



UPDATE ON THE DEKALB COUNTY DATA FIBER GRANT

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REVIEW OF THE DATA VISION

- ▶ The DeKalb Advancement of Technology Authority is committed to creating a fiber optic system throughout the DeKalb County Region that can be used for state-of-the-art high speed connectivity. The authority will work with public and private organizations in a cooperative to share the costs of a fiber optic system to:
 - ▶ Increase broadband technology within the DeKalb County Region.
 - ▶ Reduce the cost of broadband connectivity for the DeKalb County Region.
 - ▶ Stimulate new economic opportunities for the DeKalb County Region.
- ▶ We are committed to bringing connectivity to rural areas in DeKalb County and assist communities with technology and transform these areas with affordable broadband connectivity.



REVIEW OF HOW THE STIMULUS MONEY WORKS FOR DATA?

- ▶ Construction of this project would employ 25-30 people over the next year building the infrastructure (Immediate Jobs).
- ▶ DeKalb Advancement of Technology Authority would contract to maintain or partner in the fiber network and would employ 5-6 people over the life of the fiber (Long Term Jobs).
- ▶ Small to medium businesses can reduce costs for connectivity allowing retention of employee's. Current network efforts has retained over 3 business in DeKalb area. Private companies continue to expand off the fiber backbone.
- ▶ Local broadband Internet Service Providers will have the opportunity to expand and add jobs providing new services to our communities.
- ▶ Planting one Data Center in the DeKalb area can result in over \$100M of construction, over 30 technology jobs and increased tax bases.
- ▶ Broadband for schools will no longer be a limiting factor creating an education network between schools and the ICN.
- ▶ Interconnect schools and share resources.
- ▶ Work with NIU for the development of new educational programs.
- ▶ Connect to Internet 2 through NIU for grant programs directed to K-12.

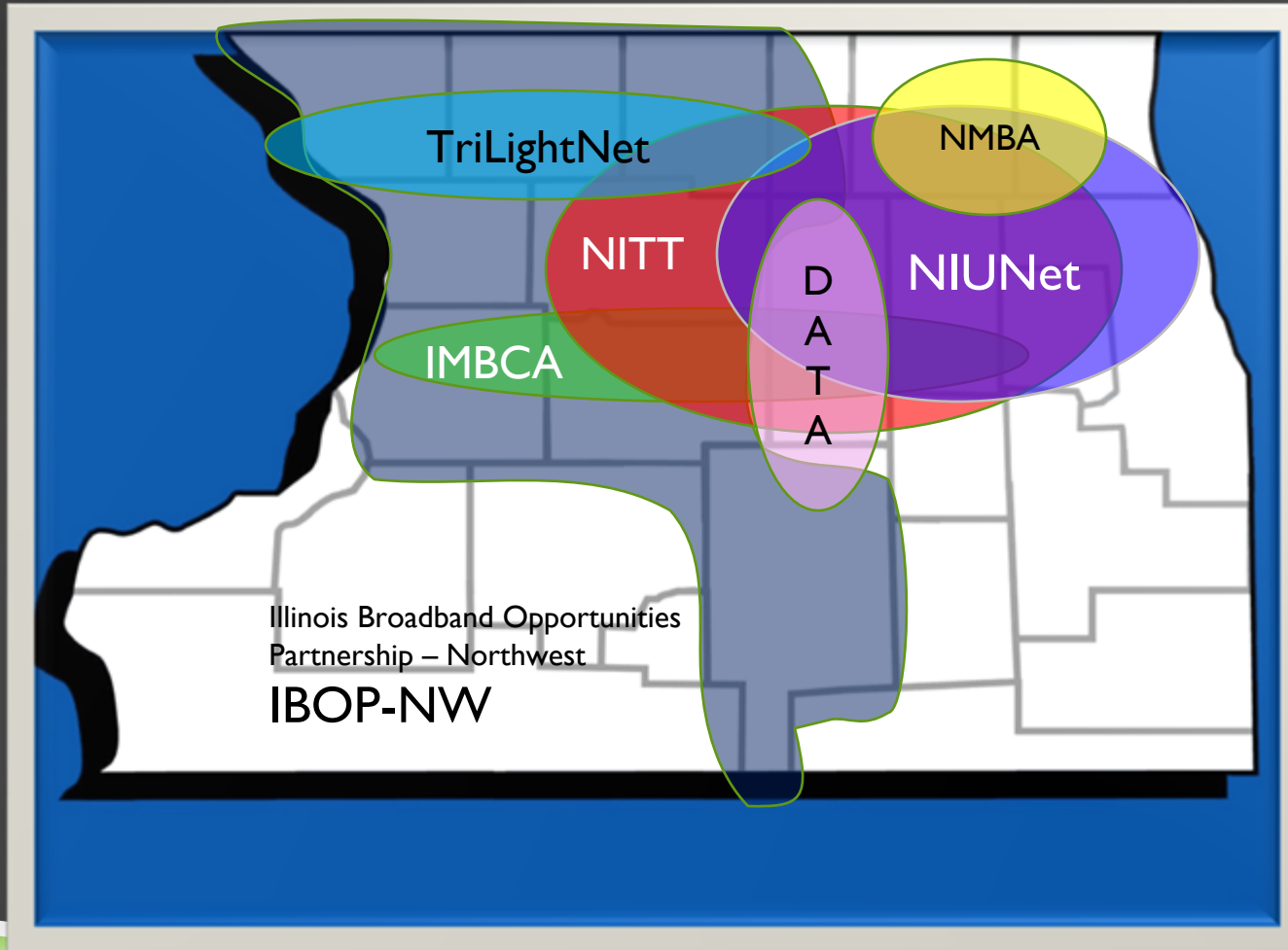


WHAT WE REQUESTED FROM PARTICIPANTS:

- ▶ Letters of support for the project
- ▶ Key facilities in your area that the fiber runs needs to be included (City Offices, Industrial Parks, Libraries, and Farms) within a mile of the current fiber backbone.
- ▶ Support of a financial plan that would include roughly \$5,500 to \$6,500 a year/facility to support the ongoing maintenance of the network.



NIU PARTICIPATION IN BROAD BAND INITIATIVES



NIUNet - Northern Illinois University Research and Education Network.

IMBCA – Illinois Municipal Broadband Communications Association for Economic Development.

NITT – Northern Illinois Technology Triangle for Economic Development.

TriLightNet – A medical network for HIE development and healthcare.

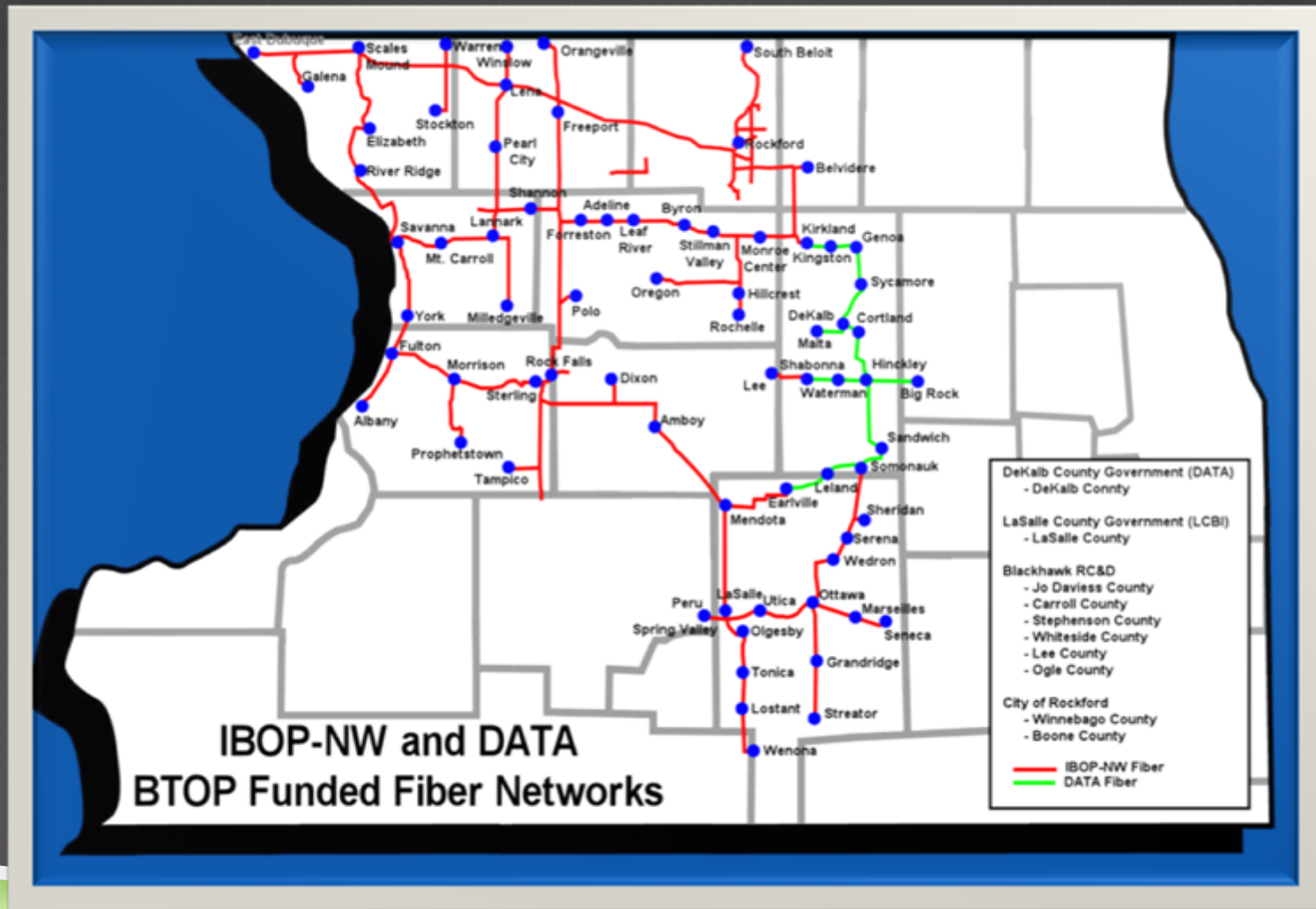
NMBA – Northwest Municipal Broadband Authority – A municipal and education network.

DATA – DeKalb Advancement of Technology Authority – A BTOP funded grant for DeKalb County.

IBOP-NW – The Illinois Broadband Opportunities Partnership – A nine county BTOP funded grant awarded to Northern Illinois University.



IBOP-NW AND DATA



COST AVOIDANCE(PUBLIC)

- ▶ Local government will have dark fiber & multi-gigabit speeds.
- ▶ Consolidation of servers in buildings reducing hardware and software costs up to 50%.
- ▶ Ability to share or combine services or licensing for reducing costs by collaborating with other institutions.



EXAMPLES OF COST AVOIDANCE

- Reduction of phone costs and increasing capacity of coverage for phone services. Two examples are:
 1. District 428 High School reduced costs from over \$2,000/Month to \$480/Month
 2. District 427 expenditures reduced from \$8,000/Month to \$2,000/Month
- Ability to provide advanced educational courses from universities for P-20 programs providing more options, less travel and interruption of schedules.



FURTHER ANALYSIS OF COST AVOIDANCE



Securing the Future for our Community Anchor Institutions (CAI's)

- ▶ Broadband annual growth for a public entity is 45%
- ▶ Average cost for transport in Northern Illinois is \$168/Mb/Month
- ▶ Average cost for a T-I in Northern Illinois is ~\$450/Month
- ▶ The best cost for ISP services without transport is \$48/Mb/Month.



STABILIZE PRICING FOR GOVERNMENT

Improve and stabilize the price for Internet access for governments:

- ▶ DATA will cost \$7,000/year for Gigabit transport or dark fiber per facility.
- ▶ The Illinois Century Network (ICN) is planning significant increases in bandwidth allocations for schools, libraries and museums.
- ▶ Alternate ISP costs are estimated to be \$25 or less per megabit.



OTHER METHODS FOR SAVINGS ON HIGH-SPEED BROADBAND NETWORKS

- ▶ Consolidation of phone services using VoIP.
- ▶ Consolidation of video surveillance systems.
- ▶ Distance Learning for professionals.
- ▶ Streaming Video Services.
- ▶ Cloud based services including access to the Illini Cloud.



COST SAVING ON CENTRALIZED SERVICES

Item	Quantity	Unit Cost	Total Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Server Hardware	1	\$ 7,000	\$ 7,000	\$ 1,400	\$ 1,400	\$ 1,400	\$ 1,400	\$ 1,400
Windows Server License	1	\$ 700	\$ 700	\$ -	\$ -	\$ -	\$ -	\$ -
Windows Server Cals	200	\$ 92	\$ 18,400	\$ 460	\$ 460	\$ 460	\$ 460	\$ 460
Administrative Tasks (6 Hours Per Week)	312	\$ 35	\$ 10,920	\$ 10,920	\$ 10,920	\$ 10,920	\$ 10,920	\$ 10,920
Application (e.g. Exchange Server)	1	\$ 699	\$ 699	\$ 699	\$ 280	\$ 280	\$ 280	\$ 280
Application (e.g. Exchange Cals)	250	\$ 67	\$ 16,750	\$ -	\$ -	\$ -	\$ -	\$ -
Total Costs			\$ 54,469	\$ 13,479	\$ 13,060	\$ 13,060	\$ 13,060	\$ 13,060

4 Servers 5 Year TCO	\$ 226,540
1 Server 5 Year TCO	\$ 120,188
Total Savings over 5 Years	\$ 106,352

Savings of 53%
over 5 years

Based on a Microsoft Exchange distributed server model over a limited network. Similar models can apply to video surveillance, administrative services, and media streaming.



DESIRED CAI BROADBAND SPEEDS

CAI Category	Egress Speeds	Transport Speeds
K-12 Schools	100Mb	1Gb
Hospitals	1Gb	1Gb
Community Colleges	1Gb	1Gb
Municipals, Local Gov	100Mb	1Gb
Libraries	100Mb	100Mb
Emergency services	100Mb	1Gb
Other CAI	100Mb	1Gb

Without a network like DATA, these network speeds are not affordable to any community anchor institutions.

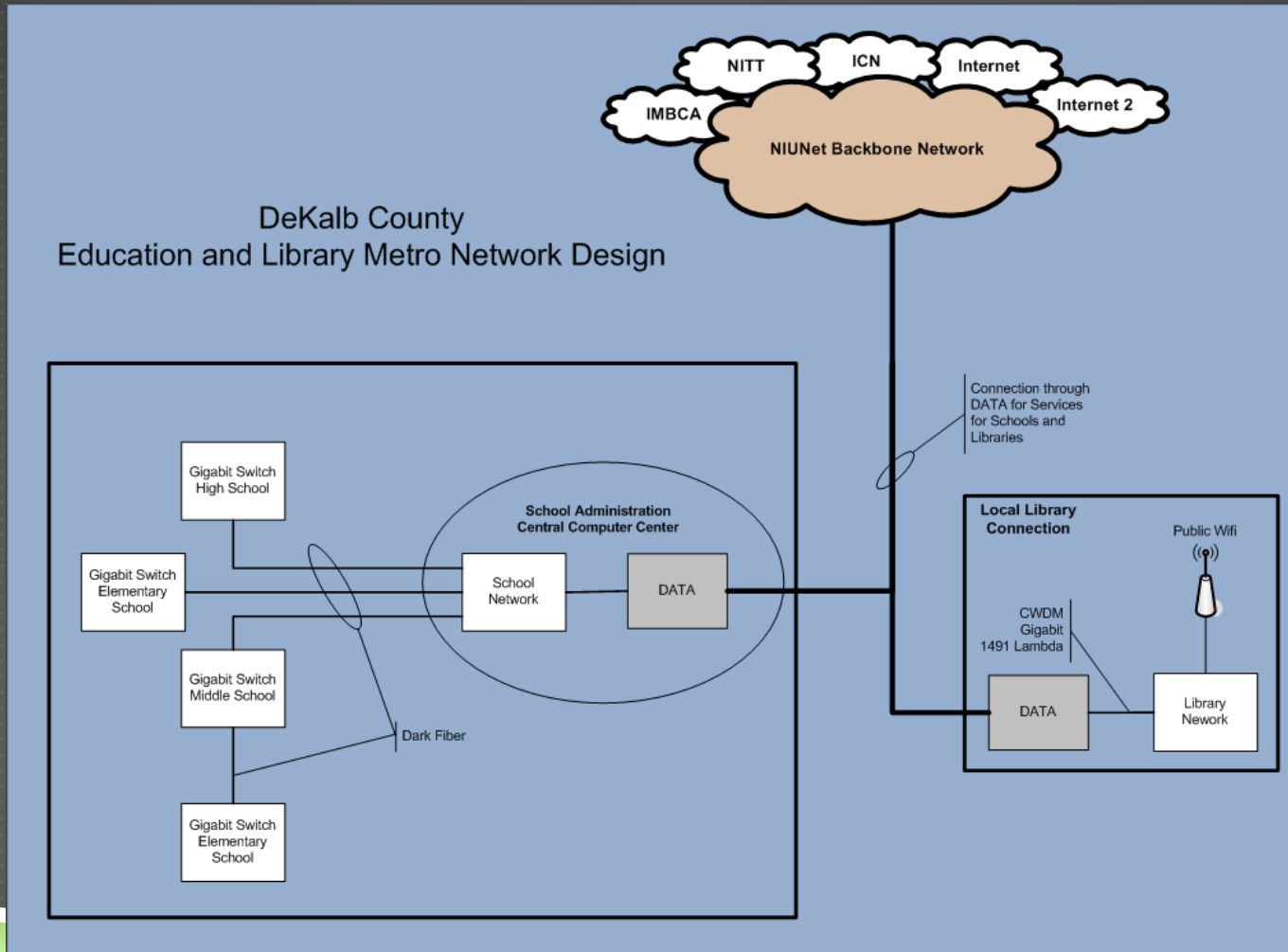


TREND ANALYSIS 45% GROWTH VS. 1 GIG CONNECTION THROUGH DATA

Bandwidth Base Increase 45%/Year in Mb	3.0Mbs	4.4Mbs	6.3Mbs	9.1Mbs	13.3Mbs
Costs/Year for Services @ Avg T-1 Rates of \$450/M	\$ 10,512	\$ 15,418	\$ 22,075	\$ 31,886	\$ 46,603
Estimated iFiber Costs for 1 Gigabit	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000



TYPICAL EDUCATION NETWORK MODEL



NEW NETWORKS FOR SCHOOLS

- ▶ The DATA grant included new equipment that will be controlled by the schools as part of the grant.
- ▶ The connection between schools is looking very probable that it will run at the rate of 10Gigabits.
- ▶ The egress connection to the DATA network will run at 1 Gigabit allowing all schools in DeKalb County to communicate at full rates with no restriction to each other.
- ▶ Connected directly to NIU
- ▶ Connected Directly to Kishwaukee Community College



DATA PRICING MODEL

- ▶ Each facility using the DATA fiber will be charged \$7,000/year. Schools and Libraries are able to take advantage of E-rate for these connections giving a 40-90% reduction in rate depending on the schools USAC rating.
- ▶ The yearly break down of the \$7000 costs are:
 - ▶ \$500 Membership Fee
 - ▶ \$1000 Network Operations, Change Management and support of the network.
 - ▶ \$1500 for Core Network Equipment Refresh Costs
 - ▶ \$500 for Core Equipment Maintenance
 - ▶ \$3500 for Cable Plant Maintenance



DATA PRICING MODEL BASIS

- ▶ To avoid risk to DeKalb County, conservative estimates of participants was considered.
 - ▶ We must have 40 facilities at minimum signed up to meet the pro forma requirements (we are currently on target to meet that goal).
 - ▶ The pricing model does not consider any private businesses using the fiber network.
 - ▶ Several inquires from private businesses has been made expressing interest in purchasing fiber.



POSITIVE EFFECTS ON THE PRO FORMA (EXAMPLES)

- ▶ If 12 fibers are sold to private companies:

Projected Subscribers with Proforma

Overall Performance

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Overall Expenses	\$285,000	\$295,800	\$305,357	\$315,927	\$325,770	\$376,093	\$387,681	\$400,601
Revenue Resources	305,450	319,750	325,130	334,340	338,470	347,680	351,810	361,020
Cash Reserve	20,450	44,400	64,174	82,586	95,286	66,873	31,002	(8,579)
Refresh Reserves	60,000	121,500	181,500	243,000	303,000	364,500	424,500	486,000

Projected Subscribers with Proforma

Overall Performance

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Overall Expenses	\$265,000	\$275,200	\$284,139	\$294,073	\$303,260	\$352,908	\$363,800	\$376,004
Revenue Resources	305,450	319,750	325,130	334,340	338,470	347,680	351,810	361,020
Cash Reserve	40,450	85,000	125,992	166,259	201,469	196,241	184,252	169,268
Refresh Reserves	60,000	121,500	181,500	243,000	303,000	364,500	424,500	486,000

CAI Costs can go down \$500/Year to \$6500/Year



If DATA gets 50 CAI's instead of 40

Projected Subscribers with Proforma

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Projected Subscribers with Proforma

Overall Performance

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Overall Expenses	\$300,000	\$311,250	\$321,270	\$332,318	\$342,653	\$393,482	\$405,592	\$419,049
Revenue Resources	375,450	389,750	395,130	404,340	408,470	417,680	421,810	431,020
Cash Reserve	75,450	153,950	227,810	299,832	365,649	389,847	406,065	418,036
Refresh Reserves	75,000	136,500	196,500	258,000	318,000	379,500	439,500	501,000

CAI Costs go down by \$1000/Year to \$6000/Year in this model



DATA SUMMARY

- ▶ The DATA network was designed to meet the needs that the DeKalb School Technologist Requested.
- ▶ Several outreach sessions were presented on the estimated costs and methodology DATA that were acceptable for schools to move the project forward.
- ▶ The DATA network pro forma is designed to utilize the private sector to help maintain or reduce the costs of the network in the future.
- ▶ The DATA network allows schools to control their future interest between schools without having to re-negotiate expensive contracts.



THANK YOU!

