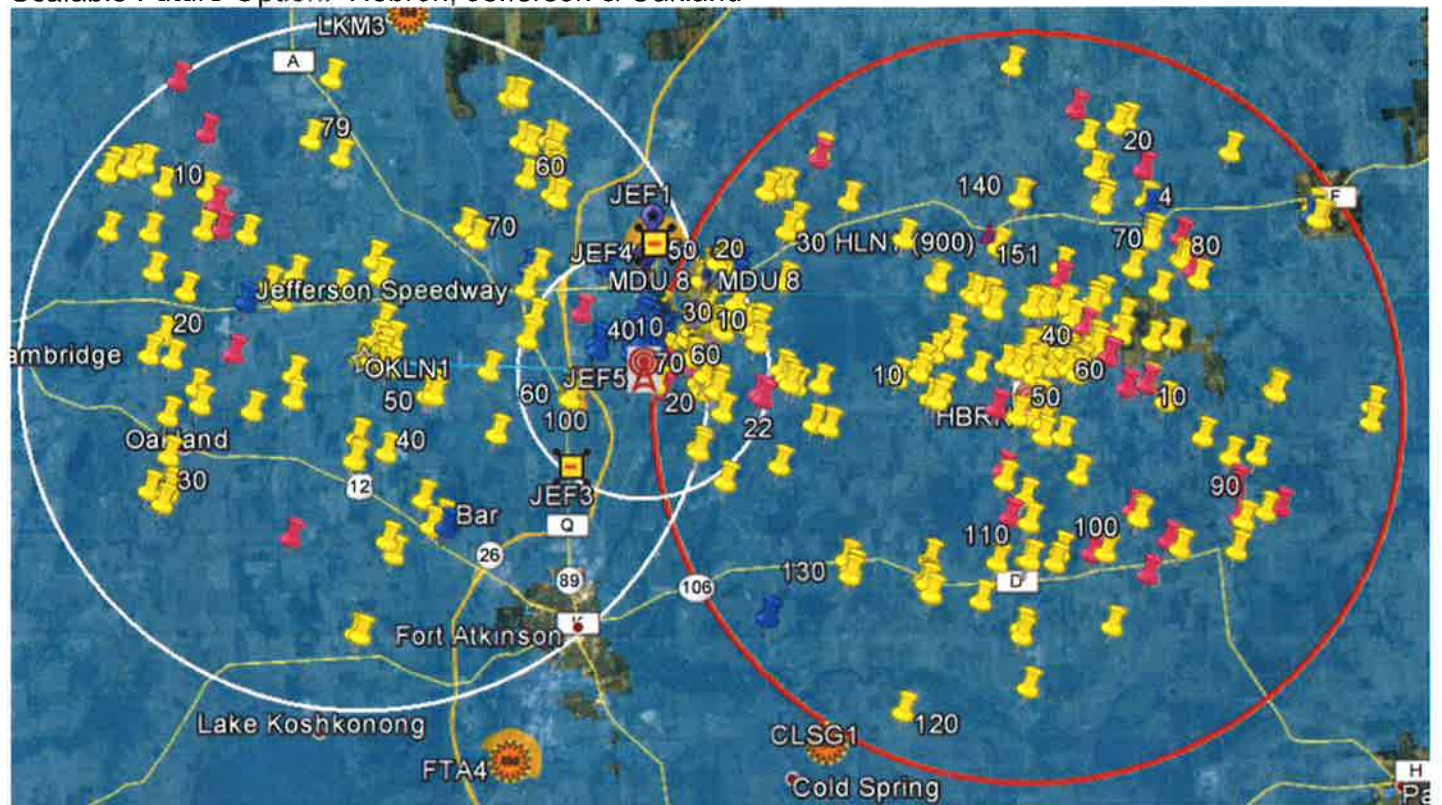




Hebron & Jefferson



Scalable Future Option: Hebron, Jefferson & Oakland



PSC Unserved Underserved Jefferson County

