Advanced Engineering Taskforce Meeting
January 17, 2014

The meeting was called to order at 10:00.

Members Present

Name	Affiliation	Location
Scott Armstrong	Kishwaukee Community College	Conference Bridge
Troy Brown	Shawnee Library Systems	Conference Bridge
Ken Davis	Sangamon County ETSD	Springfield -CMS
Jim Flanagan	Illinois Chief Technology Officers	Chicago-JRTC
Robert Dulski	Brookfield Zoo	Chicago-JRTC
Dennis Gallo	O'Fallon CCSD 90	Springfield -CMS
Brandon Gant	ICARLI	Springfield -CMS
Rich Kulig	College of DuPage	Conference Bridge
Joel Mambretti	Northwestern University	Conference Bridge
Steve Menken	Illinois State University	Conference Bridge
Brian Murphy	Eastern Illinois University	Conference Bridge
Alan Pfeifer	Sauk Valley Community College	Conference Bridge
Mike Shelton	Southern Illinois University	Conference Bridge
Raj Siddaraju	CC Presidents Tech Council	Conference Bridge
Brian Tobin	DeKalb CUSD 428	Conference Bridge

Members Absent

Name	Affiliation	Location
Andrew Bullen	Illinois State Library	
Mike Dickson	Western Illinois University	
Herb Kuryliw	NIU	
Tracy Smith	University of Illinois	
Jim Peterson	Bloomington Schools/Illini Cloud	
Glen Trommels	City of Rockford	
Rob Zschernitz	The Field Museum	

Guests

Name	Affiliation	Location
Anita Nikolich		Conference Bridge
Kevin Findley	NIU	Conference Bridge

Staff

Name	Affiliation	Location
Lori Sorenson	Central Management Services	Central Management Services
Kirk Mulvany	Central Management Services	Central Management Services
Robin Woodsome	Central Management Services	Central Management Services
Frank Walters	Central Management Services	Central Management Services
Michelle Brown	Central Management Services	Central Management Services

Meeting was called to order by Kirk at 10:05 a.m.

Review Agenda, Approval or Minutes
Jim asked if anyone has any changes to the minutes and there weren't any. Jim also asked if there were any changes, additions or deletions as it relates to the minutes and there weren't any. Jim asks for a motion to accept the minutes as already read or as you've seen them. Dennis Gallo made motion to accept the October 18th minutes and Alan Pfeifer seconded the motion. The motion carried.

Old Business
eRate NPRM – Lori is out sick and Robin is asked if he has anything on eRate NPRM or the K12 Steering Committee. Robin mentions that the K-12 Steering Committee that progress continues to be made. There will be 3 quick points but not great detail.

- Has put full and interim report to the Governor's Office.
- Working with ISBE as they develop a report for the Governor's Office on funding that is required to support K-12 connectivity both internal and external connectivity and that we conducted a survey working with ISBE for K-12 and trying to get a better understanding of what connectivity K-12 schools were connected with and it was a simple survey. It started out asking do you have fiber and if you don't have fiber what type of connectivity do you have. We were surprised that the results being progress has been made over the last couple of years. With 70% of those responding indicating that they did have fiber connectivity. That leads to 1 school maybe not all (#380) schools within the district. We need further understanding what that 70% represents in actual physical fiber. It assumes that the majority of that is leased fiber. Last time the survey was conducted that ISPN had going back a couple of years it was closer to 60% were still without any type of fiber.
- We have known over the last few years the BTOP project is going on which has been significant in both Northern and Southern Illinois and then the ICN project. More focus on Metro Ethernet services from the providers as well as a lot of new providers coming into play and not necessarily providers but companies that are in the business of building fiber networks. We're seeing the results of that coming into Illinois.

Fiber Project Update
We are complete with our Fiber Project as of December 31st. A significant challenge was finishing up the physical construction and interconnectivity in Chicago Proper but was able to get that completed. The last thing to happen in the last week of December was turning up that segment from 350 East Cermak South to Kankakee. All construction is complete and all equipment has been installed. We have the next 90 days, end of March for final closeout and wrapping things up with the Feds, NTIA. We're doing final reporting, processing last invoices and those types of activities.

As of January 11, 2014 we finished migrating all of the ICN production backbone connectivity over to new fiber infrastructure as well. This is significant and we've been doing it as we go. We have 2 segments that were yet to be migrated that were dependent upon completion of that physical

connectivity in Chicago and were able to get that done during the maintenance window last week. Now everything is funning on the minimum of the 10 gig infrastructure at this point.

There are redundant paths everywhere. In the completion of Chicago helped complete that activity. Everything on the 55 corridor is done up that way to Chicago is done up the 57 corridor, the Dan Ryan.

 When we get into the actual network update further in the meeting Frank will go into more detail on what that means in the way of the network design. In our new world now with new fiber infrastructure, what the redundancy looks like and we'll have an opportunity to speak about that in more detail.

Interesting Note: One of the outcomes of this for the ICN was to turn down all those lease line fiber optic circuits through the carriers. The orders were placed to turn down the last 5 circuits that we can at this point. Turning down those 5 circuits will save $155,000 per month, $1.86 million per year. Those 5 circuits are 5 out of 16 backbone circuits that we were able to taken down. The other 11 have already been taken down. That gives you a magnitude of the savings. Kirk stated that he can put more real numbers to that when he has a chance to round it up.

What that results in is by the time those orders are processed and things are officially disconnected should be about the first to middle part of March that those actually get shut off. We have to give 30 days' notice with our contracts. That will leave us with 2 leased line circuits and those are the connections into and out of Moline because that is the area of the state that we didn't address with our fiber build or have any of those fiber projects to leverage at the time . That being said IDOT has completed the physical construction of a fiber route between Moline and Macomb. We are in the process, outside of our project which is over, of doing the interconnect scopes of builds in Macomb and Moline Proper so that will give us a continuous path of Moline to Macomb which will get us one step closer to being able to lessen our dependence on those remaining lease line circuits.

We have connectivity into our POP site. As part of our project we build to the Macomb POP site. Western Macomb is on the new project and Western Moline is not. That fiber build that is into the town of Macomb we're going to work on that last little interconnect between our POP and that fiber infrastructure and once that happens there will be a redundant path out of Macomb on our newly built fiber.

This is another redundancy and the purpose of that fiber would be to get to the point where Moline has redundant fiber to lease as well.

Next year we're looking at one of the paths to go from Moline to Prophetstown to meet up with IFiber.

 project so we can have a fiber pipe that goes redundant from Moline as well. It might be of some interest to NIU as well.

One of the things that relates to the fiber project is that we were able to get additional equipment purchased. We came in under budget as far as the project budget is concerned. We purchase some 100 gig gear.

Network Update

With the end of the project. In the November, December time frame it was clear that we were going to come under budget. We got permission to implement 10 gigabit distribution routers, ASR 9006, Nexus equipment, 100 gigabit switching gear to go to Starlight, some 100 gigabit routing gear to go between Springfield and Chicago. That equipment because it was purchased so late in the grant, it was not the expectation that that would be implemented and completed by the end of the project deadline.

We still have what we bought with the Federal money. It is in place physically and powered up. That is moving forward and also the Fujitsu chassis support 100 gigabit channels. That equipment is installed and we're working now to begin the turn up process and what staff is looking forward to now is being able to turn it up the way we did things before we started the project. It's a project, it is laid out, we have a time line and we don't take any risks. This may be an 8 month project to turn up all the equipment and move customers over to it.

For instance everything on the traditional ring which we don't have any more. See the map Frank sent through email today. The new map will give you an idea of the new infrastructure the logical versus the physical which is very different now.   It used to be that the logical followed very closely to the physical map at least the circuit physical map. As we upgrade the distribution router all those that are on those rings Bloomington, Champaign, Peoria, Springfield, Collinsville and Chicago have been upgraded to the new distribution gear.

Springfield and Chicago because of the high density in those locations and the head ends that live in those locations, the core gear has been upgraded as well. Core gear is operational, the distribution gear, and we would not call it operational because we haven't moved customers over but by the grant requirement it's operational. It is turned on and configured. We'll begin moving customers over to them as soon as possible.

The infrastructure there is that there are around 50 10 gig ports on the distribution router that provides access to the switch that in each distribution router has its own switch and the switch has around 100 ports on it to start with for each one of those and those support between 1 and 100 gig on that particular chassis. It is a good place to be.

As a result of the fiber project on the customer side and fiber make ready and services we're providing that list continues to grow. Essam El-Biek has been doing our sales and marketing, and getting the word out, and initiating those agreements and driving those to the plate. At this point we have 8 maybe 9 IRU agreements for dark fiber and services executed and inked. We've moved forward with providing services. So there are about half of those that we've gotten to the point where we're providing service and started billing for those services.

The entities are not all commercial. There are 2 K-12 school districts and 1 Community College (CC) that we built to a main campus. The CC has signed on to lease dark fiber to one their remote campuses to get back to the main campus. There are 2 third party private service providers that are fairly sizeable and doing lots of work providing connectivity. They are using fiber in a lot of cases to get to cell towers. That is their business and in both cases to major cellular carriers.

The ones to speak of are all commercial carriers. The other couple are more in the commercial entity type role would be a rural electric coop and another power company in this area that has signed agreements. Aside from all those executed there is probably another 6 or 8 queued up and in various stages of the legal process getting the agreements inked.

There is a lot of overlap particularly between the later months in the fall in finishing up the project and trying to fulfill all the customer needs and get them connected to portions of the network that were already done. Now we're focusing on operationalizing and continuing to fill those orders. These are things we were hopeful would happen.

Robin stated 90% of CIA have migrated over and started using the connectivity. There are still some schools like Triton College which got connected just before the end of the calendar year. They have not migrated over but are in the process of doing so. There is a CTA path but to try to connect Triton they are going out West and then coming around. We made a modification and we're still waiting to have them on the path that we prefer to have them on which is straight downtown and that would be the CTA path. The CTA path is going to help us complete a REP ring for redundancy at the last mile level and then it will also allow us to move some of our backbone links off of the Toll Plaza 19 to downtown Chicago path which is a concern.

A side note is that we are talking to the sites that have particularly K-12s that have been migrated over seeing if they would be interested in doing something experimental something big that we can say "here is what you can do."

The only one that hasn't been connected is McHenry County College because the path is not complete due to road a widening project.

We have 85% to 90% of all the directly connected sites that were connected as part of the grant have migrated their network over.

Kirk stated that was all he had on the fiber project and related items and asks if there are any questions.

Going from 10 to 100 gig does that just give capacity to bring on new customers? The large pipe between Springfield and Chicago is going to be redundant 100 gigs. That is mainly because there is a lot of traffic but there is an expectation that would even grow.
There is some interest in customers purchasing 100 gig so we have to have infrastructure to provide those needs. That is from Chicago to Collinsville via Springfield.

Between Springfield and Chicago there is a 100 gig path that goes west and a 100 gig path that goes to the east.

We have the capacity to run forty 100 gigabit lengths out each direction. When I say we're turning up 100 gig I'm taking about 1 100 gig along one of the channels, One of those 40 channels.

Starlight and Equinix have a great deal of interest in accessing. We use the Federal dollars to get switch access to Starlight at a 100 gig and we already consume about 40 gig to that facility through Cogent or

peering, ITunes, CPS (Customer Peering Service) from I2 and customers that want access to I2 that are off net. Also Equinix is a big target. In the next year or so we're looking to upgrade them in the same manner to 100 gig.

The 40 gig technology we are using today for instance is we have an egress router layout where the Egress router has multiple egress providers on it. We use 40 gig to connect to those as our primary connection because we have had problems with port channeling in the past.

None of the sites will end up having 100 gig or even 40 gig for years.   Champaign, Bloomington, and others will all stay at 10 gig mainly because we're moving to what I wanted to say earlier the old circuits, the cost savings there is a cost savings but in addition to that they represent less than 25% of our current starting bandwidth. The bandwidth we chose to use is a percentage of a percentage of our capacity is over 4X the capacity that we're swopping out. That is a very good place to be and it made a lot of sense for us to do what we did.

The logical layout is what we have here and the biggest advantage of that is there is no more shared bandwidth anywhere on the network. No site ever competes with another site for bandwidth and it won't happen again.

When Springfield sends something to Chicago it sends it to Chicago directly and each site does that. The statistical analysis will show a geometric increase in available bandwidth.

Moline and Rockford do not have fiber. As soon as that fiber is there we'll have the same approach. It will differ in that Moline won't connect to Peoria anymore and it won't connect to Macomb. We know the fiber goes there but it will home to Springfield and Chicago just like other sites.

General Update as Kirk mentioned we are following up with process and operationalizing a lot of the call out procedures for fiber cuts. How do we manage new customers? Hhow do we track them?   Do we track the fiber customers differently than we track traditional service customers? How do we with the fact that we can't monitor dark fiber customers because there is nothing to monitor? We will be maturing that process for years to come but try to get a handle on it real quickly within the next 30 to 60 days.

The ILA sites, when we say that everything is redundant the ILA site are not redundant and that is by design. When we talk about redundant and have 2 entrances in geophysical diversity, we are talking about POP sites. The ILAs are the amplification sites between the long haul locations. For us that satisfies a very particular service or need like amplifying the signal so we can get the packet across. Kankakee doesn't know that they are not redundant. They are a lateral just like everybody else is a lateral. There is no special redundancy they get because they're also an ILA site.

We are in the process of rolling out a resilient Ethernet Protocol Ring. If you were to take an Ethernet network and make it act like a sonnet self healing ring that is what you would do to the REP ring and that will be rolling out within the next year.

You will see sites popping up on it within the next 30 days but it will be completed throughout the state within the next year to 16 months or so. That will provide schools that don't have a discrete connection directly to our POP over the fiber. We want to give them a way to fail over with 50 milliseconds to a different path that takes them east instead of west. This will be an entirely new network or a set of new networks that lies under the ICN and allows us to aggregate them. This will be treated like its own network. Like last mile network that can aggregate and feed into the ICN proper,like we do today.

We have currently the egress capacity of 52 gig. That is 32 gig without peering and Internet 2 (I2). It is difficult to count I2 and peering in. Just because we have 10 gig doesn't' mean we can consume 10 gig. It is up to how much our peers send us and how much our customers decide to send packets to I2 as to whether that is used. We generally will put that out and use a 32 gig number. When you see two different numbers that is usually what it is.

We have 2 utilizations. The current utilization is based on the real utilization; solarwinds is 37% that is the month to day. It is almost borderline too much bandwidth. The peak is the 90 percentile peak. It doesn't' count microburst however, that is not the picture we in NDE look at in operations we look at that in a redundant perspective. If we lost Chicago what would that percentage be and that was roughly operating at 70% utilization that is only if Chicago were to go down or if AT&T would go down where would we be and we don't want to ever be in a position where we don't have enough bandwidth. Our 100% typically is really 50 percent.

We have some changes to move our 1 gig connections and our 1 gig load balanced connections with Quest and Level3. We are going to migrate that to 10 gig and also the 10 gig for AT&T is moving to Springfield so that we have a downstate drain and it is very important to us because we don't want to be in a position where we have 85% of our internet access in the exact same building is not good planning. We are working to replace the downstate and augment that area as well at the same time. We are pretty close on that. The next time we talk it should be done. The equipment is in place and the testing has been done.

Part of the augmentation in getting the 10gig downstate includes presence in Walnut. We do have presence in Walnut now and it is basically the St. Louis Equinix and we do have presence there. As soon as we have an internal need like egress or we have a customer need like to buy access to get to a provider at the Walnut facility we'll place the order and get quote and upgrade to a wave channel location. That will give us 3 major Internet NAP locations in the state. Again a really good place to be.

Any questions or any regarding the new logical design?

Is the uptake from Community Colleges (CC) positive? What is the general feel for Community Colleges?

We have CC that are connected with the fiber are purchasing bandwidth. Well over their allocation. The CC are taking advantage of the fiber connection. Taking their allocation and purchasing a lot more.

Are any of them taking advantage of that emergency bandwidth provision that we have now where they can buy the option to immediately bump their bandwidth up in case of emergencies? Robin stated that he doesn't have any CC subscribing to that right ==now.==

Note: Seven backbone circuits went down and no customers were impacted. Also a power outage last week there was no impact to anyone.

In the town of Lincoln commercial power went down, due to weather. We have an ILA site there. We did see a little 12 second power outage. This was not service impacting, as the site was up and running on generator and worked beautifully like it should have. We were on generator for a couple of hours and it failed back over. We are working through processes and heading in a good direction.

All of our fiber as designed is underground. Danville where we transition from our fiber to where we are tying into fiber that we are leasing where we actually have to go on a pole mount and run for blocks because there was no other options. We were told it was underground and came to find out that it wasn't. Not core impacting.

The IDOT pedestals we were talking about, that is a situation, in that a roughly 10 mile run along the Dan Ryan where we actually jump into the median and run into their already existing conduit. They have the above ground pedestals already there. The original design from our contractor called for installing our own hand holes adjacent to those pedastal boxes and IDOT didn't want us putting all of those in. It would've been a lot more expensive. It was going to cost $700,000 for us to do that. By not doing that it was along the order of $460,000. We saved a lot in the construction but our concern was came to fruition in this situation.

Our contractor in that area is Meade and is IDOT's contractor as well. Meade has had some follow up conversations with IDOT about this situation, and we're hopeful that they might be open to moving from above ground pedastals to underground vaults. It would be nice to see that transition to where we are a little more protected.

In the meantime they fortunately had an extra pedestal box that they were able to get the production fiber spliced back in and covered up and protected. That was all day Saturday this past weekend. Because of issues with the cold and weather it took a little longer to get the temporary done. Now we have 3 locations that are above ground that do have core backbone but only because they are in transition from the temporary fix of the hit and the permanent solution that should be coming in a couple of weeks is back underground.

The ILA sites are redundant from a layer 3 perspective from a routing perspective. They will be redundant from a layer 2 perspective or switching perspective. Example, If Peoria goes down you will still be up and if Macomb goes down, you will still be up. Where they are not redundant is the 3 mile span that goes from your facility down to the peg fiber. That's not redundant because it is all on the same conduit. When we talk about that it is characterized as not redundant. All ILA sites are like that.

Community Colleges where a lot of the ILAs are all have that characteristic at least some distance and are not redundant.

Kirk asks Robin to mention about toying with piloting at the one particular school in terms of the fiber build and how that might play into E-Rate   It's not broad and we're not doing this everywhere but it might be worth mentioning and dovetailing on this project and what we've learned with the builds. The plan that we are kind of pursuing.

We have been asked by a number of sites and CAIs around the state and mostly by K-12 to do a fiber build and they would have some of that cost covered through E-Rate. Our answer has been yes to all of it and we need a little time to see how we might be able to do that. We had to get through the fiber project before we could address it. We haven't gotten very far with it but we don't have a concrete design. We have a meeting with them this afternoon to talk about it more. The idea would be that ICN then would entertain doing construction to a site and connecting them into the fiber. So building laterals to additional CAIs.

The advantage over having a commercial provider do it would be the Erate subsidy all goes toward building a product the commercial provider owns and the commercial provider never does reduce cost on it for the customer. The ICN case is we would build a product that once the cost was more amortized the cost to the school would then go down quite a bit. After that whatever it is to recover that initial cost would drop significantly. It would basically be the maintenance cost.

The other piece to that is that when a commercial provider does that build they are the only provider forever on that fiber. If they want to select a new provider they would have to put in new fiber. In this case they would have the option of having sort of a neutral party. They are getting ICN bandwidth but we also have other providers on the network.

Because of Erate schools rules you can never hand that fiber over to the school. That is correct. The school would continue to own that fiber.

There would be a cost savings to K-12 schools just like to the ICN when you stop leasing.

The Challenge for us to work through and will be very interesting through the pilot from Kirk's perspective is the timing of everything. Because we have to regear ourselves to what do we need to do to get out in front of this to make sure we are providing quotes in a timely manner to adhere to the E-Rate guidelines. What do we do internally to come up with a scope that is accurate enough and conservative enough that everybody can get necessary approvals and we don't miss the mark but it's not realistic to go to a contractor and say we need you to go out and invest a lot of time and do this down to this level of detail when it may be a year before you hear from us or you may never hear from us. Those are all things we'll work through but that's what we've been talking about and trying to nail down our process so we know whose doing what and by when and come back with a good product that doesn't miss the mark.

Status of Testing 40 gig and 100Gb Hardware

The 40Gb is operational and the 100Gb is also operational but not between Springfield and Chicago. That is in place and will probably be turned up in about 2 weeks. It has been tested in the lab and testing is completed and we're moving to rolling it out.

Jim asks about the K-12 Steering Committee earlier and wondering if Robin can address in terms of where that is going in terms of K-12 members and those in Higher Education and other partners that work with K-12 schools in their area.

There are a few initiatives taking place. There's ISBE working hard to come up with a plan to expand broadband to all of their schools around the state. The K-12 Steering Committee is looking at what would it take to connect all of our K-12 schools in Illinois with some sort of broadband service and when we talk about it, it is fiber. Obviously there might be other solutions available in certain parts of the state that are really the most cost effective or the only solution that is available. The thought is that there needs to be a push to keep this momentum going. There are other drivers like the PARCC testing. The online standardized testing is coming down the pike. They are moving to everything online for testing. This requires a lot of bandwidth.

There are a lot of things converging at the same time in addition to the E-Rate program for K-12, rethinking the rules and what they will fund and will they fund fiber builds and that sort of thing. We had submitted as did many people around the nation recommendations for changes in the Eriate funding. One recommendation we've been pushing for is moving forward, if the state were to fund a build, the State gets some of that build A lot of things are happening all at the same time. The K-12 Steering Committee is looking at what would it cost to connect all of the schools in IL or at least 1 school within each district with broadband services of fiber and how do we go about securing funding to do that. That means going to the Legislator and making the case here's how much it is going to cost for inside wiring and outside wiring and putting together that document working with ISBE to make that case.

The important piece there and going back to what Dennis was saying is that moving forward we're going to advocate from the provider that they prove why after a 3 or 5 year contract term the cost is the same. We've paid for the build and E-Rate actually paid for a good chunk of it and all of that service so why is the service cost still the same? What we've found with our build is with some of our laterals the ongoing monthly cost is $250 a month to connect.

Maybe there are some programs that the State helps the providers into an area and install fiber that some of that infrastructure is going to remain owned by the state or the school district to share throughout the community.

Our focus is K-12 and those are good targets just as the grant focused on CC as targets to spread out to but you really are picking up the community too and that is where the real win is going to be. When you go into a school district you are working with the Municipality, College, Library, City Hall and that will be part of that project. As you get those aggregate points that are neutral points because the fiber is no longer solely owned by the provider then you bring a lot of options in including commercial ones.

The E-Rate funding is pretty much limited to school campus. If the school is going to have a connection over the fiber using a Gigabyte connection to ICN over the fiber, but the fiber can support 10 Gigabytes and can support multiple paths there is no reason then that another entity couldn't use another path on that fiber I would think. Would that be true? I would think so. In some of the models the E-Rate funds cannot go to fund the build of an infrastructure that would be used by a commercial entity.

Even though it is pessimistic that there will be funding available there seems to be a lot of people to believe this is the time to focus on it. Whereas there would be reason to think there would not be any funding for these types of projects moving forward I think people are more optimistic.

Isn't there a chunk of money at ISBE that was dedicated for capital projects and the capital projects that that was dedicated for all of the eligible ones have been completed and there is a very large pool of money sitting in that capital project fund that they would like to have reallocated for this? Yes but there needs to be a lot more funds and it takes legislative support. It isn't like they would have to appropriate any more money to get the basic ones maybe supplemental funds. The good news is people are optimistic that something like this could happen.

Other Items
Fiber to premises-IL pioneered this approach with beginnings of the terra grid discovering that it was better to purchase as a capilization up front fiber as opposed to paying extortionist prices over time. This pioneering effort in Illinois lead today to Higher Education having already purchased now throughout the U.S. building on that model 68,000 miles of fiber. It is now a well established principle of cost savings moving forward with advanced services, having capacity and many benefits. Now companies are beginning to do this. Google has something like 100 thousand miles of dark fiber for its own organization. Ford Motor Company, Ganet Media and others are doing this and some municipalities are doing this.

Wouldn't it be useful to have an ongoing framework to allow this to happen in Illinois? Instead of having individual organizational entities struggle with this themselves to have a structure such that one they can learn about economics here and get a basic understanding of the finances upfront capitalization versus ongoing cost and the future savings. Step 1 is educating the community and step 2, having a way (came up in earlier discussion) of simply saying we get it, we want to do it and now we would like to purchase this in some way or arrange for the capitalization for it and maybe it is ICN that is the lead on that. To say whether they do it themselves or find somebody to do it to say you use your own money to implement your fiber and here is how you do it. Here is who you go to and for the ongoing maintenance who fixes things if there is a cut. There are companies that do it at a very low cost.

Who undertakes that? Is that ICN, ICN with some partners; is that a different entity all together?

Robin states he is interested in the 2nd one. What ICN has learned through the fiber build is that the knowledge would be available. The whole idea about managing the network, the contractors we have, the fiber locate we have and fiber management software. We have a lot of those pieces now.

It could benefit many communities to have kind of the factory model to stamp these things out in many locations. Because all the basics exist it just needs to be brought together.

It is a potential marketing tool for ICN if that were to happen and could happen with schools and municipalities because it is something right now. The statement of people don't know what they don't know. Only thing they know now is the only way to get fiber they're going to have to contract with one of these groups and bite the bullet and expect that is going to be an ongoing expense. If ICN comes in and make them aware of an alternative I have a feeling that people will line up to take advantage of that alternative. The economics are so huge when it comes to trying to pay for that infrastructure over and over again.

The fulfillment part is people would line up but right now but there is no place for them to line up to. It would be a huge benefit to Illinois.

It is useful for an organization like the ICN to say we believe this is the right direction to go in and here are schools that are doing it that you can talk to. Just that alone is huge. Having an endorsement saying here's a direction you should be looking into.

Have ICN organize a special set of regional meetings specifically on this topic or one statewide meeting or a combination of both.

The advantage ICN has right now is that they've gone through the fiber project and have all the resources and knowledge that they've gained by going through that experience. Schools have no clue as to what it would take to do this themselves other than a hope or wish that they could. There is no reason to put it on them to do it alone. You want schools to have a path for the knowledge part, the education part and then the fulfillment part.

If the State can identify the vendors and the people who can do the builds. Again this is where ICN can leverage some of its experience and bring that to the table so that you don't get some fly by night company that's not credible to get to where you need to be.

We should have this on the agenda for the next meeting.

In relation to this marvelous new network. I think there was a hint of doing something to showcase it. It might be eventually to showcase some of the capabilities there. Sort of the way US Ignite came to Chicago and did a nice demonstration of advanced networking applications. Maybe not as extravagant as that one was but something like that. That would be nice. Good feedback.

Meeting Adjourned
A motion to adjourn the meeting at 11:31 a.m. Dennis Gallo second the motion and the motion carried.