Connectivity

NC SBE

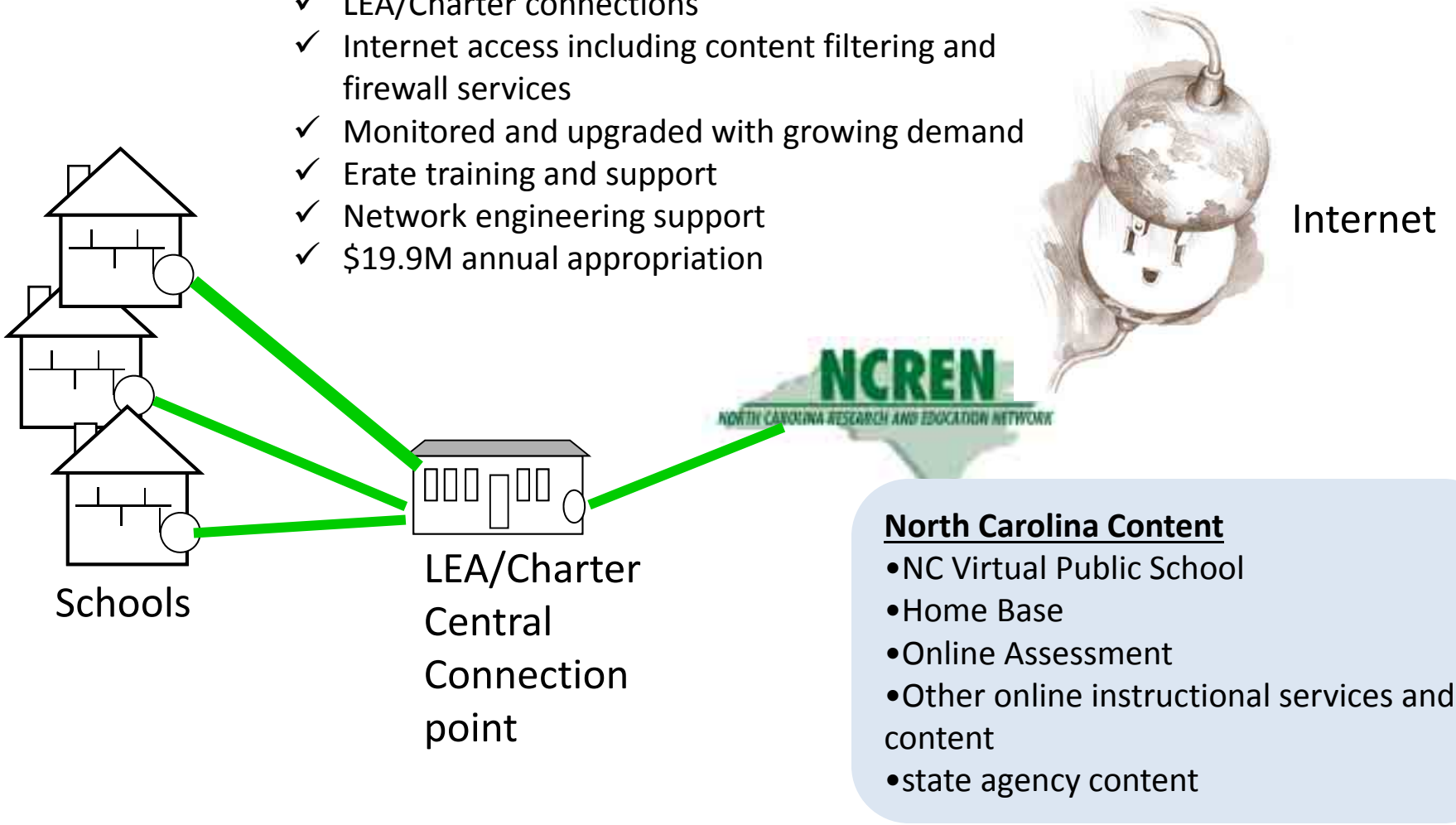
September 4, 2013

Connectivity Defined

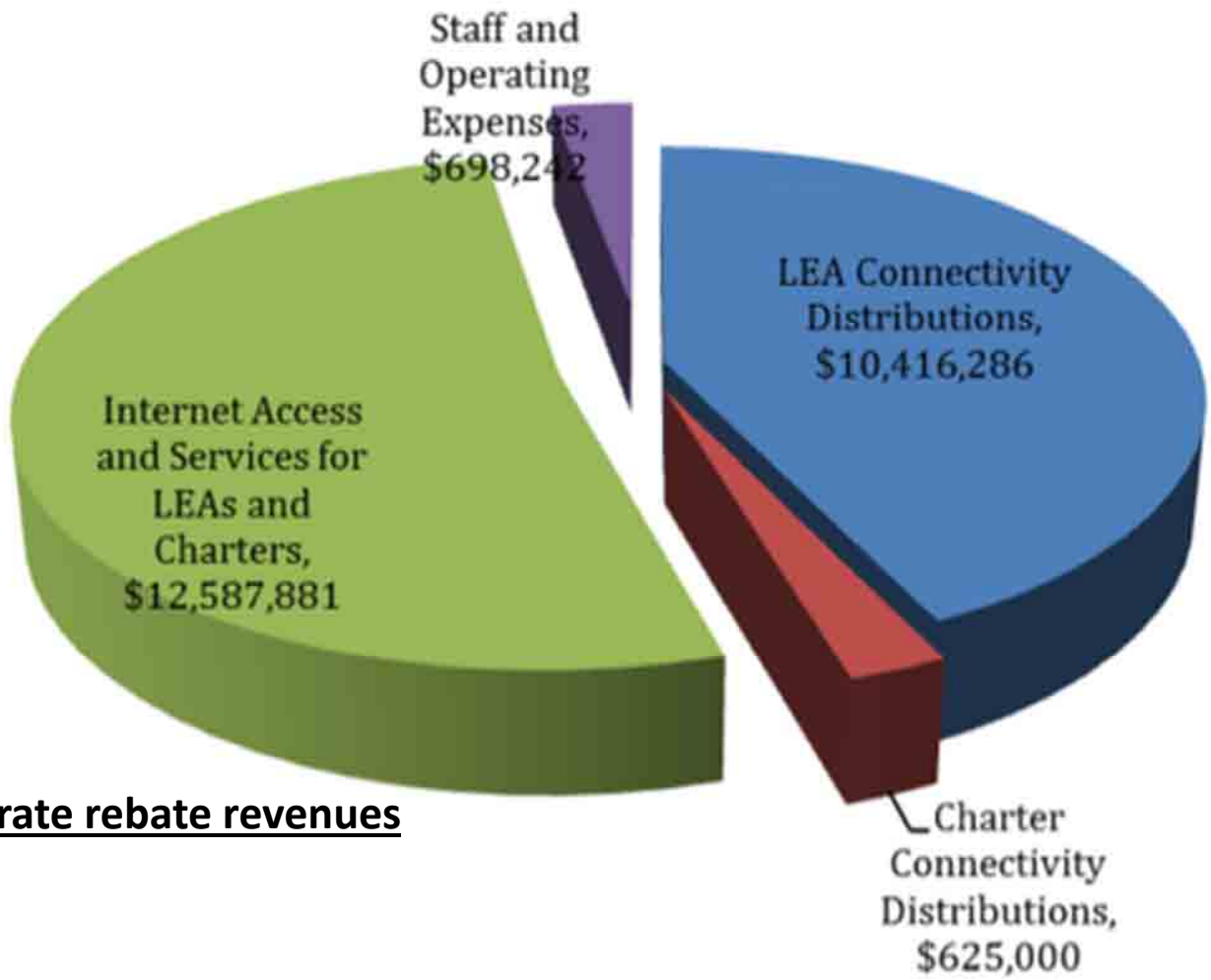
- Connectivity to LEAs and Charters
- Connectivity to schools and Charter sites
- Connectivity inside schools
- Connectivity at home
- Connectivity anywhere
- Connecting:
  - Places
  - Things
  - People
  - …to content, applications, and services available through the Internet

School Connectivity Initiative (SCI)

- ✓ School connections
- ✓ LEA/Charter connections
- ✓ Internet access including content filtering and firewall services
- ✓ Monitored and upgraded with growing demand
- ✓ Erate training and support
- ✓ Network engineering support
- ✓ $19.9M annual appropriation



2012 SCI Spending

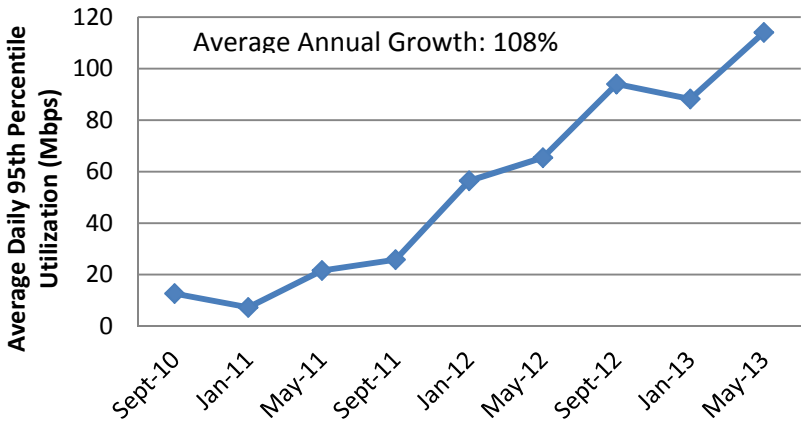


Includes E-rate rebate revenues

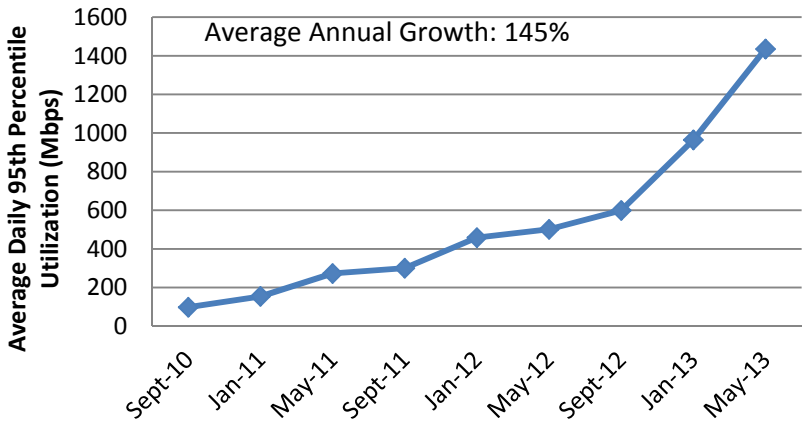
From the 2013 School Connectivity Initiative Report to the General Assembly, 01/2013

K12 Internet Usage Growth

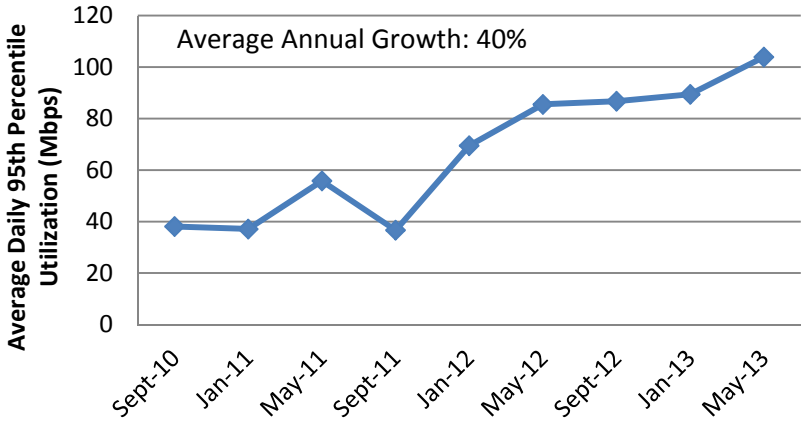
Avery County Schools



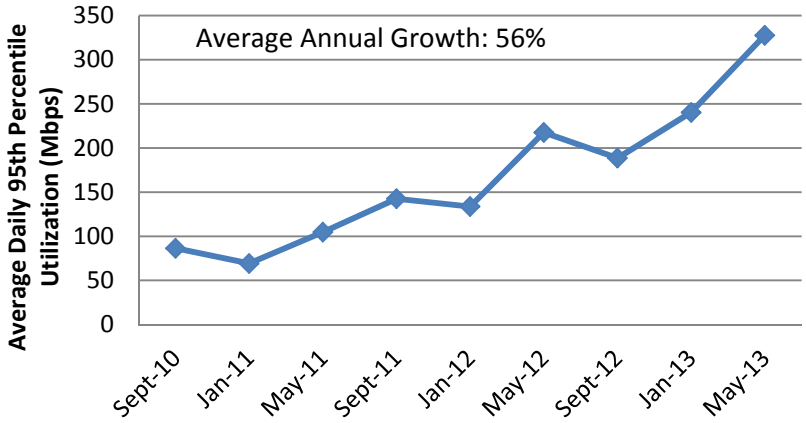
Cumberland County Schools



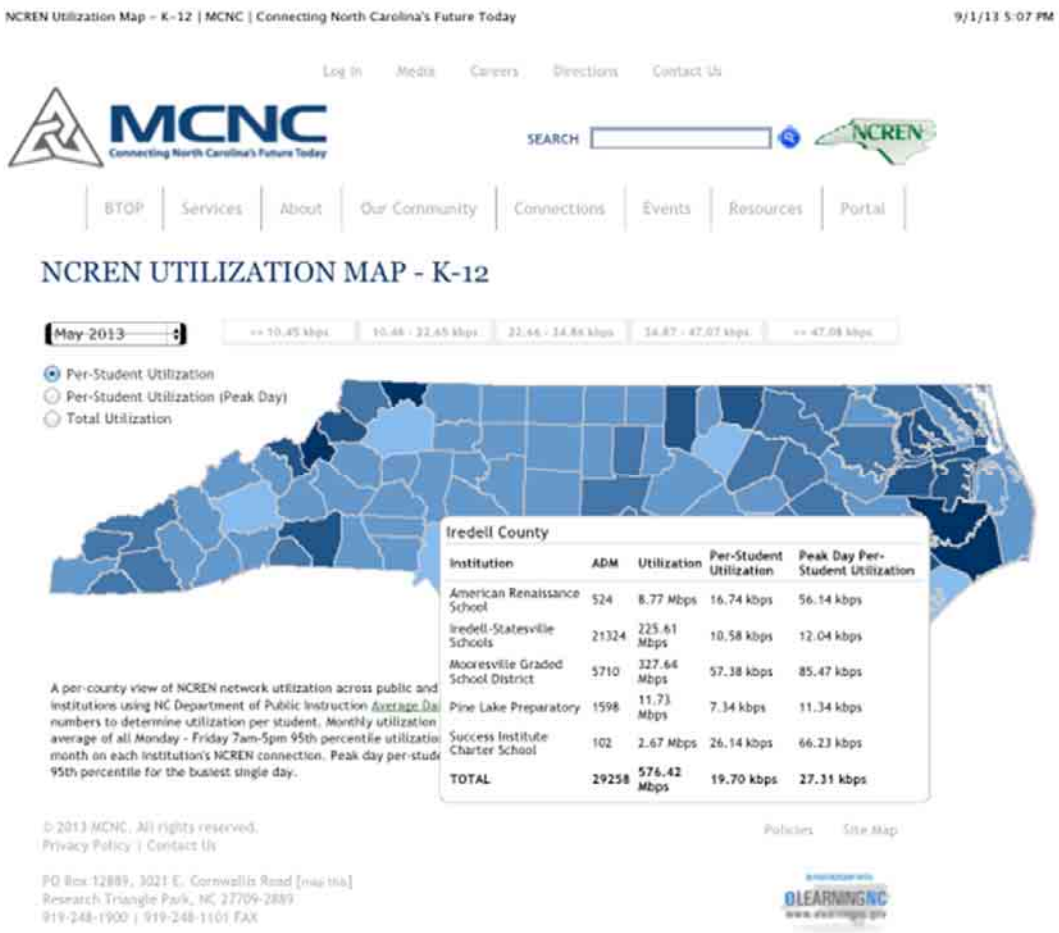
Halifax County Schools



Mooresville Graded



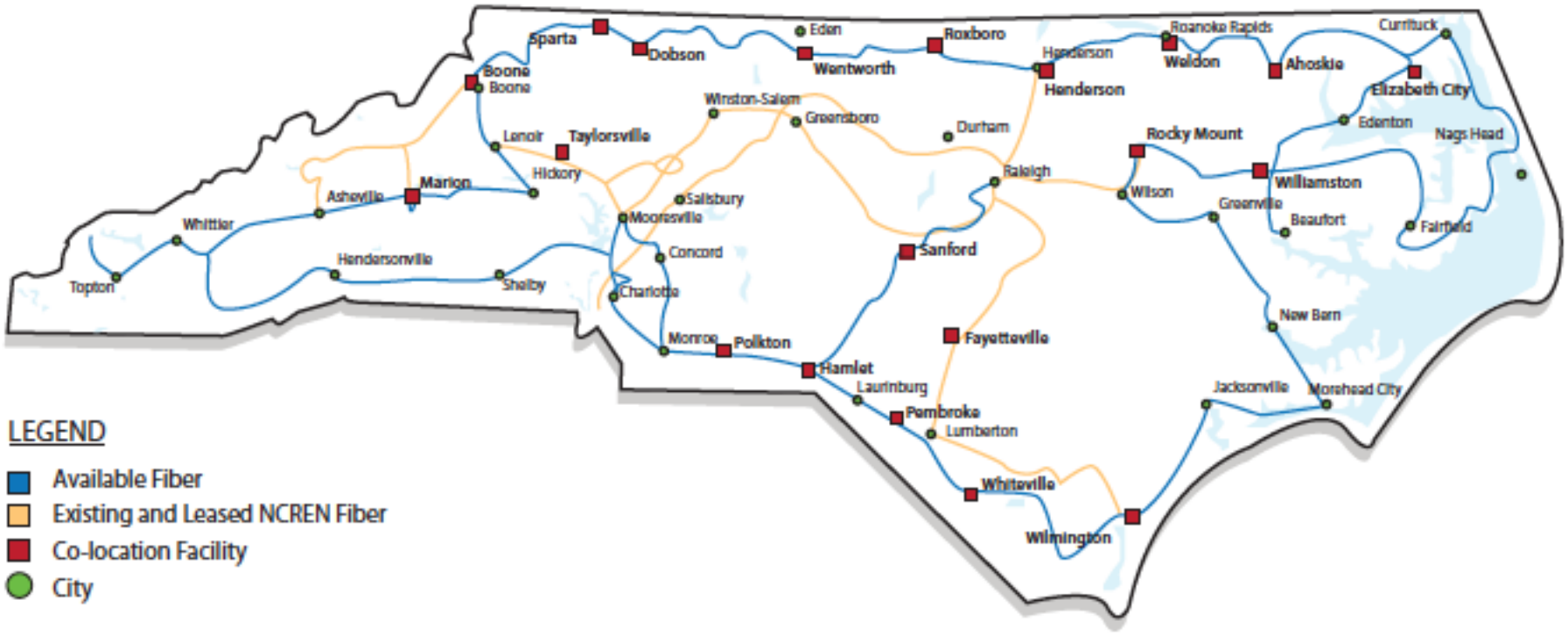
Monitor and Upgrade



- MCNC monitors all LEA and Charter connections
- NCDPI initiates upgrades of LEA/ Charter connections once monthly usage grows to over 60% of the connection capacity
- Fiscal diligence with enough headroom to support innovation

https://www.mcnc.org/ncren/portal/reporting/ncren_utilization_map

MCNC, NCREN, and GLRBI

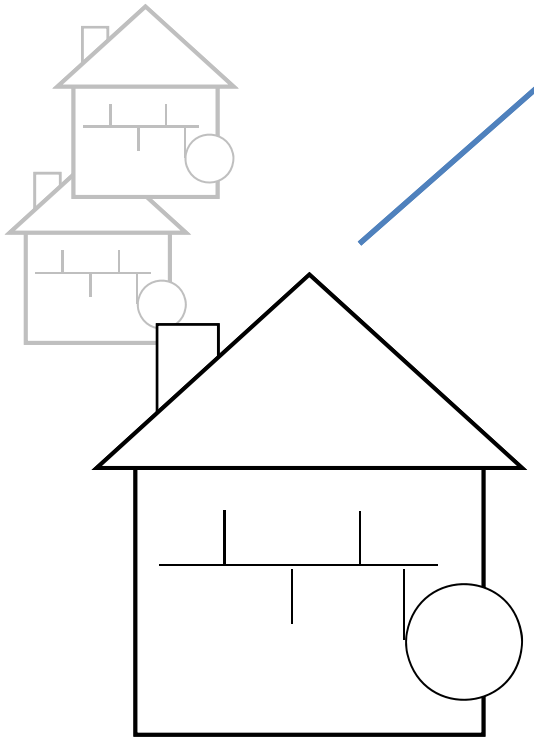


**Handholes/interconnection points are available approximately every 5,000 feet or less as needed.*

The Golden Leaf Rural Broadband Initiative (GLRBI) led by MCNC brings long term sustainability and stability to NC schools by supporting the exponential growth in school Internet usage across the NC Research and Education Network (NCREN) at no added cost to the State.

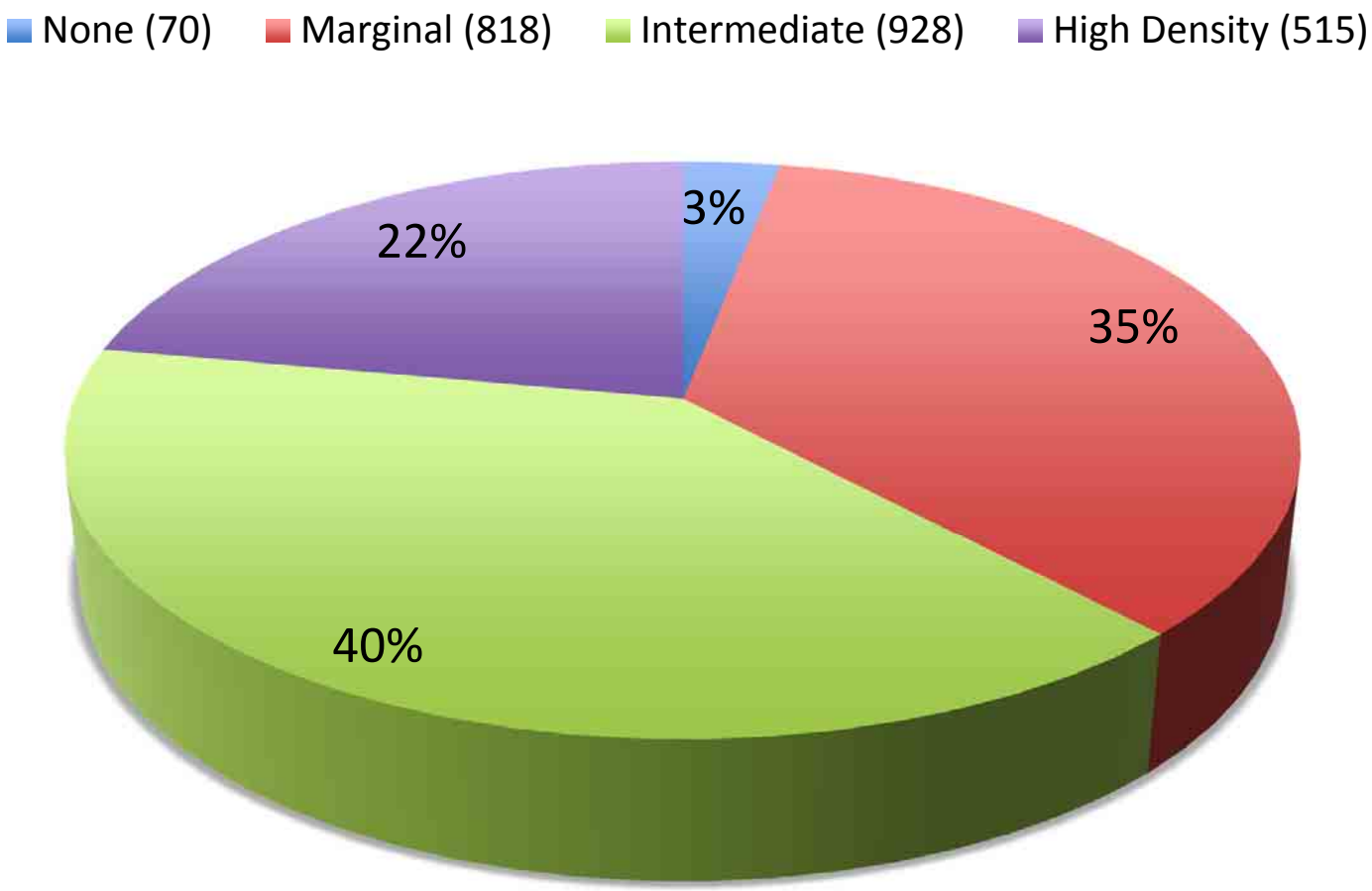
Inside the School

- ✓ SCI does not fund internal connections
- ✓ E-rate helps only a few schools with internal connections
- ✓ RttT has helped move the dial



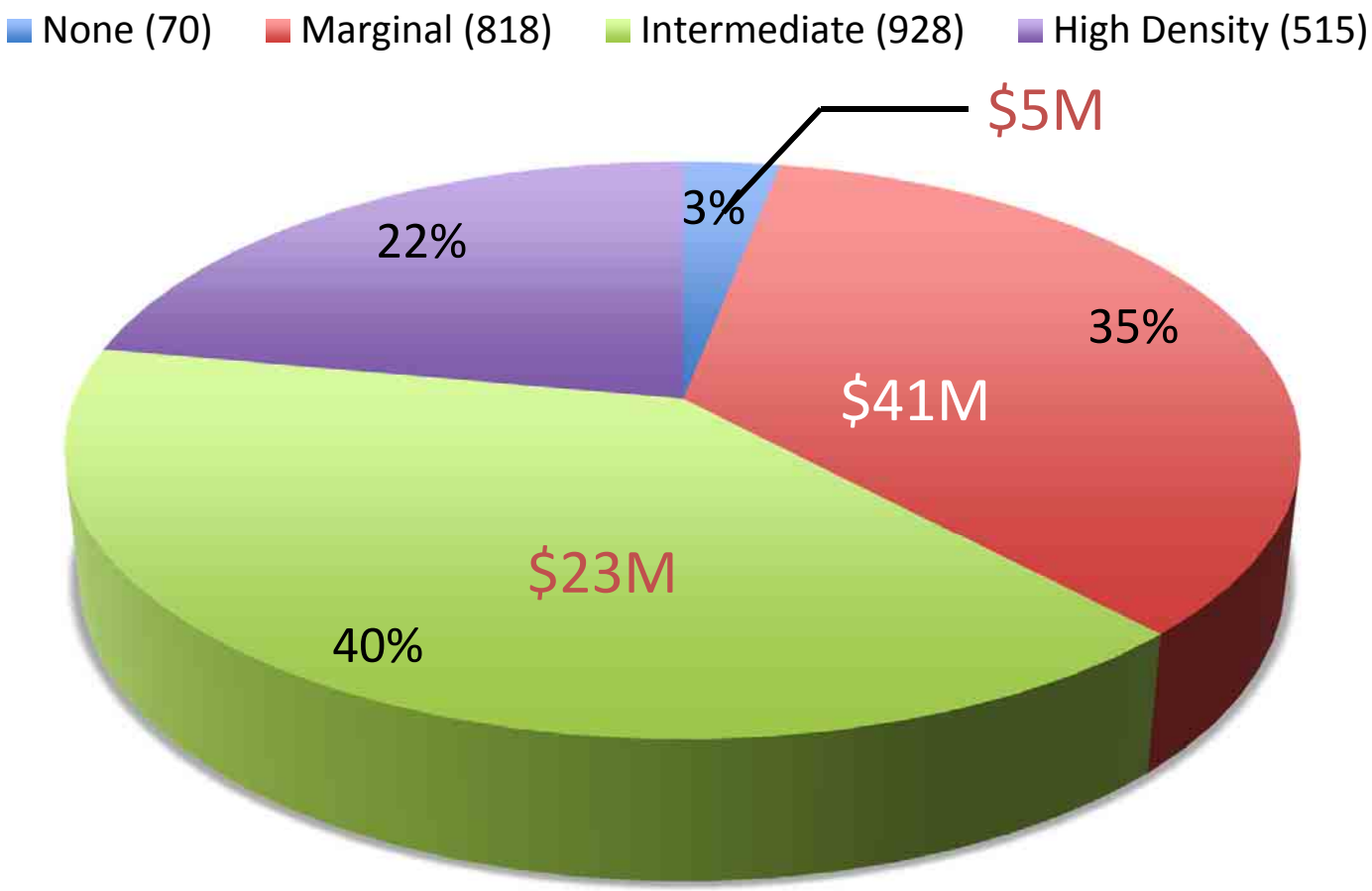
- Network design
- Network cabling
- Installation and testing
- Network equipment
  - Ethernet connects…
  - Wireless access points
  - Servers for management, control
  - Appliances for trouble shooting and security

School wireless status



From Spring 2013 Wireless and 1to1 survey - http://cloud.fi.ncsu.edu/status/

Towards High Density for All



To move all schools to high density requires ~**$70M** non-recurring
To maintain high density wireless in schools requires ~**$25M** annual recurring

Anytime and Anywhere

- After school
  - School after hours access
  - Public library access
  - Community access – e.g., WinstonNET
- At home
  - Connect2Compete – must qualify for F&R lunch
  - CenturyLink Internet Basics
  - MI-Connection, Mooresville
- Anywhere
  - Ready Anywhere
  - 4G bundling

Towards Anytime/where

- No silver bullet
- NCbroadband.gov
- Access versus adoption
- Regulatory reform
  - NC State franchise for CATV – *SL 2006-151*
  - E-rate 2.0
  - ConnectED
- $0 < **Cost** < $150,000,000 /year

Flipping the Conversation

What will drive the need for bandwidth inside schools and for NC students, teachers, and families in general over the next 3-5 years?

NC Session Law 2013-12, *Transition to Digital Learning in Schools*

AN ACT STATING THE INTENT OF THE GENERAL ASSEMBLY TO TRANSITION FROM FUNDING TEXTBOOKS TO FUNDING DIGITAL LEARNING IN THE PUBLIC SCHOOLS, AS RECOMMENDED BY THE LEGISLATIVE RESEARCH COMMISSION STUDY COMMITTEE ON DIGITAL LEARNING ENVIRONMENTS IN PUBLIC SCHOOLS.

SECTION 1. It is the intent of the General Assembly to transition from funding for textbooks, both traditional and digital, to funding for digital materials, including textbooks and instructional resources, to provide educational resources that remain current, aligned with curriculum, and **effective for all learners by 2017**.

Summary

- NC schools enjoy near unbounded access to the Internet
- Network access inside of schools has benefited from LEA RttT investments but there is currently no solution for equity and sustainability
- Availability and adoption of home Internet access in rural NC are…low…and unlikely to change without revolutionary regulatory reform
- E-rate 2.0 and ConnectED may provide some support for internal connections upgrades
- HB 44 will require substantial planning and will drive connectivity requirements inside and outside of schools