

History and Context

I-Light and I-Light2

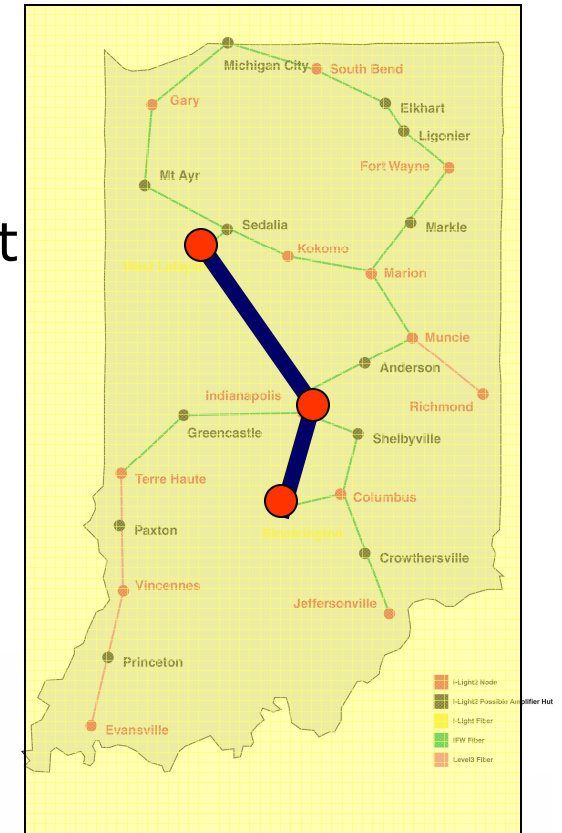
- Indiana University
- Purdue University
- Indiana Higher Education Telecommunication System



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I-LIGHT – IU and Purdue collaboration

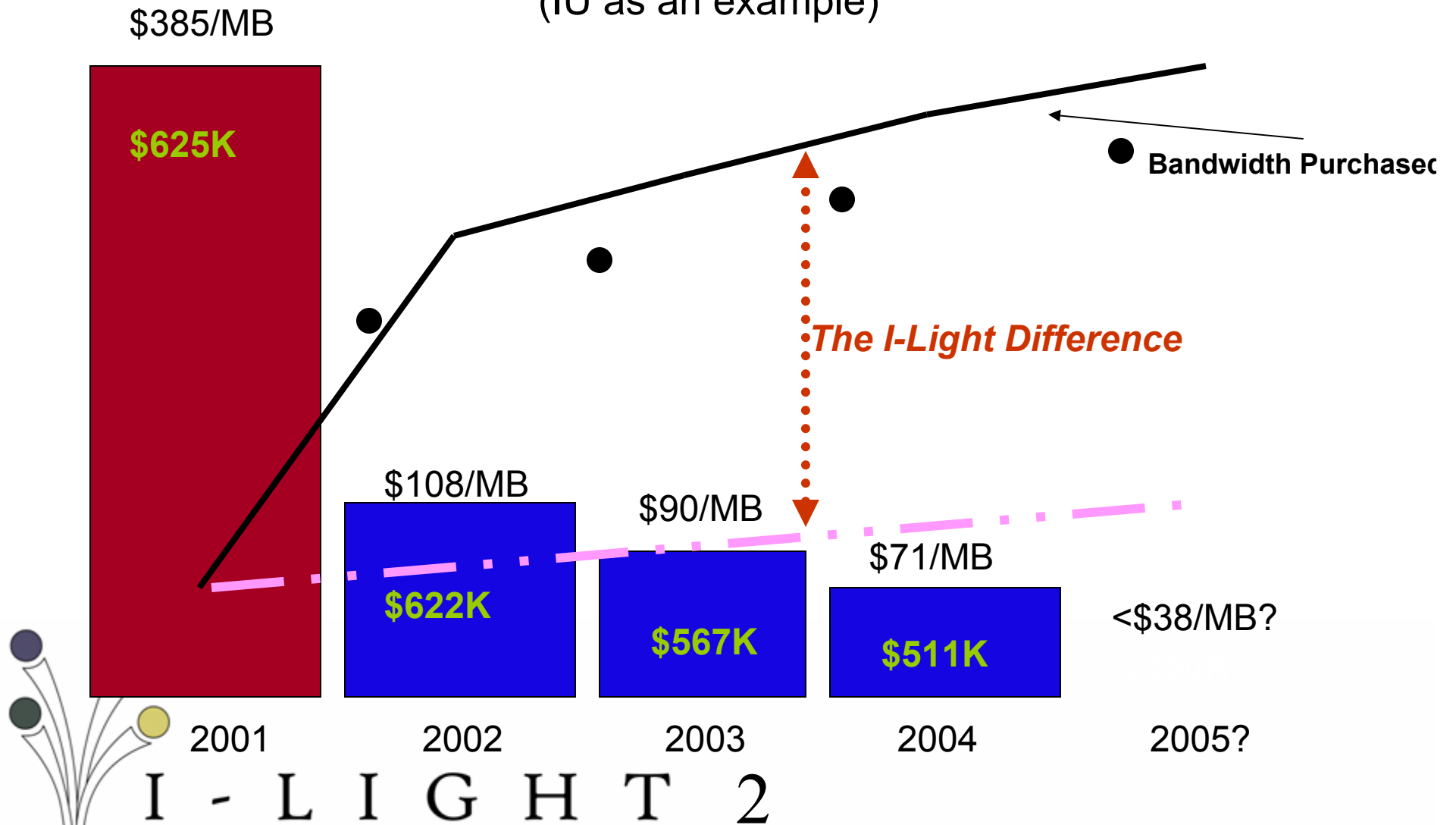
- I-Light has been an important **success** in terms of leveraging a capital investment to reduce costs and increase IT impact at IU and Purdue
- \$5.3 million in state appropriations
- Brought online quickly and within budget
- Resulted in a quantifiable **order-of-magnitude** increases in connectivity for no additional ongoing costs
- Facilitated **tremendous improvements** in research collaboration between IUB, IUPUI and Purdue, and extended our options beyond Indiana



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Costs for Internet Usage

(IU as an example)



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I-Light Success – Fostering Research

Providing the foundation for innovation



I-Light makes possible extensive growth in research across a wide variety of applications and areas.

This increases Indiana's involvement in national and international research activities

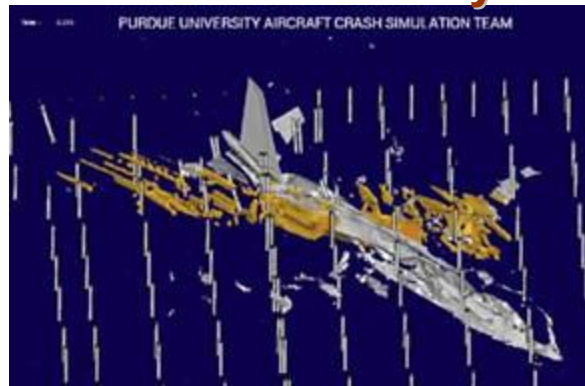
Educational Advances



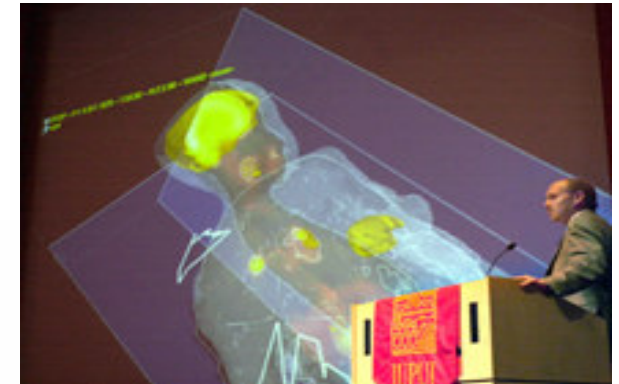
Visualizing Complex Data



Homeland Security



Telemedicine



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Project Partners

I-Light 2 has been designed by the same group responsible for the highly successful I-Light Project:

– **Indiana University**



– **Purdue University**



– **Indiana Higher Education
Telecommunication System (IHETS)**



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What Will I-Light2 Do?

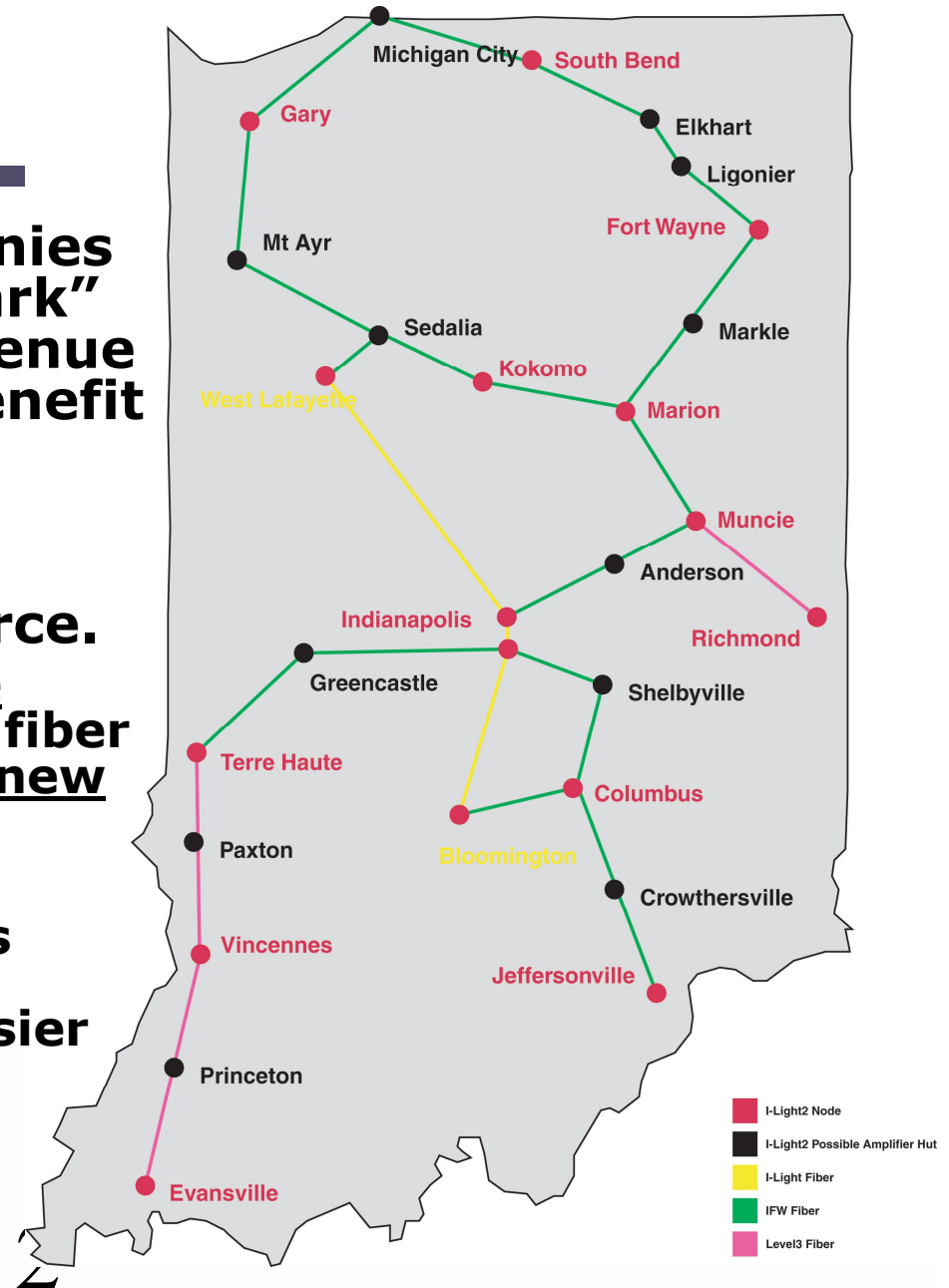
- Create **economic value** from some of the miles of 'dark fiber' in place. Now, that fiber will generate revenue for the private sector owners *and* direct benefit for Indiana communities today...
- Help **connect regional networking** projects and technology centers around the State...
- Help **eliminate the 'academic digital divide'** by providing high-speed access beyond just IU and Purdue to the rest of Indiana's higher education community, K-12, Libraries, etc...
- **Enhance the research, education, and economic development** through the State and expand Indiana's growing reputation in advanced high-speed networking...



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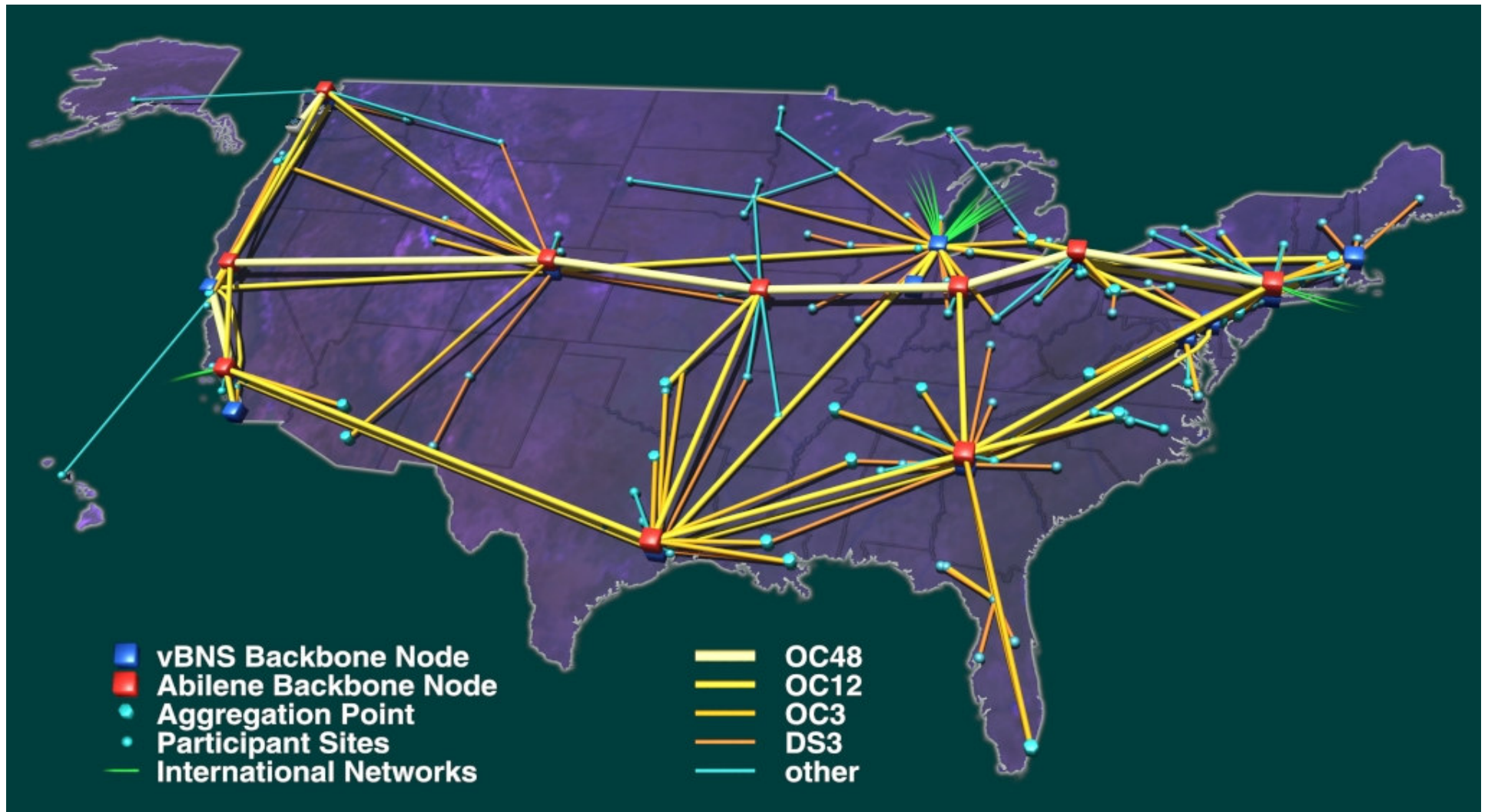
Empowering Indiana's Digital Economy:

- Telecommunications companies in Indiana have miles of "dark" fiber which generate no revenue for the private sector nor benefit to local communities.
 - Akin to a car without gas.
- **I-Light 2** unlocks this resource.
 - Working with the private sector to light their dark fiber infrastructure, not build new fiber.
 - State investment assures placement of high-speed digital on-ramps for Hoosier communities.



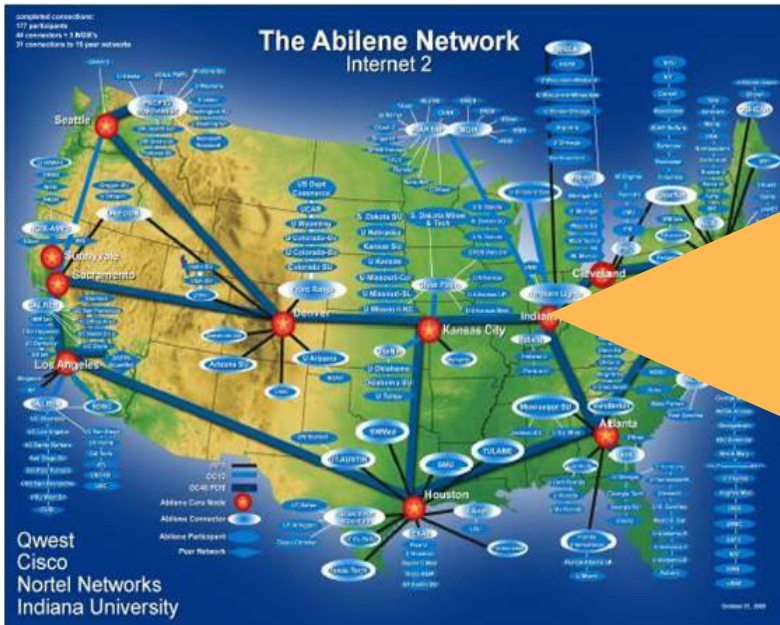
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Internet 2 Topology



The Emerging National Research Fiber Network

As a natural progression for Internet2, a nationwide, all-fiber backbone infrastructure is quickly developing into the reality of a coast-to-coast network.



Indiana can play a key role in the development of this national research-focused network by growing our internal infrastructure to distribute effectively

its benefits, not only to our main research campuses, but throughout the state's higher education, K-12, and municipal communities.

Making this investment – building out while other states are standing by due to the same fiscal conditions we all face – can be a tremendous advantage to Indiana. We can literally *move forward at accelerated speed* while others are frozen or moving backward!



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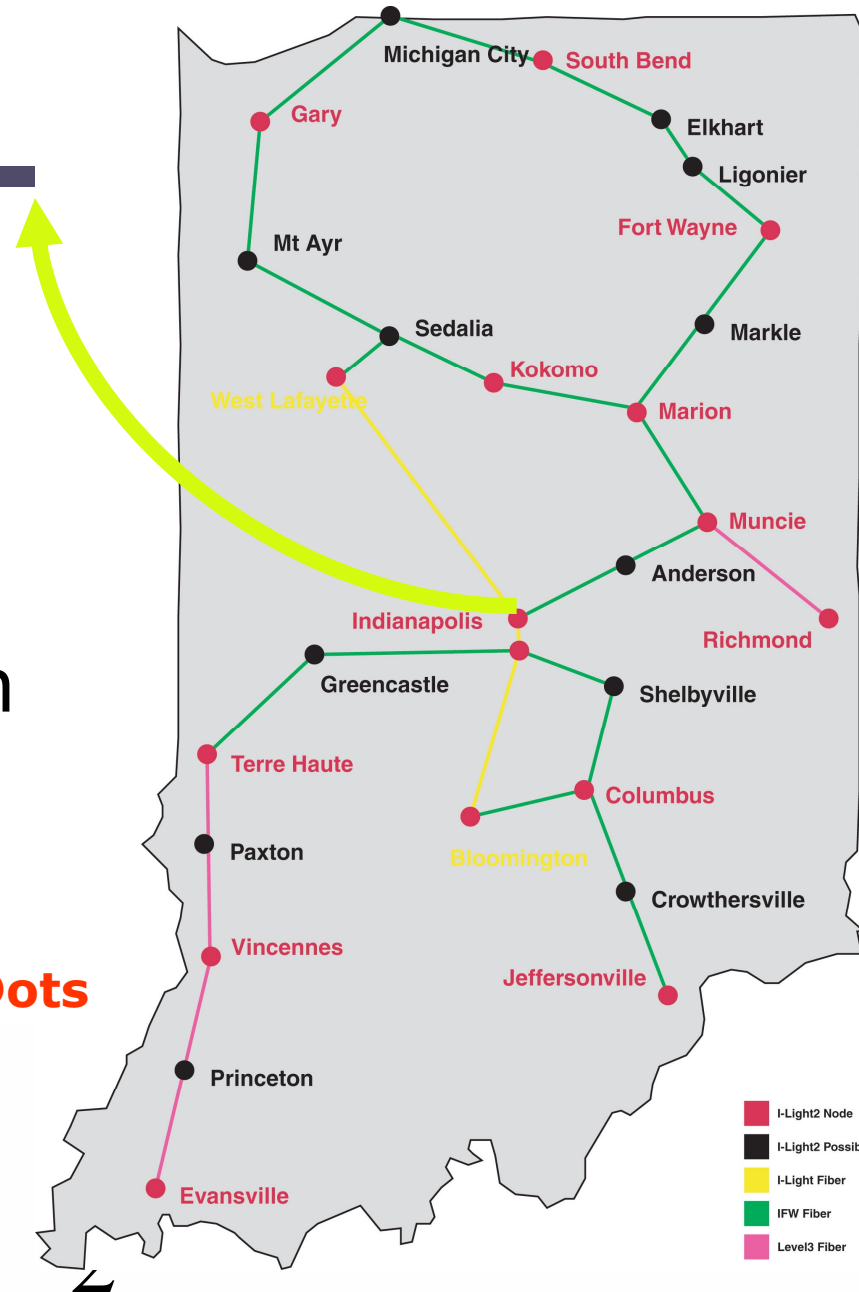
I-Light2

- I-Light2
 - \$15M over three years
 - \$10M appropriation
 - Direct Run to Chicago
 - 12 new nodes **Red Dots**

• 15 total



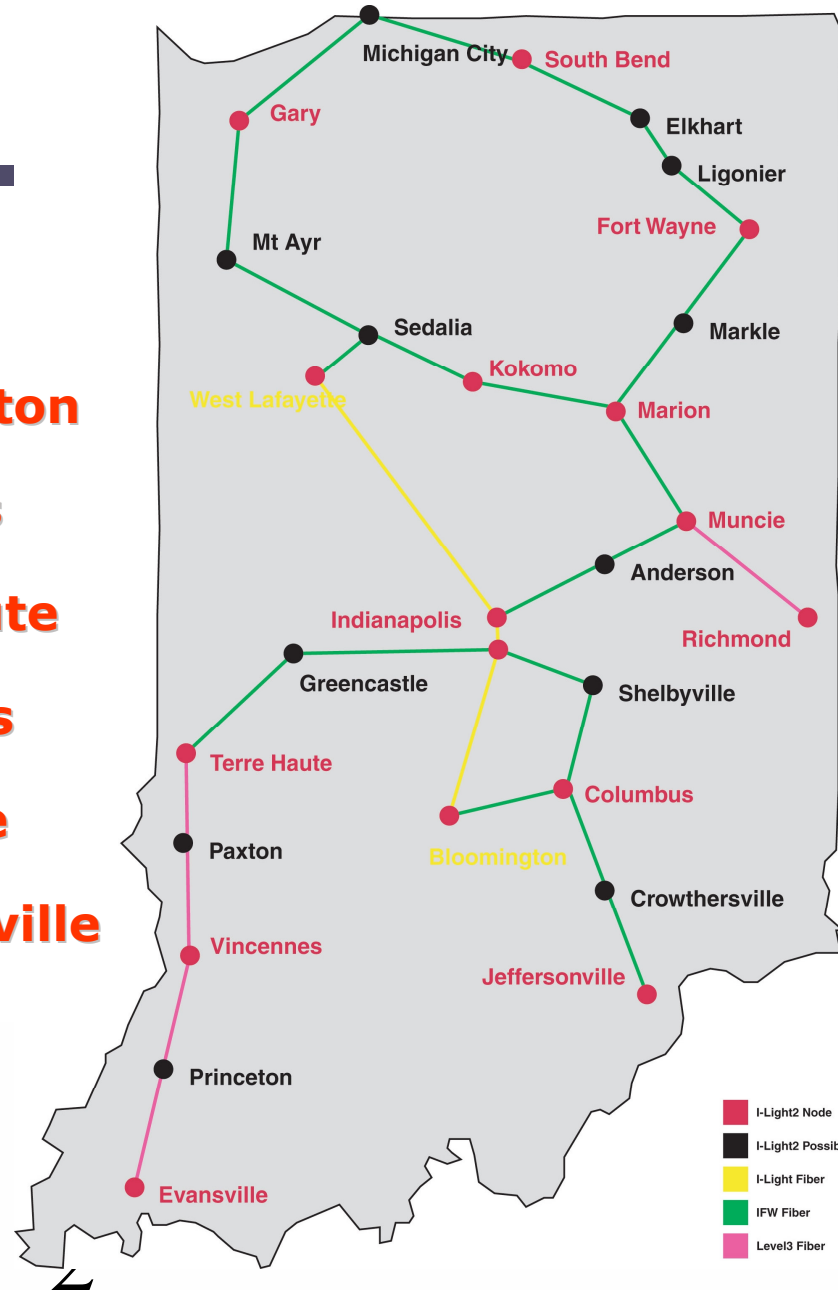
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I-Light2

NODES

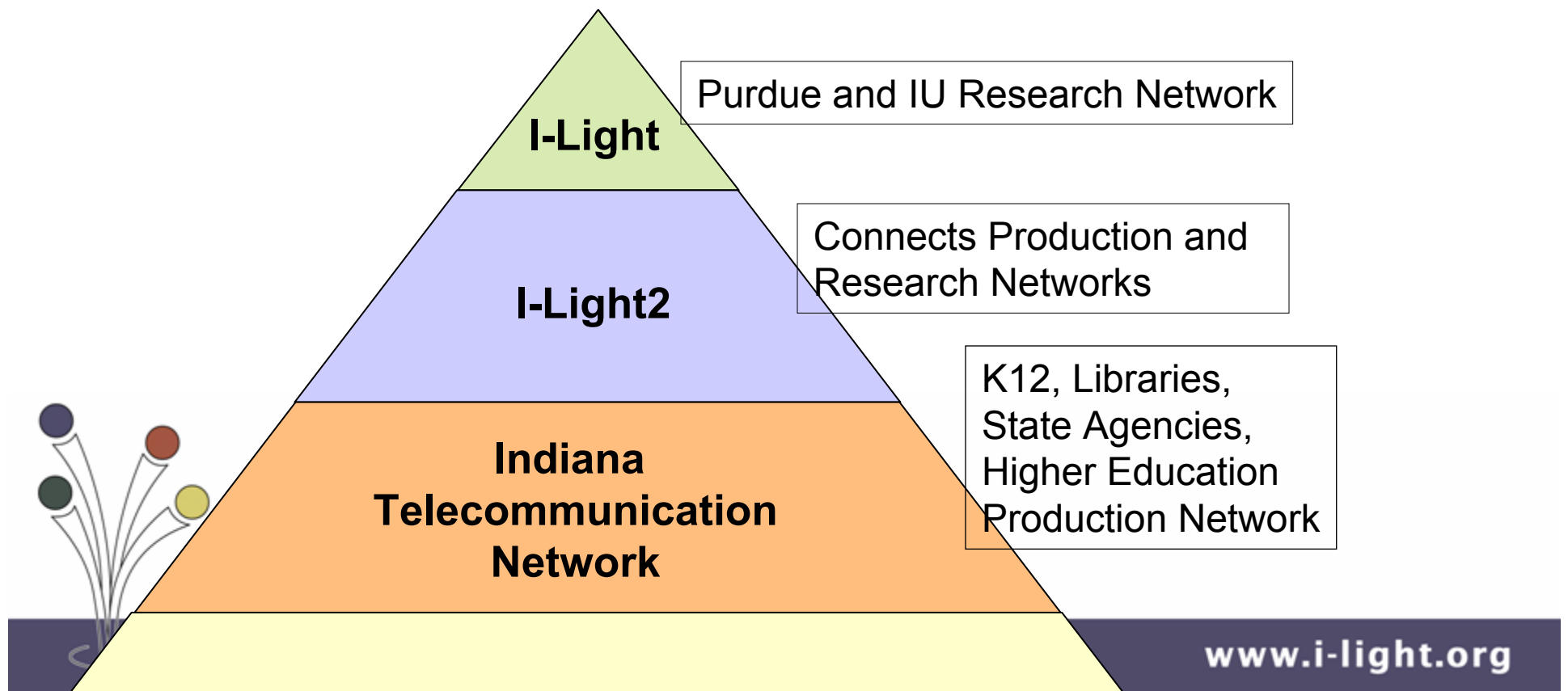
- **Muncie** (BSU)
- **Richmond** (IU-East)
- **Marion** (IFW)
- **Fort Wayne** (Indigital)
- **South Bend** (Union Station)
- **Gary** (US Signal)
- **Kokomo** (IFW)
- **Lafayette** (Purdue)
- **Bloomington** (IFW)
- **Columbus** (IFW)
- **Terre Haute** (ISU)
- **Vincennes** (VU)
- **Evansville** (USI)
- **Jeffersonville** (IFW)



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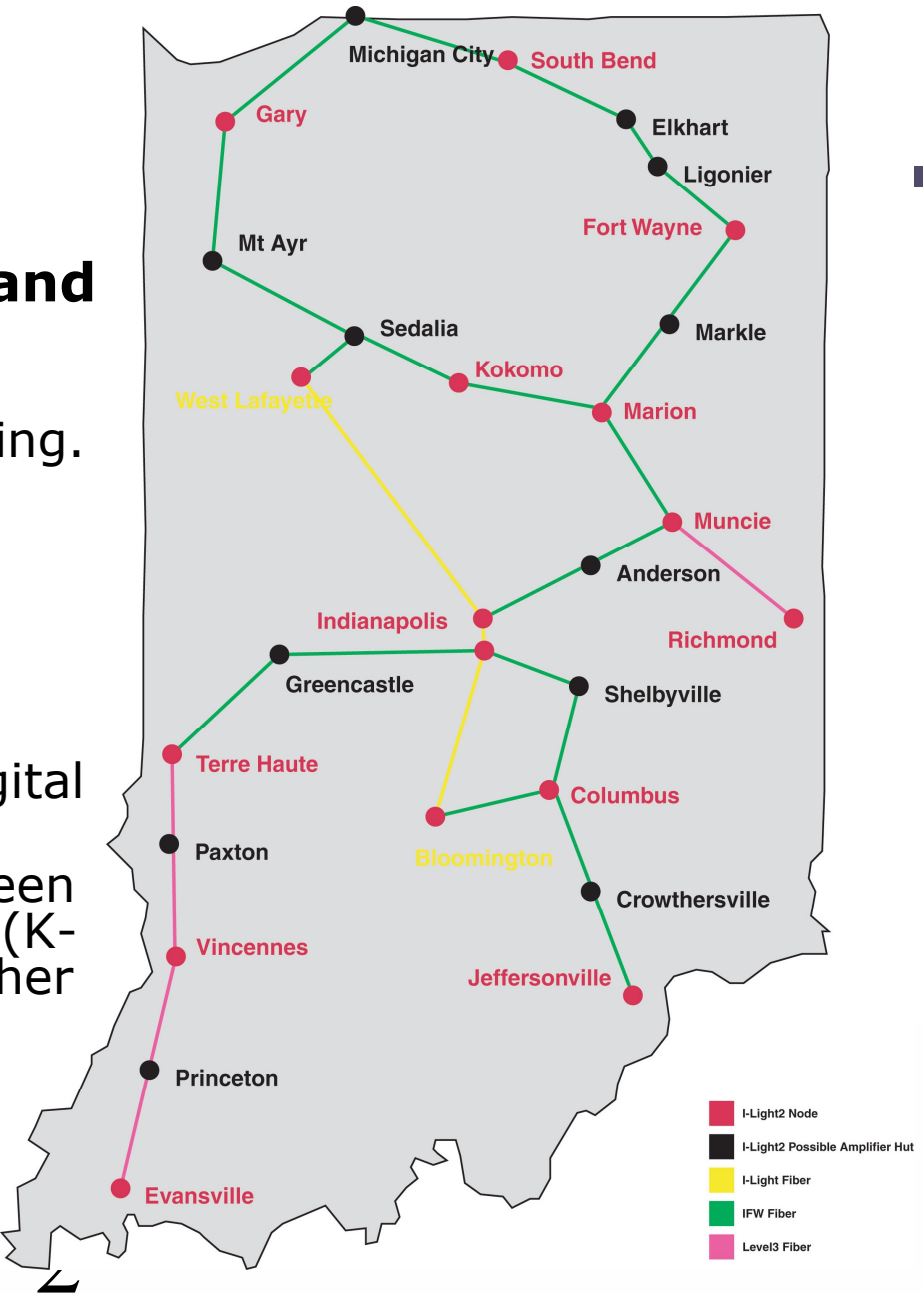
How it all fits together

- **I-Light**...Purdue and IU...success in providing value
- **I-Light2**...links production and research space
- **ITN**...Production network



Bridging Indiana's Academic Digital Divide

- **I-Light created new opportunities for Purdue and Indiana Universities.**
 - Enhanced collaboration and attracted new research funding.
 - Created new learning opportunities.
- **I-Light 2 expands these opportunities.**
 - Eliminates the "academic digital divide" in higher education.
 - Supports collaboration between all educational communities (K-12, community colleges, higher education).
 - Facilitates lifelong learning.



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I-Light 2 Status:

- **RFP for Fiber...**

- One Contract done...
 - IFW...\$3.9 million
- One Contract in progress...
 - Level3...\$875k

- **RFP for Node and Networking Equipment...**

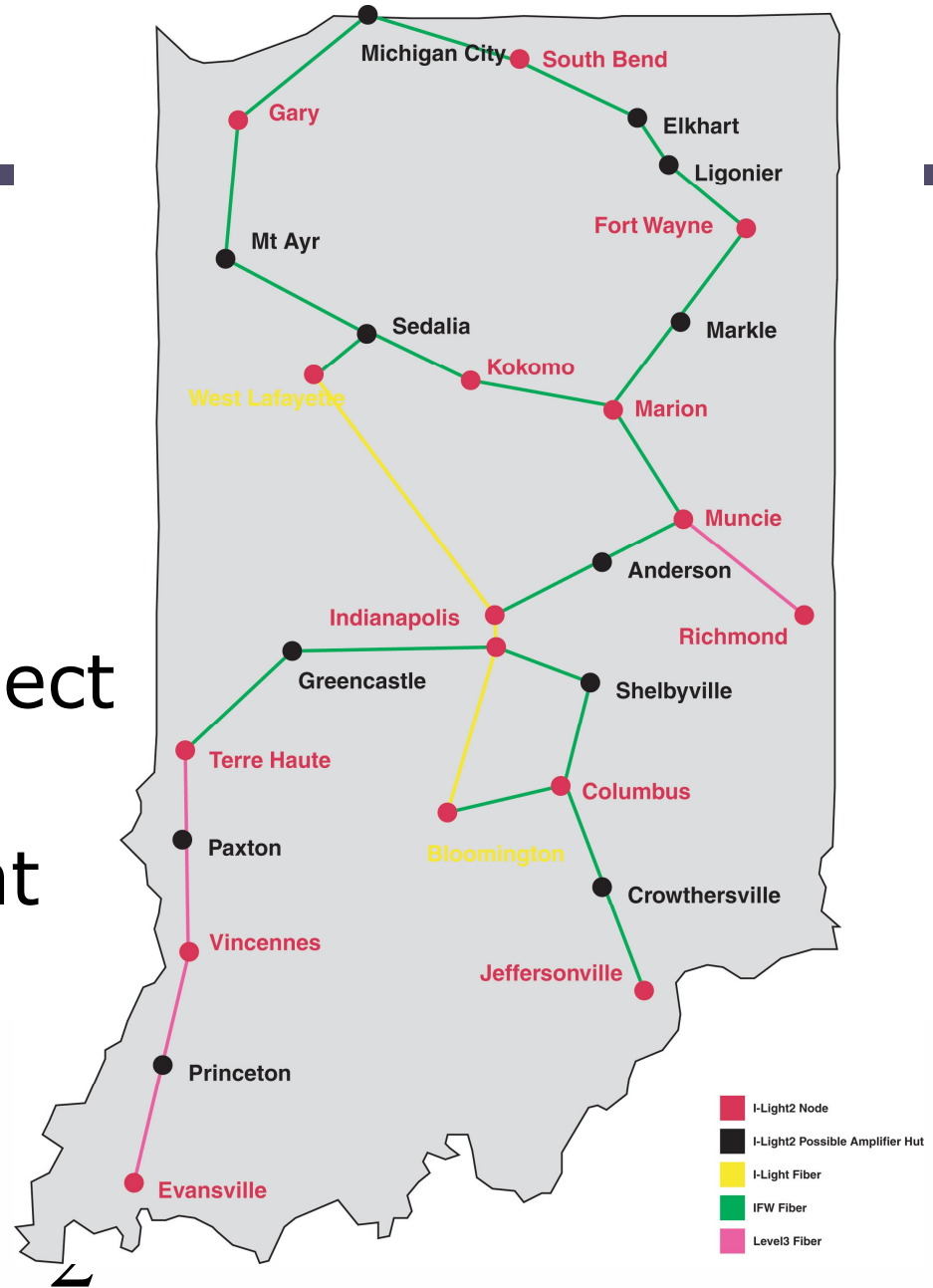
- Re-release...revised specs.



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I-Light2

- I-Light2 Budget
 - Fiber Backbone \$4.96M
 - Fiber to Interconnect \$116k
 - Equipment to Light \$4.5M



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I-Light2 Business Model

Based on Gigapop model across the country:

Tiered User-base

From...

- 5 mbps Internet access
- 100 mbps Intranet pipe

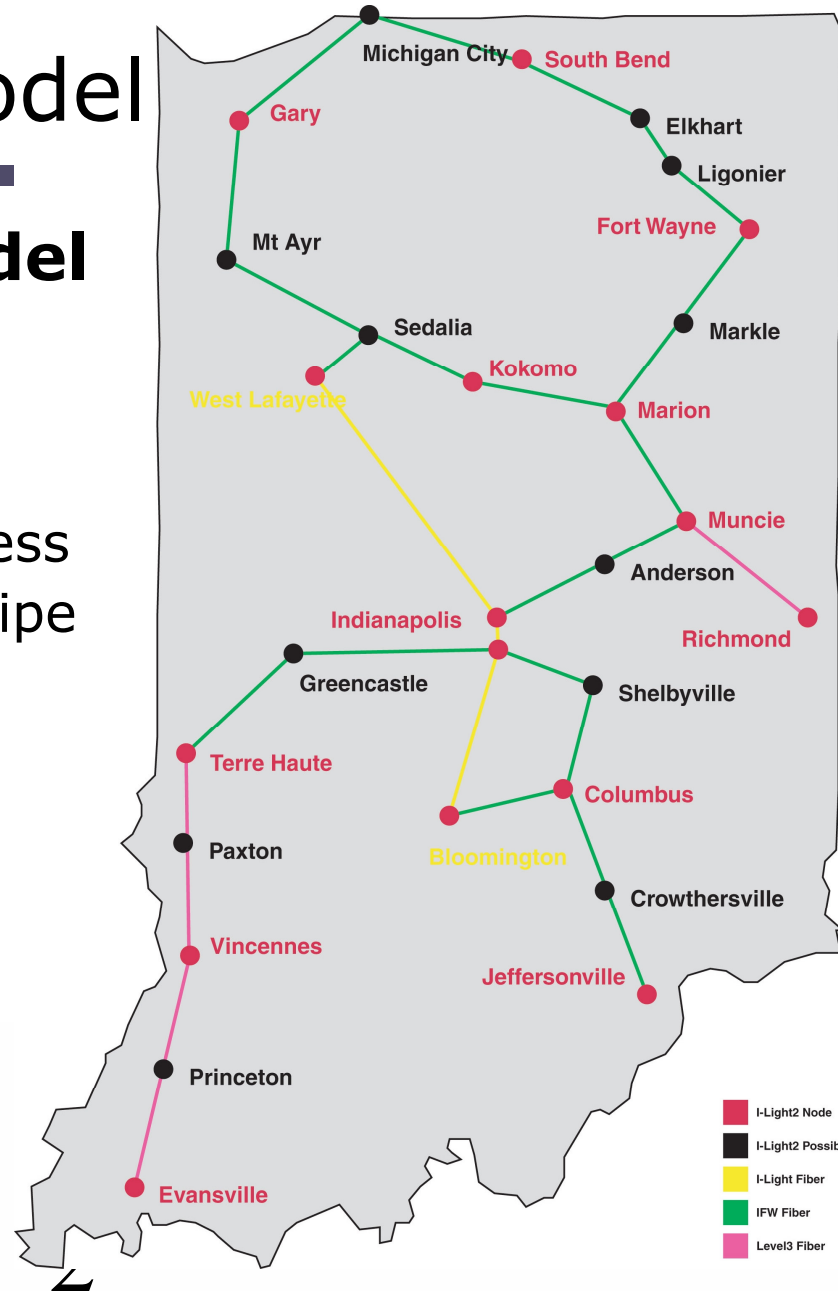
To...

- 100 mbps Internet access
- 1000 mbps Intranet pipe

- Additional Commodity Internet--\$60 (or less) mbps/month



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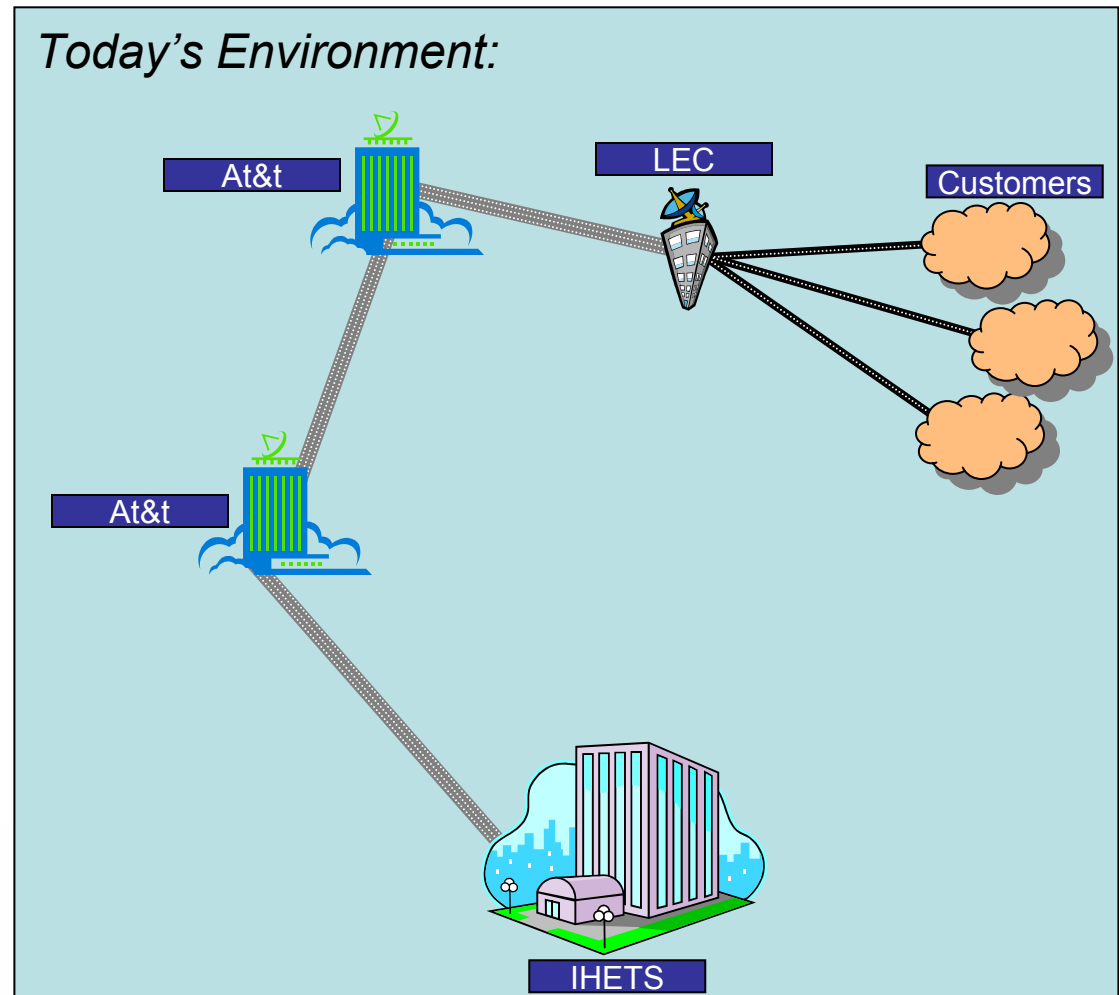


I-Light2 & State Network

Today:

All ITN circuits
backhauled via
Leased carrier
facilities

Today's Environment:



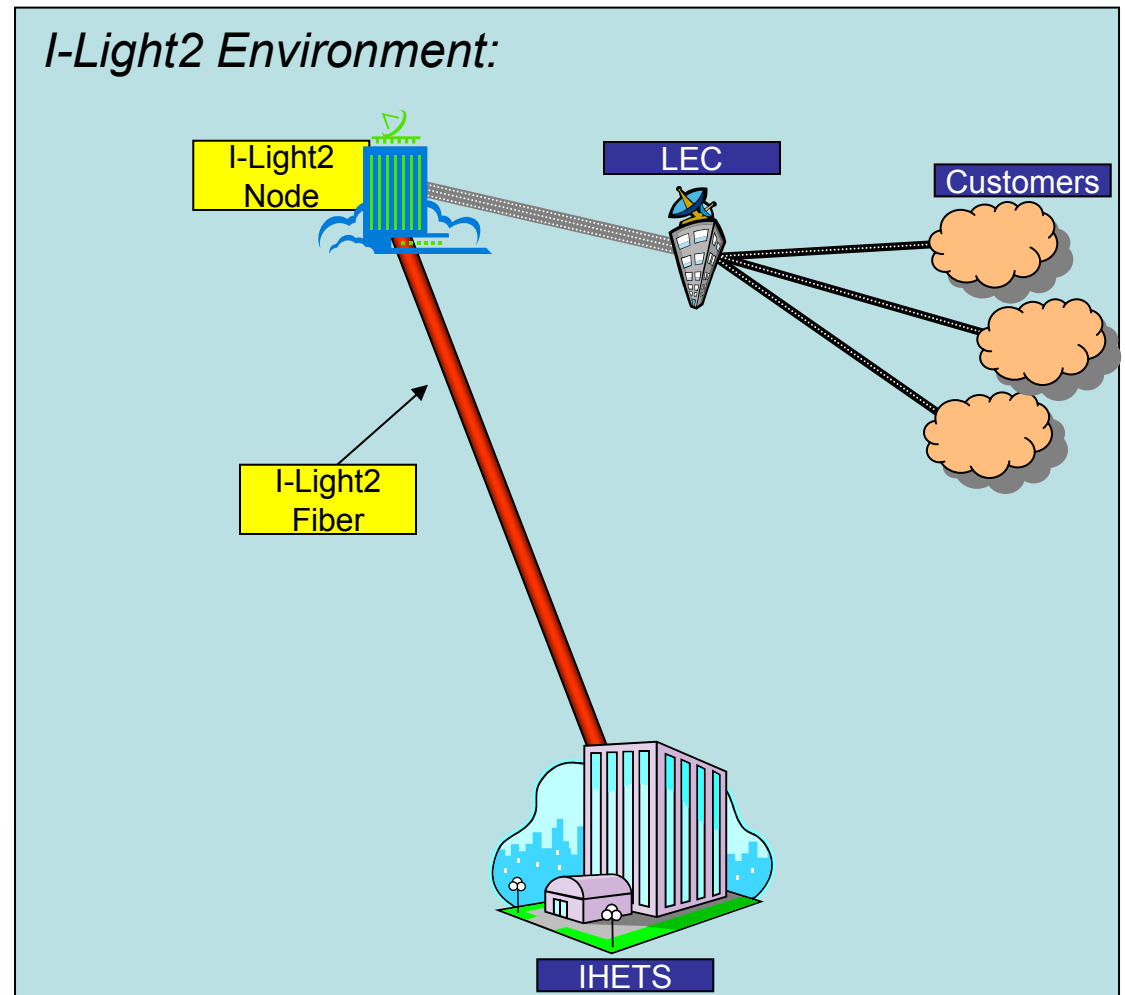
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I-Light2 & State Network

Tomorrow:

All ITN circuits
backhauled via I-
Light2

- I-Light 2 is the "backbone"



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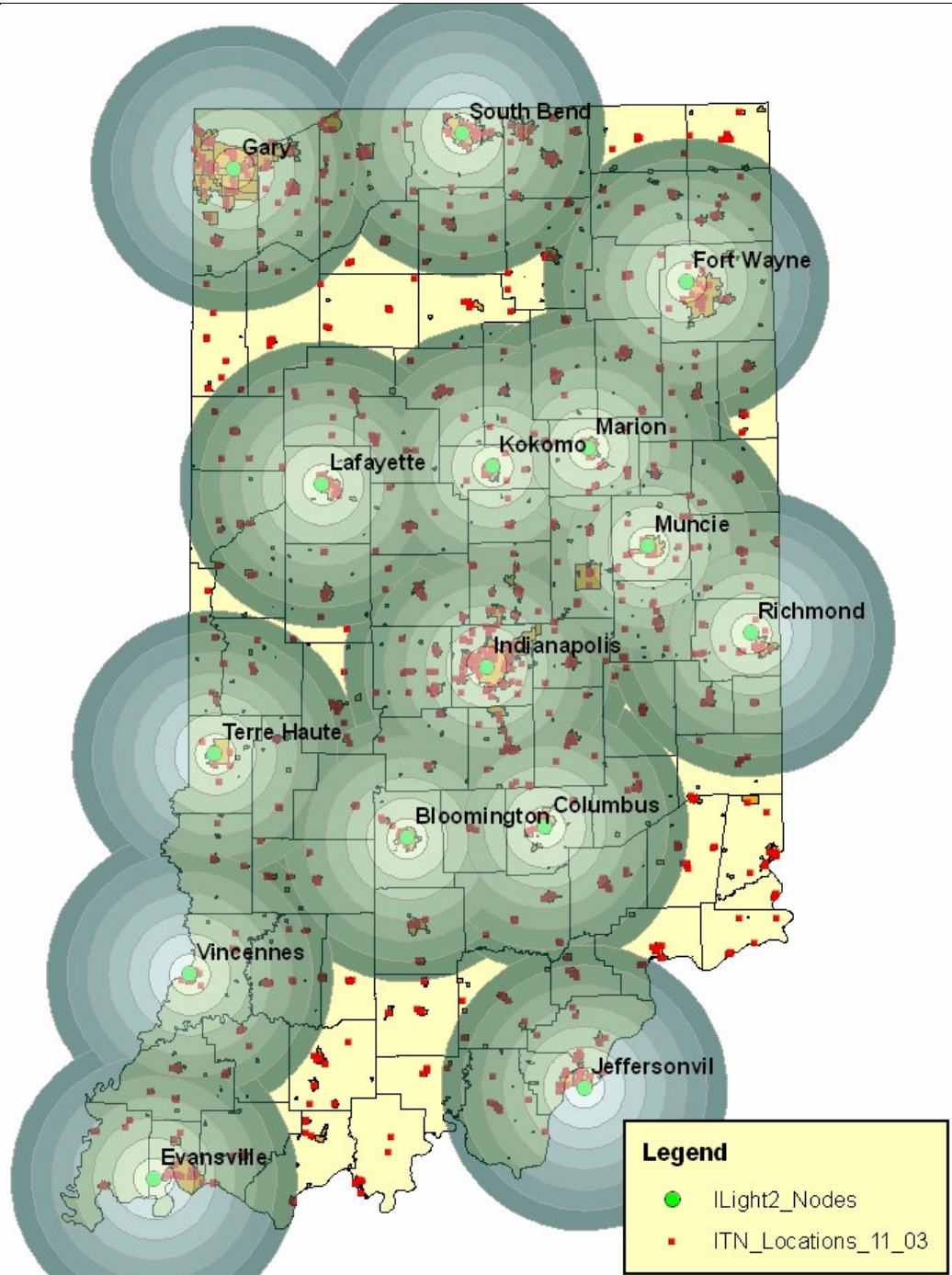
What does **I-Light 2** mean to Local Communities?

- **Coordinated approach to the next generation of information infrastructure is vital to our economic future.**
 - **Communities struggling to find broadband solutions on their own have limited fiscal leverage.**
- **Broadband connectivity creates new economic opportunities.**
 - **Attracts new business**
 - **I-Light 2 attracts companies to locate in an area with a low cost-of-living and a Silicon Valley infrastructure.**
 - **Creates new jobs**
 - **I-Light 2 enhances opportunities for global electronic commerce and provides the foundation for Indiana's information-age economy.**



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- What's next?
- Wireless...**



Node Aggregation Equipment

DWDM MUX

Ongoing Network Member Fee
includes:
•Basic Internet Access
•R&D
•Quality of Service

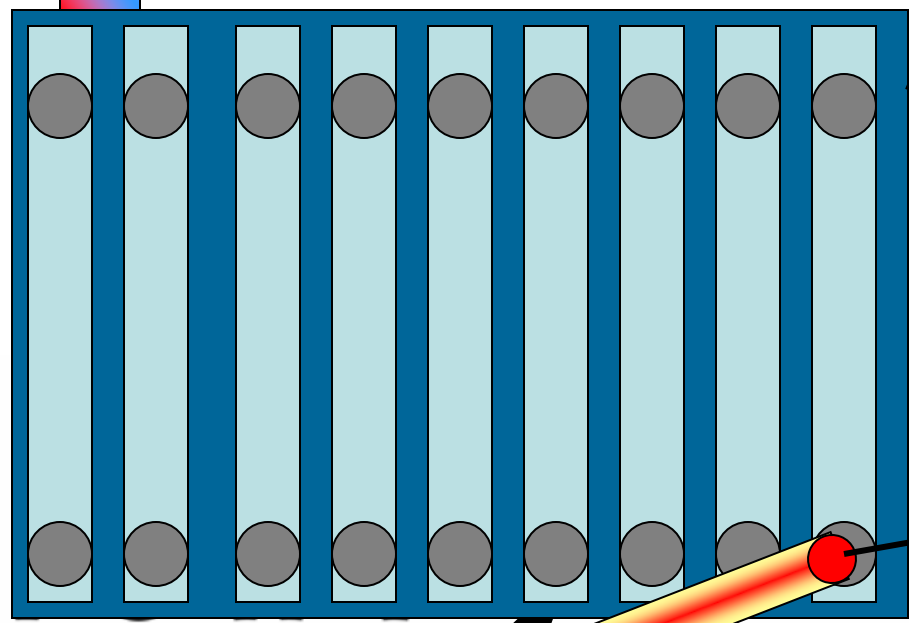
I-Light2 Fiber

Node Bandwidth:
32 x 10 gigabit
channels or "wave lengths"

I-Light2 Fiber

One 10 gigabit channel—OC192

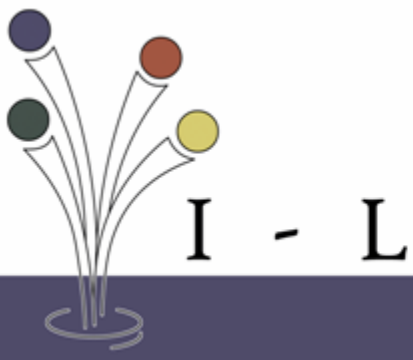
Additional Internet
access on per
megabit basis



Multi-port
Ethernet
Cards

One-time Network
Member Expense

Connectivity From
Network User
Fiber WiMax BPL

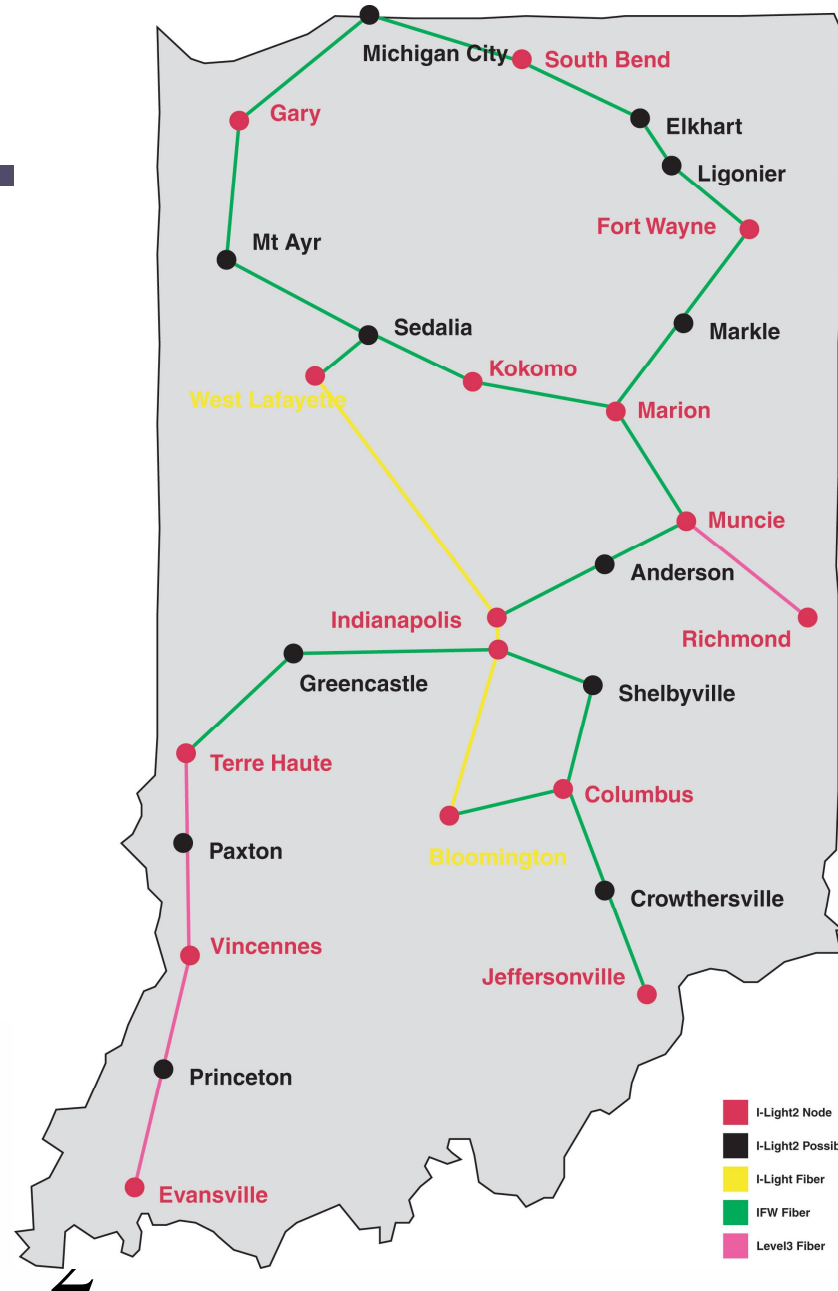


Last Mile...

- \$5million in the budget...
- Leverage with USDA Rural Development Loan Program to provide \$25 million each year...
- Connect cities with 20,000 or less population...(but to get there you go through all metro areas.)
- Expand Wireless coverage statewide...
- IHETS to add all campuses...



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For More Information...

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