



# Illinois Century Network

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**To:** Federal Communications Commission (FCC) Staff

**Subject:** Expression of Interest – Rural Broadband Experiment  
WC Docket No. 10-90

## *1 Introduction*

The Illinois Department of Central Management Services (CMS), a state agency of Illinois, welcomes the opportunity to submit this expression of interest for a Rural Broadband experiment proposal in Illinois. CMS manages the Illinois Century Network (ICN), the state network in Illinois providing high speed broadband to over 6000 education locations, libraries, state agencies and other community anchor institutions.

The focus of ICN is to deliver high speed broadband to Community Anchor Institutions (CAIs) in Illinois and facilitate expansion of broadband throughout all areas of Illinois, in particular broadband to unserved and underserved areas. ICN objectives in the experiment are to develop and validate a foundation for the

provisioning of high speed broadband services as well as to provide a platform for service experiments to be conducted by a service provider partner. The foundation that ICN intends to focus on for the provision of high speed broadband is high strand count wholesale fiber to Community Anchor Institutions. This fiber would be made available to retail providers for the provision of retail services to both Community Anchor Institutions and residences and would be available on an open access, non-discriminatory basis. High strand count fiber would be deployed to ensure competition in the market place, allowing different providers to purchase fiber, either via short term lease or long term Indefeasible Right of Use (IRU). The incremental cost of additional fiber strands is minimal when compared with the overall construction cost.

For the purposes of this experiment, ICN intends to enter into a partnership with one or more service providers, who will be responsible for providing broadband services to residences in the service area(s) as well as conducting all service experiments to validate the transition to IP based services. ICN plans to issue a Request for Information (RFI) to solicit input from potential service provider partners. Service providers may include traditional incumbent providers, competitive providers, cable providers, rural electric cooperatives, municipalities, alternative fiber providers or any entity that has the capability and desire to offer broadband services to Community Anchor Institutions and residences.

Laying the foundation for high speed broadband means deploying infrastructure that will last for decades into the future, and not needing to be upgraded in a few short years due to broadband demands beyond 3Mb/s. We believe deploying high strand count fiber optic cables provides this foundation. ICN will also work with service providers that believe in deploying infrastructure that will last at least a generation.

The speed to be supported to anchor institutions will be 1Gb/s or greater via fiber technology. This will be supported by retail providers utilizing the dark fiber constructed. Speeds supported to residences are expected to be in the hundreds of megabits per second range and may be in the gigabit range, depending on the service provider. ICN will strongly support those service providers that propose to provide ultra high speed broadband to residences (meaning gigabits per second) to support a changing of the narrative of what high speed residential broadband means.

We believe wholesale fiber to anchor institutions in Illinois, especially schools, libraries and health centers, promotes true competition amongst retail providers and will allow true competition for universal service funds, thus reducing the service price to the anchor institution and reducing the E-rate and Rural Health Care funds requested.

ICN views this experiment as a step towards providing fiber based broadband to all locations in Illinois, and providing equality of access to high speed broadband between rural and urban residents.

In summary, ICN will manage a build of wholesale fiber optic infrastructure to identified community anchor institutions in the service area. ICN will work with a service provider with the provider deploying broadband to residences and conducting any necessary service tests. This approach we believe provides maximum leverage and best use of available experiment funds.

## 2 *Illinois Century Network*

The Illinois Century Network was established in 1999 to serve the needs of Illinoisans for education, training and information technologies. Today ICN, managed by CMS, is a broadband network providing high speed access to data, video and audio communications to more than 6,000 schools, libraries, colleges, universities, museums, local government, state agencies, hospitals and health centers. In August 2010, ICN was awarded a BTOP grant and state match of over \$96M to expand and upgrade the existing ICN state network. The Illinois Broadband Opportunity Partnership project has constructed 1049 miles of new fiber and upgraded or purchased an additional 742 miles of fiber network.

For the 1049 miles of new construction, 144 strand count fiber is deployed on the backbone. Electronics have been purchased or upgraded throughout the network.

The new construction and upgraded network completed in December 2013 and there is now dark fiber and lit services available to the commercial sector in addition to community anchor institutions. The fiber route map is shown in Figure 1 below.



Figure 1.

### 3 The Need in Illinois

Based on information provided by Partnership for a Connected Illinois (PCI), the National Telecommunications and Information Administration (NTIA) designated entity for broadband mapping for Illinois, there are a total of 12,895 community anchor institutions in Illinois. Table 1 shows the type of anchor institution and shows the number of institutions reported with a downstream speed of less than 3Mb/s per Round 8 of the data submission to NTIA for broadband mapping.

Figure 2 shows the 2613 anchor institutions, the Illinois Century Network fiber path and proposed experiment service areas (shown by the red outline boxes). The blue shaded area in Figure 2 shows the eligible high cost service areas with annual support specified by the FCC of greater than \$200K. Figure 3 shows the anchor institutions and Illinois Century Network fiber path but with all eligible high cost areas shown i.e. irrespective of the annual support level.

The experiment service areas will be finalized in collaboration with the service provider partner(s) and may differ from the proposed service areas shown in Figure 2.

	No of locations in Illinois	Locations reporting downstream speed of less than 3Mb/s
<b>K-12 School</b>	5847	613
<b>Library</b>	1262	391
<b>Medical/Healthcare</b>	1338	54
<b>Public Safety</b>	2392	388
<b>University, College other post secondary</b>	297	30
<b>Other Community support - government</b>	1422	1089
<b>Other Community support - non government</b>	337	48
<b>Total</b>	<b>12895</b>	<b>2613</b>

Table 1.

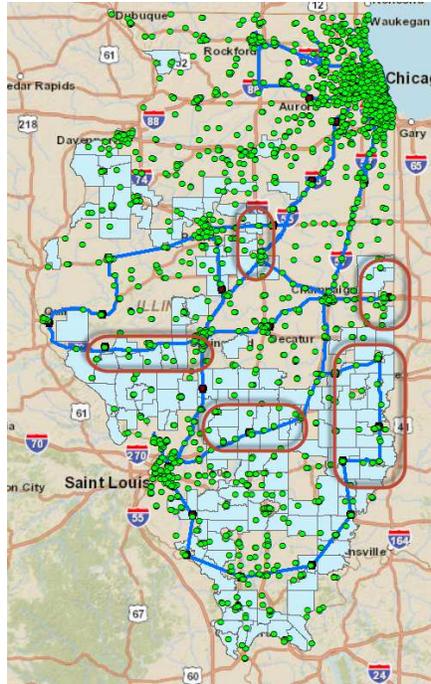


Figure 2.

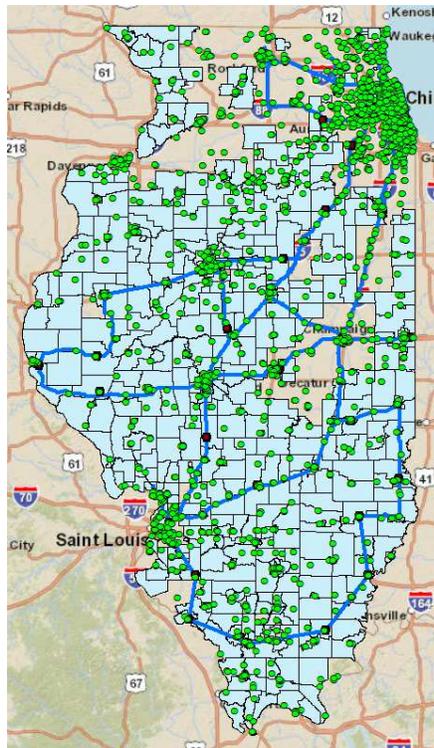


Figure 3.

#### ***4 Expected Cost***

At a high level we are expecting project cost to lie between \$20M and \$40M and will cover (i) construction of a fiber network to community anchor institutions, (ii) construction of a fiber network to all residences and (iii) cost to execute the service experiments and report results. We expect the cost to consist of a state match, a service provider match and funds from the FCC.

Following information received from service providers in response to the RFI we will be able to more accurately provide the cost. The cost will depend on the proposed service area, input from the service provider on tests to be conducted, number of customers in service area and number of community anchor institutions served.

#### ***5 State Support of the Project***

In addition to contributing to the project cost, the State of Illinois will provide expedited permitting and will work with our service provider partners to facilitate the rapid deployment of infrastructure. The State of Illinois will be an active partner with the service provider and will be focused on a successful outcome of the Rural Broadband Experiment.

#### ***6 Further Information***

Illinois Department of Central Management Services looks forward to working with the FCC on a Rural Broadband experiment and looks forward to providing a more detailed experiment proposal application. If further information is required please don't hesitate to contact Essam El-Beik, contact details are given on the first page.