Broadband Deployment Council
Adoption, Use & Impact Committee
April 20, 2012

Outsource Illinois
Initial Project Proposal

On February 7'th 2012, Dr. Michael Mandel released a paper entitled "Where the Jobs Are: The App Economy" discussing the growth and potential expansion of the next generation of tech companies in the U.S. Dr. Mandel claimed that as technology has become increasingly mobile, a new industry has sprung up with the purpose of improving the ways new hardware can work for the average consumer through mobile applications (apps). This app market is estimated to have generated almost $20 Billion and at least 311,000 jobs in 2011 alone.

Currently, Illinois accounts for 4% of app economy jobs with the overwhelming majority located in the Chicagoland region. Recent additions to the expanding Chicago startup community through tech laboratories such as Catapult Chicago, Tech Nexus, Lightbank and several others show a substantial opportunity for Illinois to seize control of more of this market in the future. Combine this with increasing state focus on broadband deployment through the Illinois Century Network, UC2B, the Illinois Gigabit Project, and other public broadband deployment projects and it becomes clear that Illinois is on the precipice of becoming a technological powerhouse not only in the app economy, but the tech sector as a whole.

However, technological innovation requires more than tech investment firms and middle mile public projects. These serve as a foundation for tech sector growth, but without a plan for bringing all the parts of the tech sector together, nothing will ever be built on that foundation. It is imperative that the Illinois Broadband Deployment Council begin looking towards the long term goal of leveraging the work that the private and public sector have done to begin training the newest generation of tech gurus while simultaneously putting them on the path towards employment at tech companies based in Illinois. By creating and implementing a plan to achieve this goal, the BDC can further its mission of statewide broadband deployment, while setting up Illinois to become a rival to Silicon Valley in 7-10 years.

The first step in this plan should be to focus on training those students currently enrolled in Illinois high schools and community colleges. The BDC should partner with Illinois high schools, community colleges, and the Illinois Technology Association in a new program entitled Outsource Illinois. Outsource Illinois is a new public private partnership that will give Illinois high schools access to the equipment necessary to teach students at a 21'st century level while also giving sponsoring tech companies access to a new pool of interns, future job applicants, and innovative new ideas.

Why Broadband and Why now?

While access to advanced technology has skyrocketed in the last decade as processing and computer memory has increased in power while decreasing in physical size, there is still a substantial digital divide across the United States. Nowhere is this divide clearer than in Illinois classrooms. The

technological opportunities afforded to a child in the suburbs of Cook County are inherently greater than those of students in rural Pope County or Inner City East St. Louis due to access and cost concerns. As budgets continue to tighten in these areas hit hardest by the economic recession, this divide will only grow larger.

But intelligence and potential are not determined by geographic location, and with continued advances in distance learning and online educational tools there is no reason why a student from Hardin County should not have the same opportunities as any other student. There is also no reason why a business whose products exist purely in the digital realm should not have access to interns and perspective employees located in rural areas. With advances in video streaming and shared workspace technology, it is completely possible for a student in southern or central Illinois to work with a company located in Chicago. It is no longer a question of being possible, but whether the opportunities and funding are available to make it happen.

How do we link Illinois together?

In order to move Illinois towards becoming a new technological powerhouse, private and public infrastructure should be linked together. The first step in this process is to connect high schools together with tech companies. While some would argue that private industry has little place in public high school education, it is important to realize that the paradigms governing how our world works are in flux. In order to maintain the highest level of education for the students of Illinois, public education must reach out to those at the center of these changes with the goal of altering their own methods of educating. This will ensure that schools are teaching the skills the next generation of inventors, developers, and designers will actually need to succeed.

Outsource Illinois is a pilot program hoping to make these links easier. The program seeks to link individual businesses with high schools in areas lacking sufficient technical resources. These businesses will then fund the purchase and maintenance of cutting edge computer labs, equipment, and training. In return these businesses will have access to a pool of interested, driven, and innovative students for use as interns. These interns will work from their schools, sometimes hundreds of miles away, to learn about and take part in the growing software development and engineering markets.

These programs would focus on juniors and seniors in high school who are looking towards a high tech career or college degree. The program would encompass an entire school year. The first semester would focus on learning the programming, statistical, or drafting software used by the developer (Java, C+, Python, etc.) and the second semester would focus on actually working with designers and engineers at the firm. Course work would be individualized to the school and focused on the core values of the business funding the school, while still offering a substantial general education in how the business operates that the students can take with them.

If possible, the second step in linking Illinois together can occur at the same time. By signing up community colleges from around the state in the Outsource Illinois program, students who complete the year long program will not only receive high school credit but also dual credit within the community

college system. This allows students to not only learn the basics of the industry, but also have a head start in getting the degree necessary to get a job in the field later in life.

These links between high schools, community colleges, and the tech industry move Illinois towards a system by which growth industries within the state can begin molding their next set of employees based on their future needs. With the U.S. Department of Labor estimating that in 2012 there will be over 10,000,000 high skilled jobs unfilled in the United States, it is absolutely critical that public education at every level begin to work with private businesses to make sure that students are being offered an education that can secure one of these positions. Likewise, it is necessary for the private industry to realize that they can no longer ignore the plight of the public education system if they wish to expand their businesses. In short, public education needs funding while private businesses need skilled workers. A trade is obviously in order.

An outline of the project proposal: A prototype for growth

1. Find two medium-large tech companies who have seen significant expansions recently, preferably companies founded on recent tech advancements with significant innovation potential. These companies should be "new tech" focused, I.E. App Development, Programming, Product Design, Engineering, Game Design, etc. One company should be willing to engage in distance internships with a rural community, the second should be willing to engage inner city kids.
2. Locate two rural schools meeting the following criteria;
    a. Some level of interest from the student body in tech
    b. Willing to offer school credit to students for their internship work
    c. Willing to work with a local community college to offer dual credit
    d. Have a teacher in place already versed in current tech (will most likely be very young) or willing/able to hire one (could possibly use a community college instructor)
3. Contact the closest community college to the potential schools and determine the size and strength of their tech program. If the school has a tech program of some type, determine if the college would be interested in offering dual credit to the high school students for their internship. Determine if the community college would be willing to provide additional support if needed.
4. Fund the project for each school through an initial $5,000 investment from the company to purchase and install equipment, and an additional $2,000 per student/per year investment. Split 50/50 between the student and the school. $1,000 to the student to incentivize and fund their work, and $1,000 to the school to offset the cost of broadband and equipment maintenance.
5. Negotiate with business partners to fund the project, plan out course material with the schools, begin a timeline of implementation, and a PR campaign in conjunction with the state.

Electrifying Broadband
Initial Project Proposal

An intriguing solution for leveling the great digital divide which separates the rural from the urban centers of Illinois could involve the utilization of the vast infrastructure of the rural electric cooperatives. Three essential elements are required to deliver broadband services: right of way, telecommunications infrastructure equipment, and expertise. The rural cooperatives for a large part already possess the two most difficult elements: the right of way and expertise. They are well poised to be able to rapidly deploy broadband services at two essential service levels. They also have the additional advantage in that they are ready to utilize this infrastructure to turn the promise of smart grid technology into a reality.

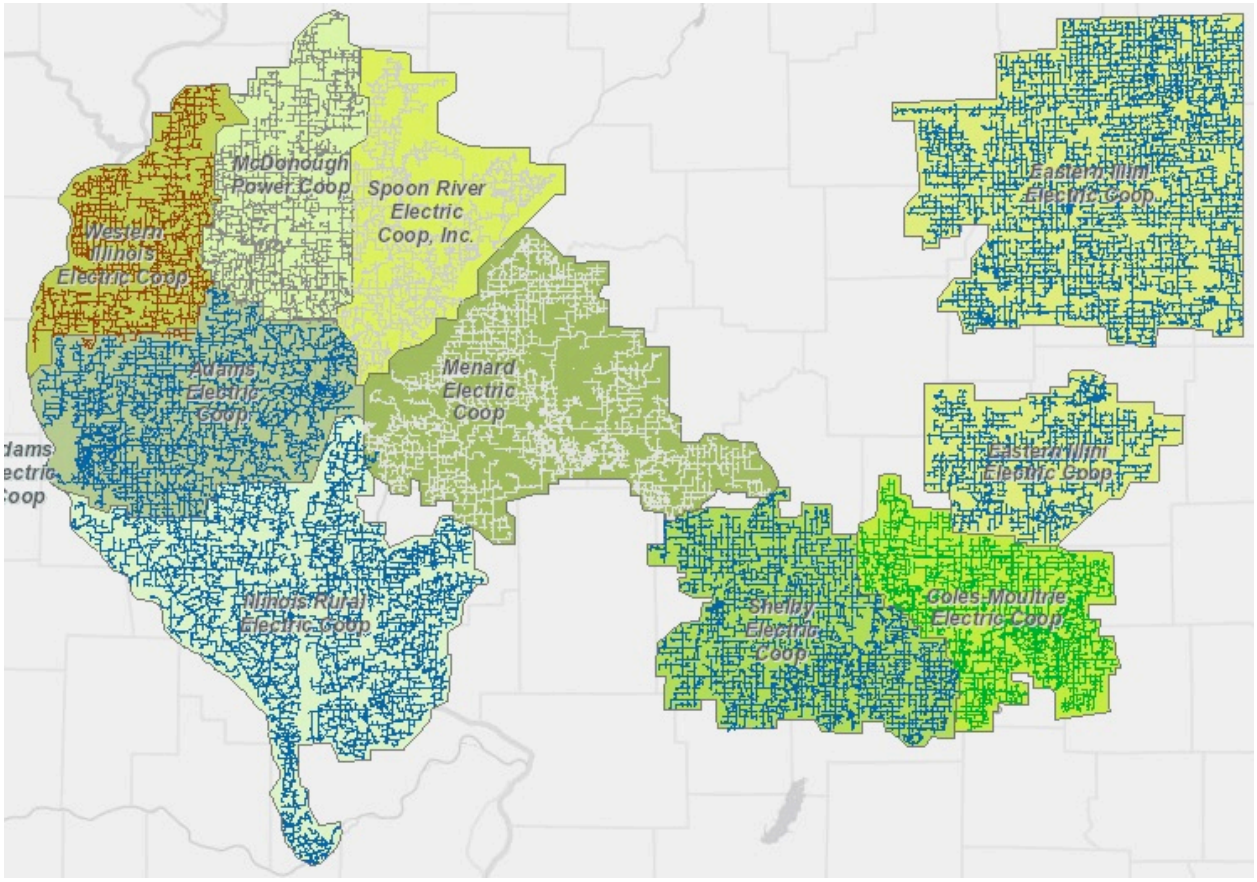

Exhibit 1, a partial view of the REC's distribution network in the targeted rural service area.

The rural electric cooperatives (REC's) operate in a two tiered structure which is ideally suited to be leveraged for broadband deployment. The local distribution cooperatives have existing business relationships with rural residences and businesses, while their generation and transmission cooperatives are in the long distance wires business and possess the technological capabilities to support fiber optic and microwave based high speed data communications. Additionally, they are aligned with local telecommunication providers who are ready and willing to provide services to rural communities.

The advantages of this business arrangement are many. These not for profit utility providers are owned by the people and businesses they serve. As such, they are in a prime position to ensure infrastructure build-outs will be highly efficient. They have been in business for decades learning to deploy expensive assets economically in areas which other providers have elected to pass by. They are also keenly aware of the particular needs of the areas they serve with respect to economic development, education, and health care. Additionally, plans put forth by REC's recognize the need for two distinct classes of service. They support the proliferation of wireless broadband services to provide general access to the internet to improve the quality of life in rural Illinois. They also understand the importance of deploying carrier-class optical backbones to provide ultra-high speed, highly reliable egress to the urban infrastructure. This two tiered approach is essential to successfully leveling the playing field in rural areas.

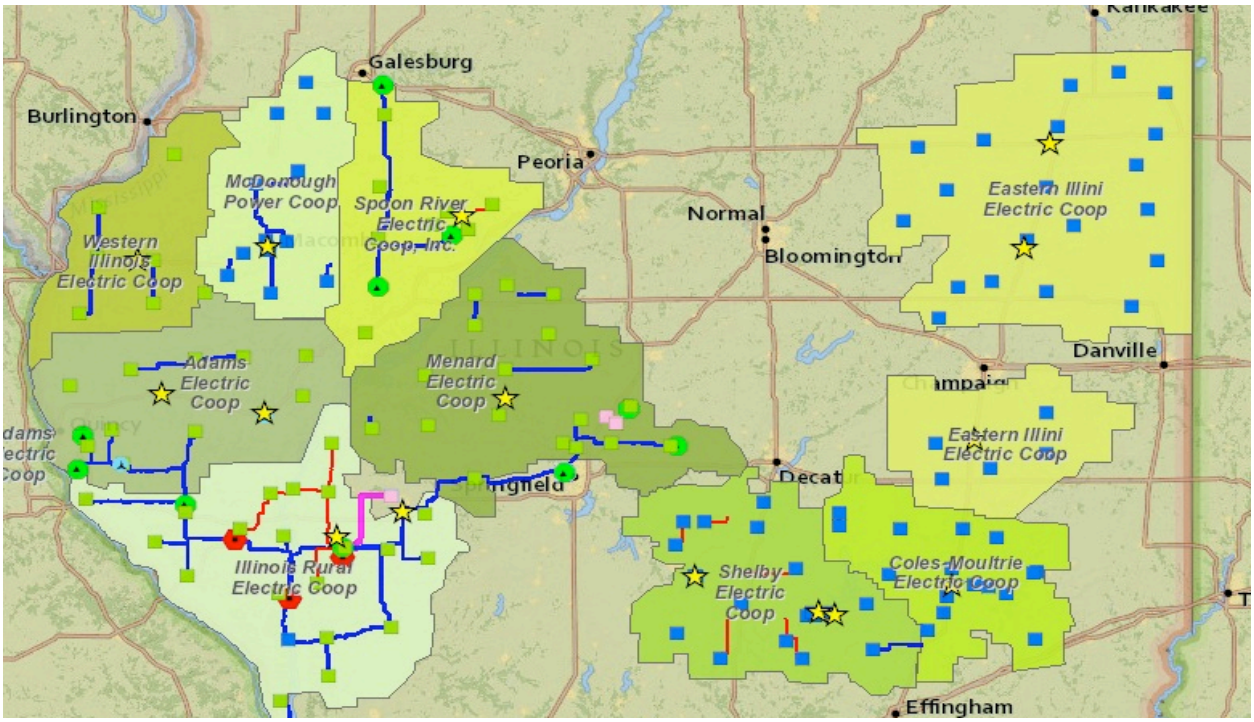

Exhibit 2, Proposed fiber optic distribution points

Lastly, unlike most urban areas, the REC's have already largely deployed the advanced meters required to support the realization of the smart grid. This makes the utilization of the REC's in the deployment of broadband technology even more compelling. They stand poised to utilize the same dollars invested in the telecommunications infrastructure to lower energy costs, improve the environment and increase the reliability of the delivery of electric energy to their consumer-owners.

The REC's have already proposed some interesting and compelling business structures to maximize the value of investment in rural broadband technology. For example, Prairie Power, Inc. of Jacksonvile Illinois has proposed[1] the formation of a consortium of REC's and rural telecom providers to maximize

1 Testimony of Jay C. Bartlett, President & CEO, Prairie Power, Inc.

the value of existing investments in fiber optic communications links while making new investments to drive the proliferation of fiber optic cable deeper into rural Illinois. Their primary goal is to support the development of wireless broadband by providing carrier class backhaul capabilites, enabling new smart grid initiavies and providing access to previously unreachable areas to telecommunications companies. They also intend to be able to directly connect facilities that require large amounts of bandwidth, such as hospitals and schools, to the fiber optic backbone. To realize this goal, each of the REC's will have to become members of the consortium.

This particular initiave is well developed and extensible. The consortium has developed a GIS system to facilitate the design and implementation of the system. They have identified a myriad of community anchor locations as well as destinations which will serve as demarcation points for further development. Their design provides the necessary elements to dramatically expand broadband proliferation, and provides for fiber optic service points throughout their targeted service teritory.

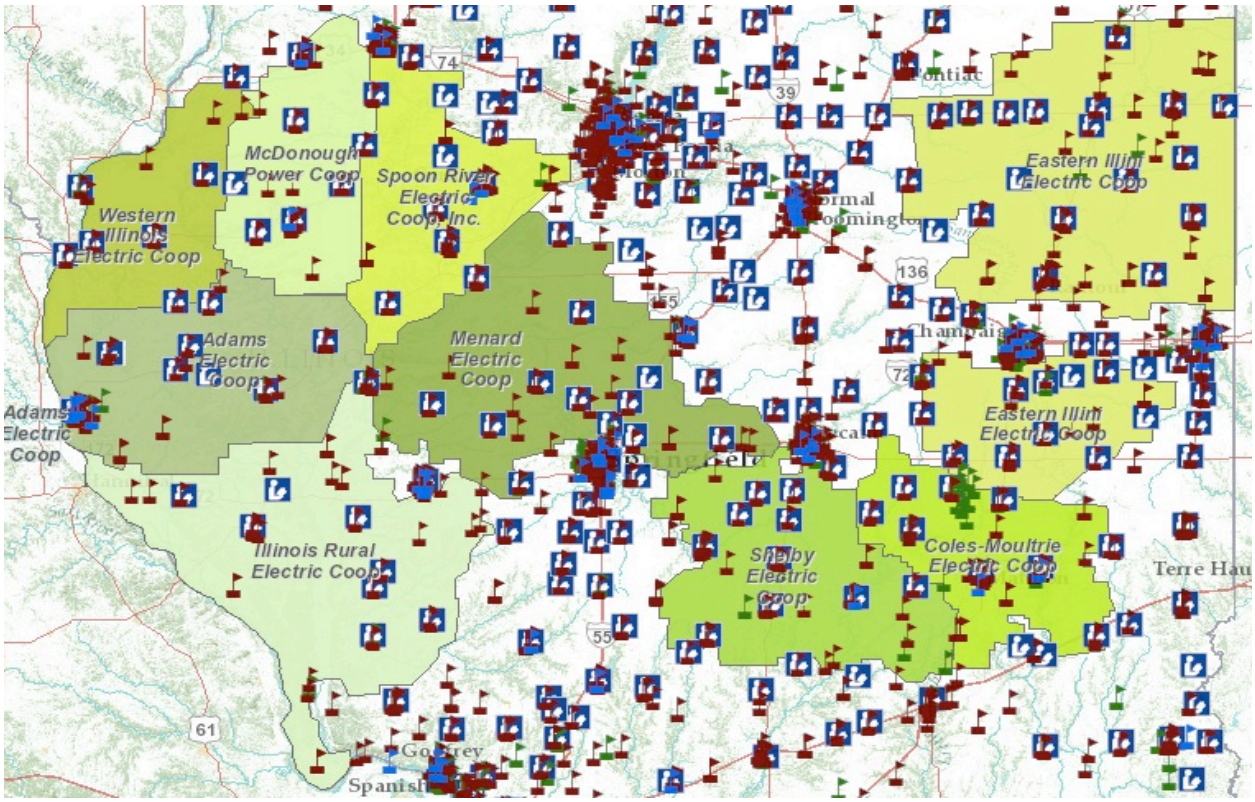

Exhibit 3, Schools and libraries located within the proposed service area.

In particular, it is worth reiterating a few points. First, the REC's have access to essentially every home and business in their vast service territories, territories that are truly rural in nature. Second, they are accustomed to finding ways of building economically viable, not for profit businesses to serve low density populations. Third, REC investment in telecommunications technology will also support

development of the smart grid. Fourth, by utilizing their existing infrastructure, they are well positioned to reap the greatest rewards for each dollar invested. Lastly, by building a consortium of interested parties, fair access can be granted to a multitude of service providers who choose to participate in the process.

We believe a public-private partnership supported by the State of Illinois could dramatically enhance this effort by driving fiber even deeper into the most underserved areas of the state. This approach could provide new economic development, education, and healthcare opportunities in areas of the State ripe for economic expansion if we can leverage the already strong agricultural base. This approach is not only economically effcient, but also should be able to deliver results in a relatively short time frame. We urge the State of Illinois to seek a viable methodology to enhance the development of this and like kind projects.

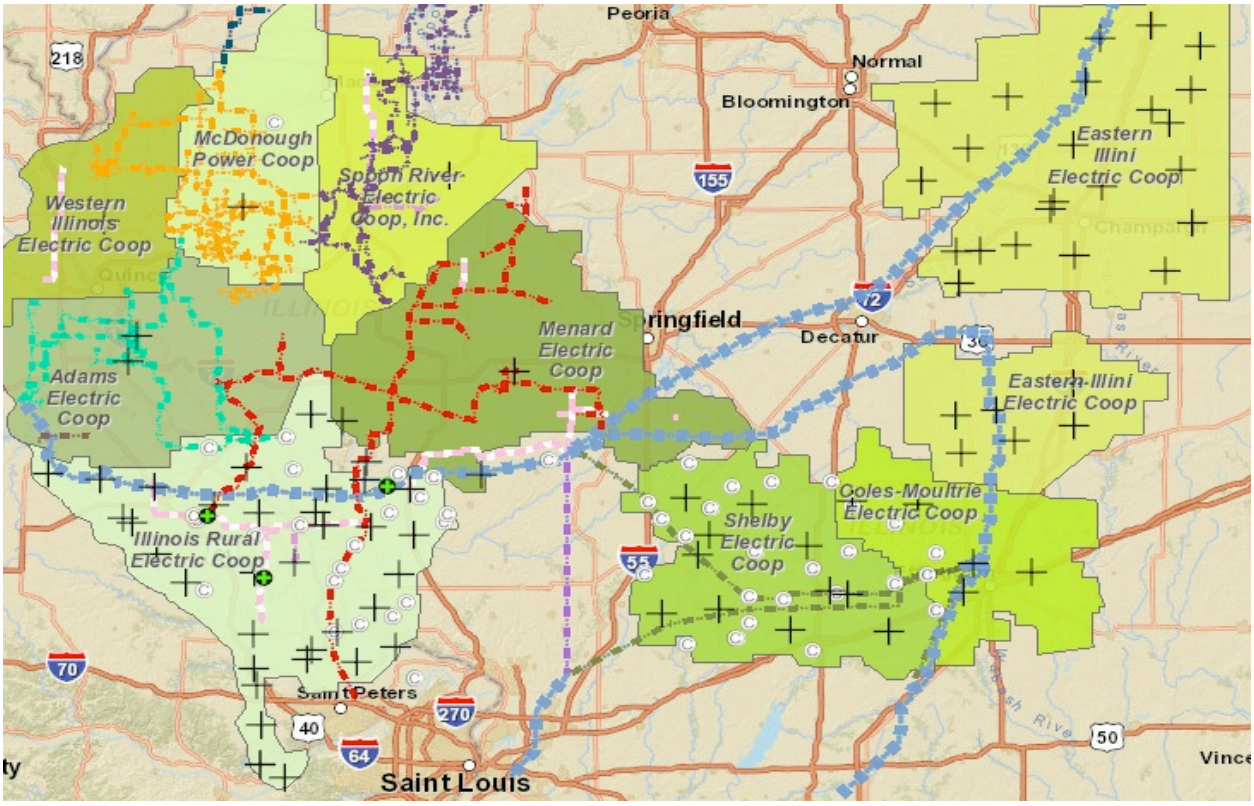

Exhibit 4, crosses represent existing REC radio towers, many of which are already providing wireless broadband services.