

THE MERTON GROUP

Feasibility Study Results

Town of Hanover, NH



May 21st , 2003

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Market Research Analysis

Objectives

“Establish viability for conversion of users to MBN in wide enough user base to ensure bond coverage”

- Ascertain current use of Internet access & CATV by key demographics metrics (age, income, etc.)*
- Determine current ISP penetrations*
- Ascertain conversion rates to MBN for existing Internet and CATV users by key demographic metrics*
- Ascertain price points for MBN acceptance for different services (broadband Internet, CATV)*

Implementation

- *Survey questionnaire mailed by town to 1,500 households in April 2003*
- *As of May 13, 2003, the Town had received 871 completed surveys, 423 of the first form and 448 of the second, a return rate of 58%, 500 questionnaires randomly selected and used in analysis*
- *Accuracy level from sample size better than +/- 5%*

Highlights of Study

About 84% of Hanover homes are in favor of the Town building its own broadband network as long as it does not increase their taxes.

About 46% of households are likely or very likely to switch to the MBN for broadband Internet access at the price of \$40 per month.

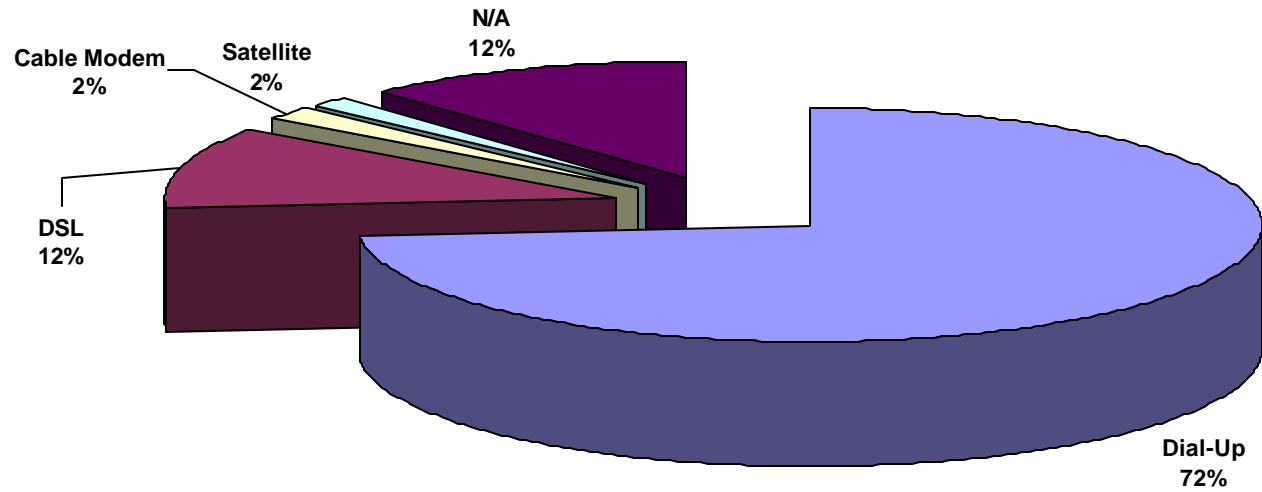
About 34% of homes are likely or very likely to switch to the MBN for video services at the price of \$40 per month.

Almost 70% of current DSL and cable modem users are likely or very likely to switch to the MBN for broadband Internet access at \$40 per month.

Target market potential is very strong for age groups below 55

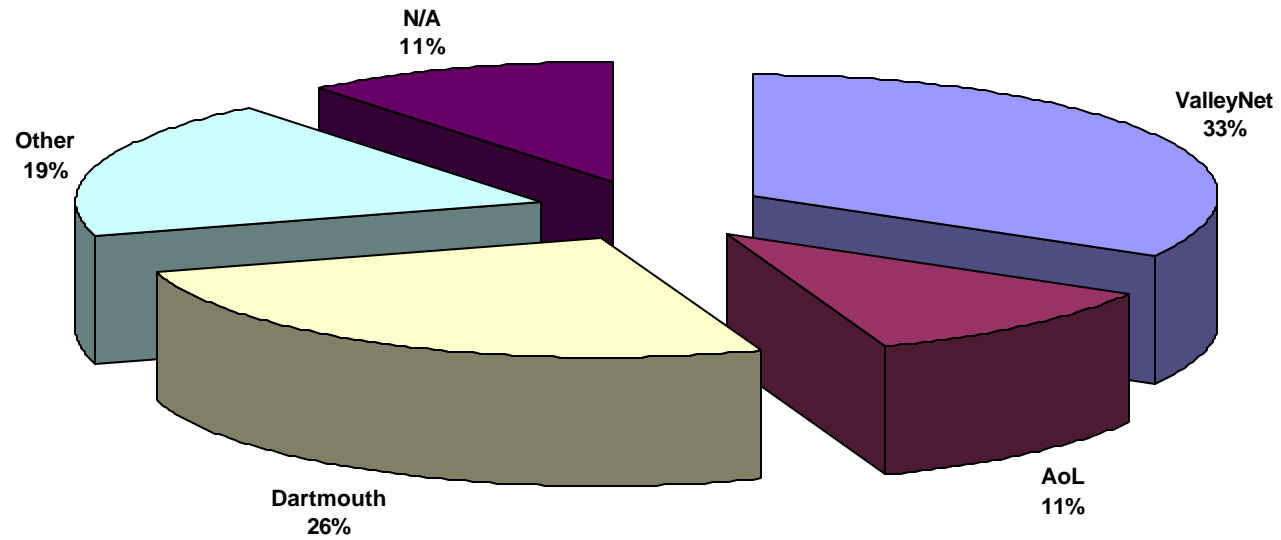
Internet Access Demographics

Internet Access by Type



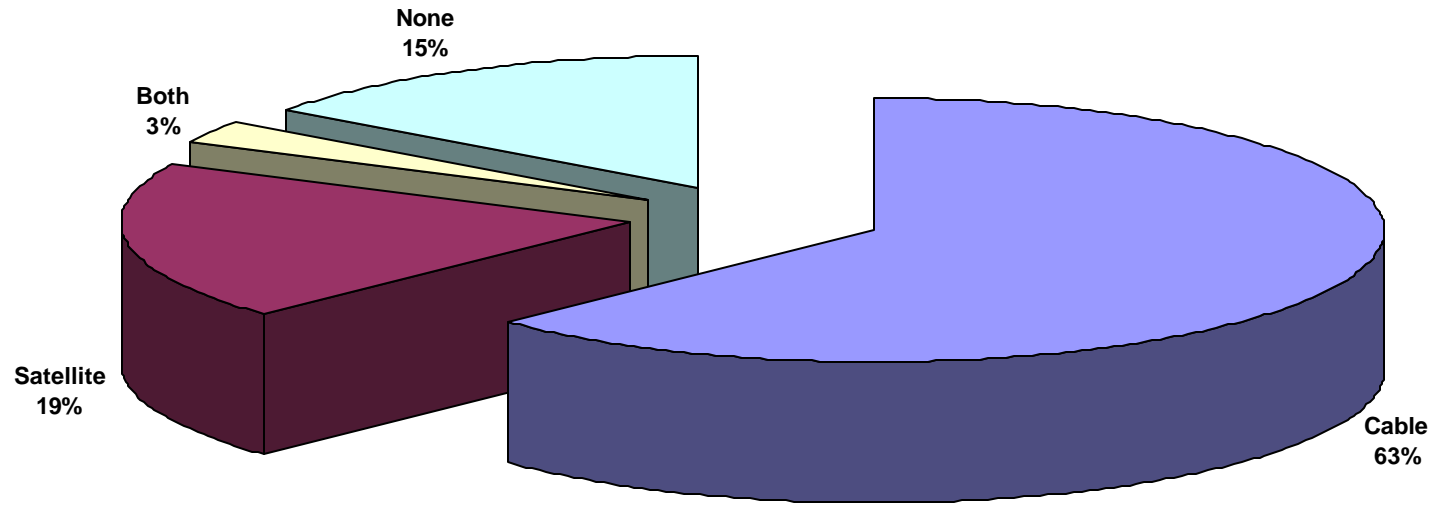
ISPs

Internet Access by ISP



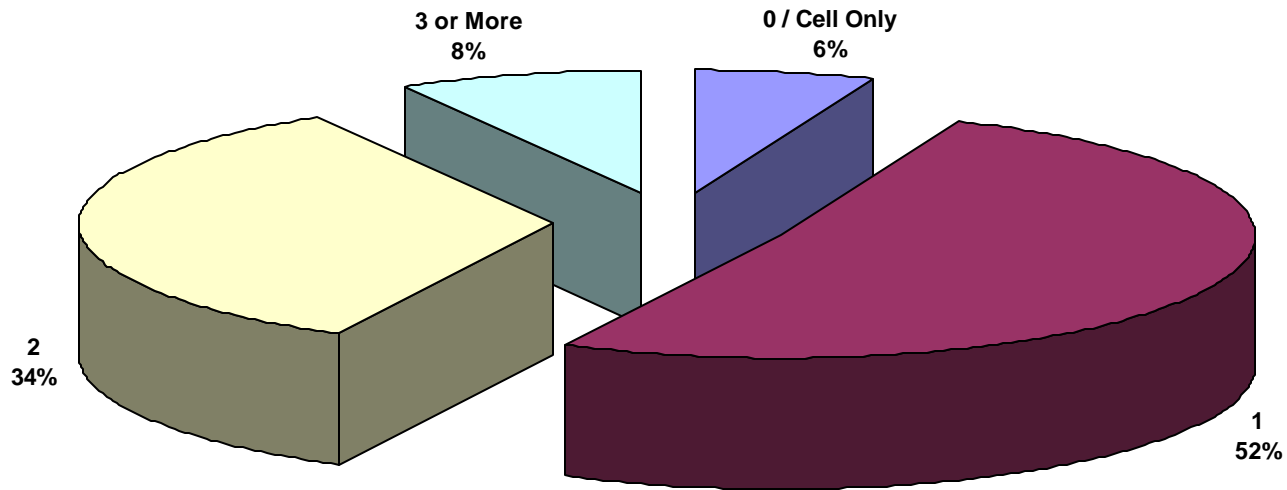
Cable TV Demographics

Cable TV Demographics



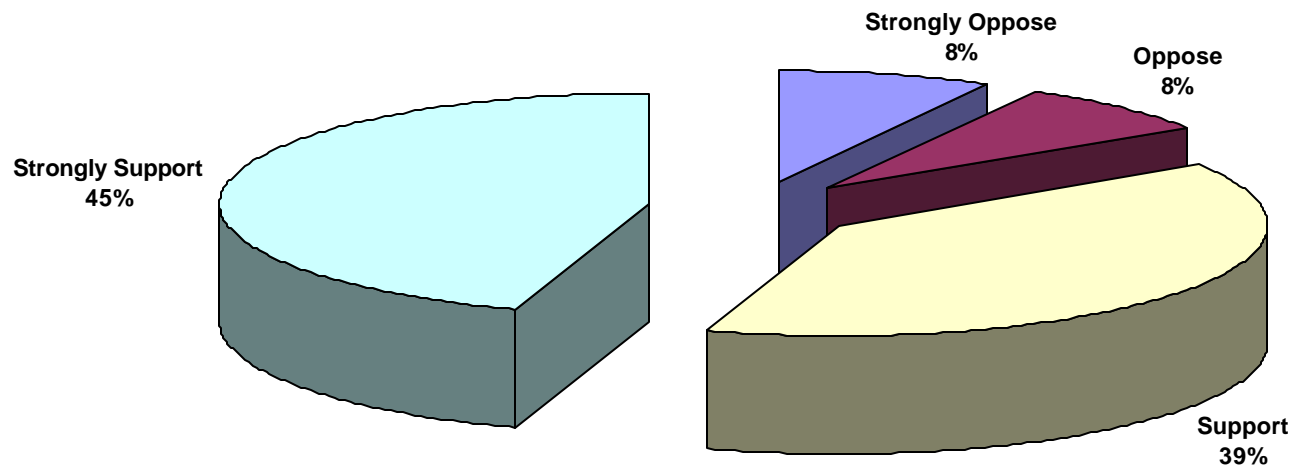
Number Telephone Lines per Home

Number Telephone Lines



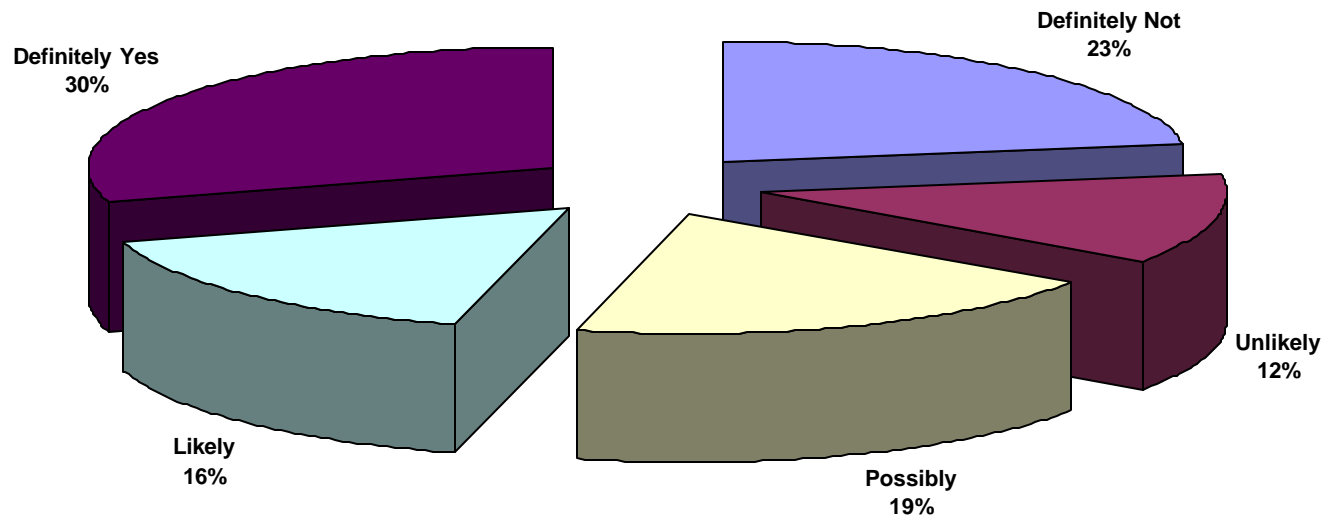
MBN Support – No Tax Increase

Support of MBN

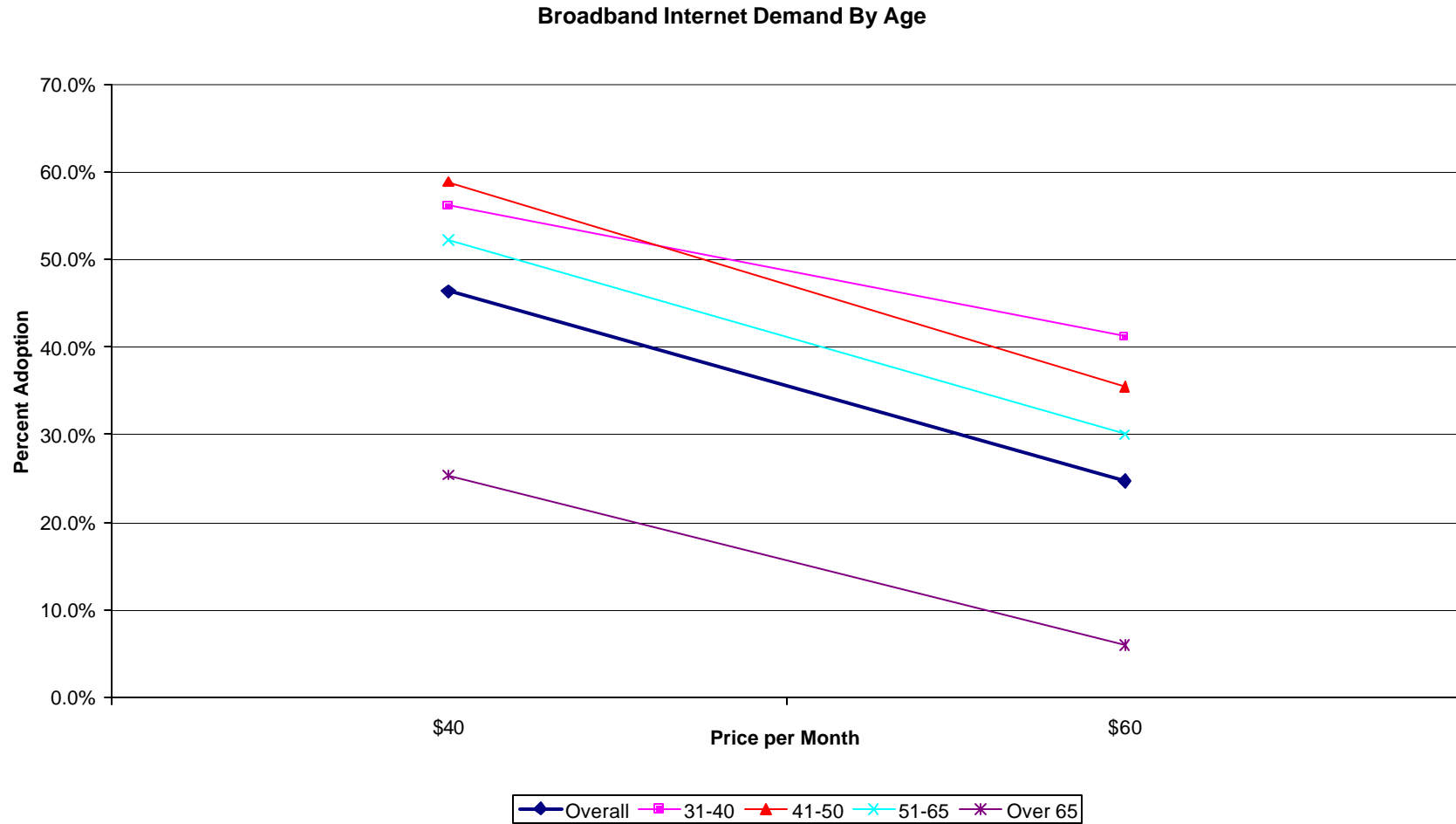


Conversion to MBN for Broadband

MBN Broadband Internet at \$40/Month

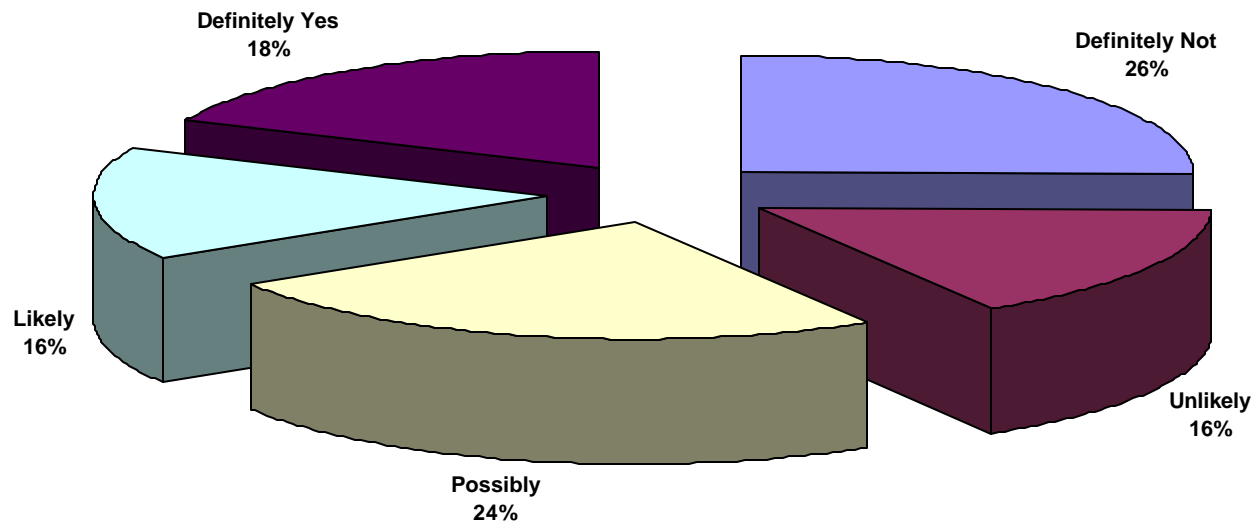


MBN Broadband Demand by Age



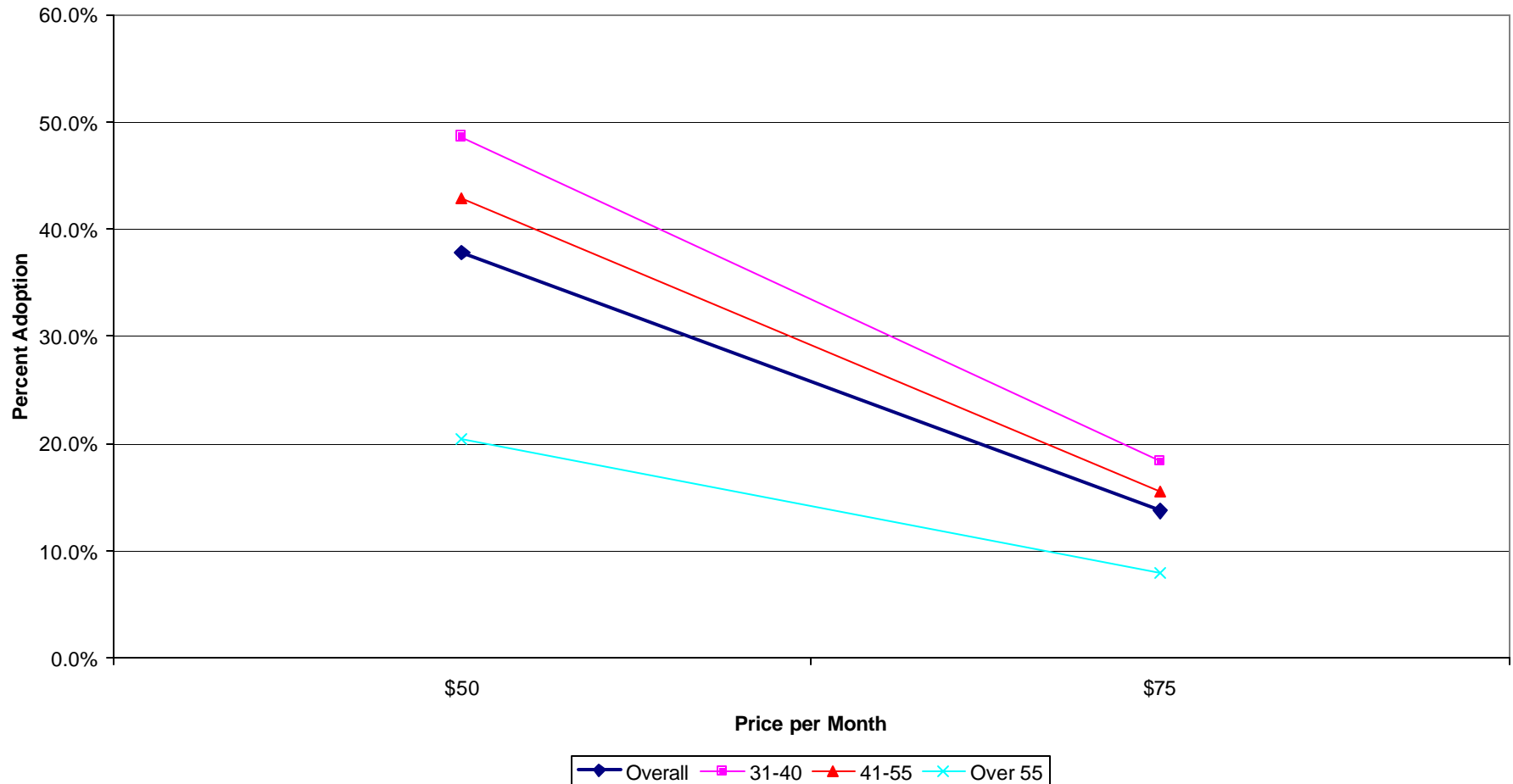
Conversion to MBN for Enhanced Video

MBN Video Services at \$40/Month



MBN Video Demand by Age

MBN Digital Cable TV Demand By Age



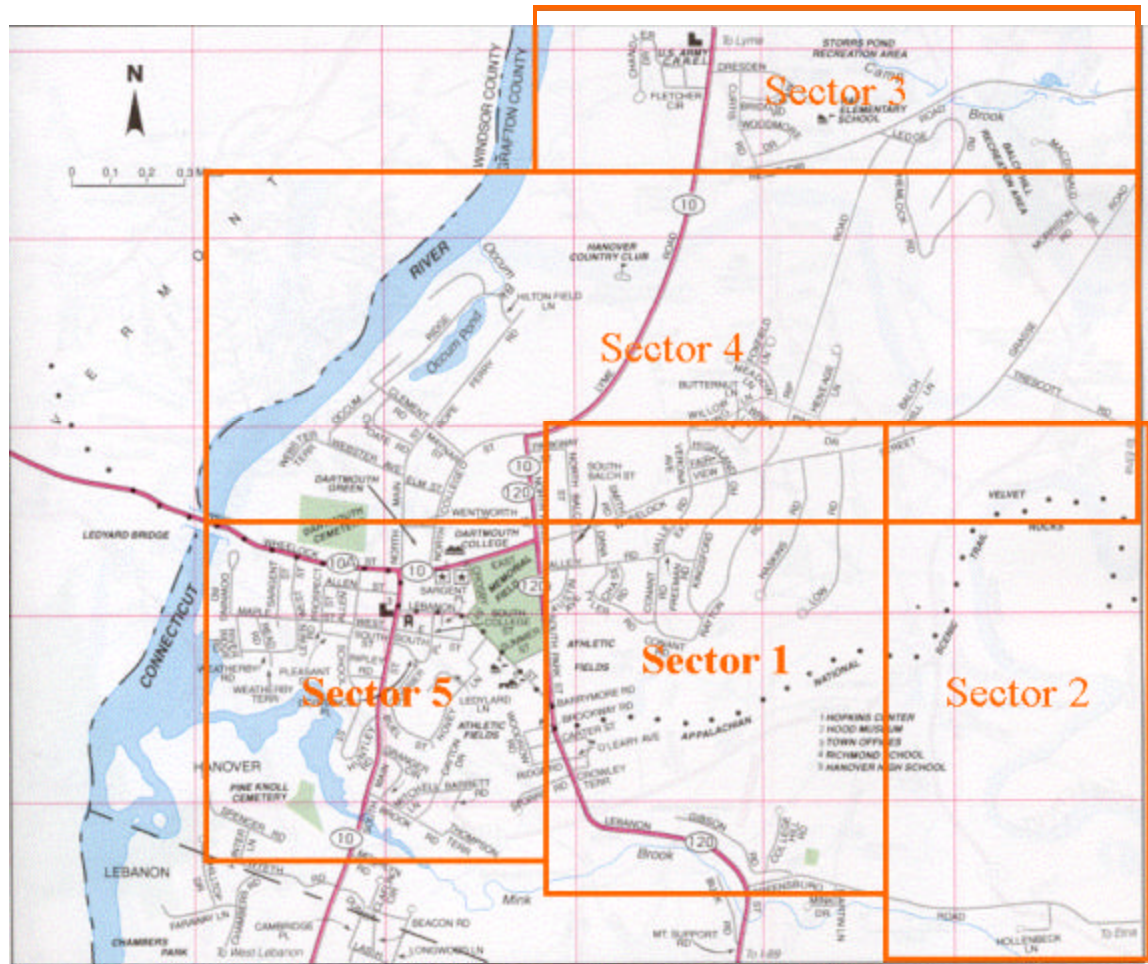
Municipal Broadband Network Details

Hanover MBN Review

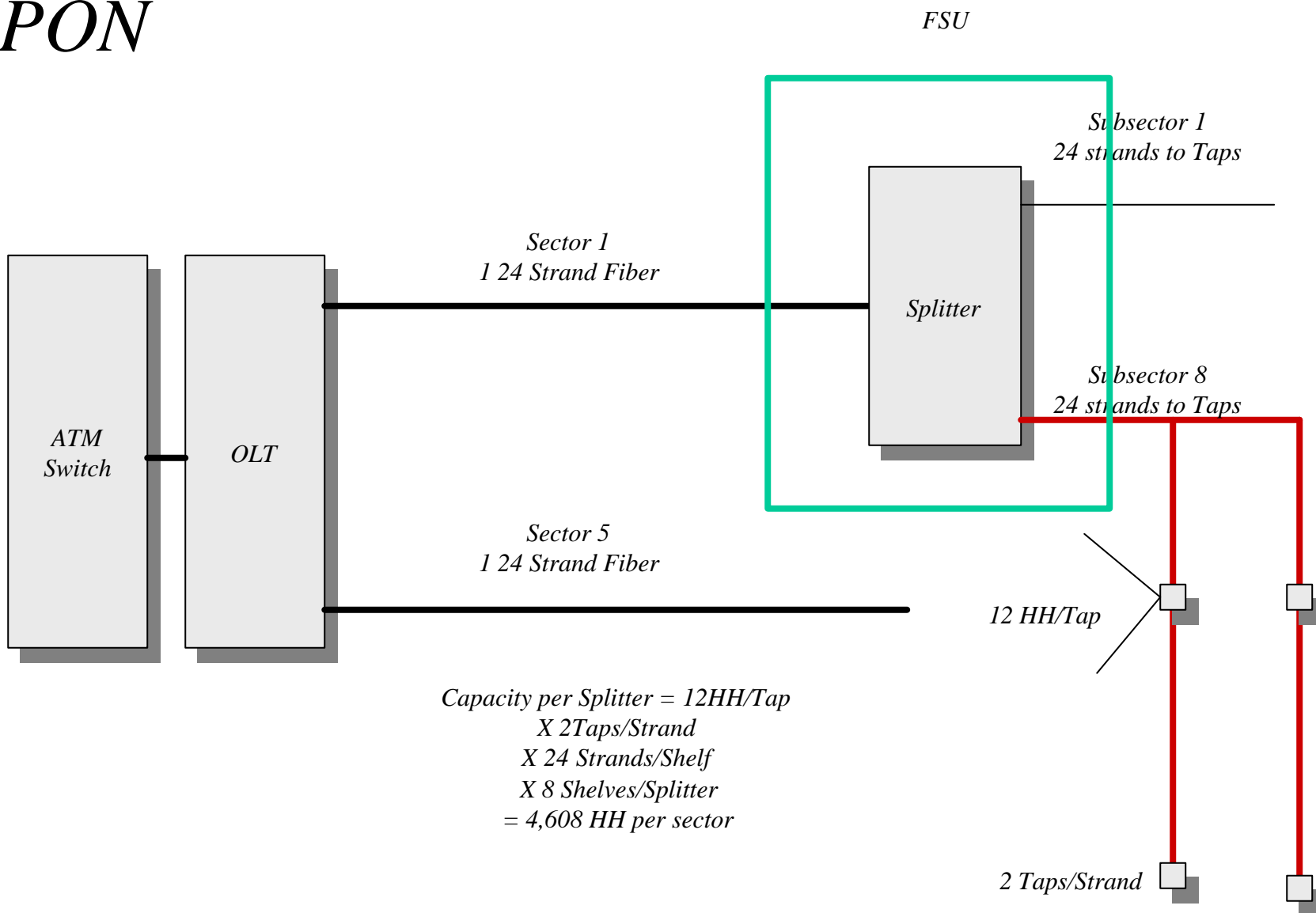
- *Total homes passed: 2,832*
- *Build fiber backbone over 100% of streets in Year 1*
- *93% aerial construction, 7% trenching*
- *About 29% Make Ready of poles expected*
- *Target 30% subscribers by year end in Year 1*
- *Build drop cables to HH as service is provided*
- *Central office equipment housed in existing building*
- *May need fiber optic rings to provide redundancy*

Network Design

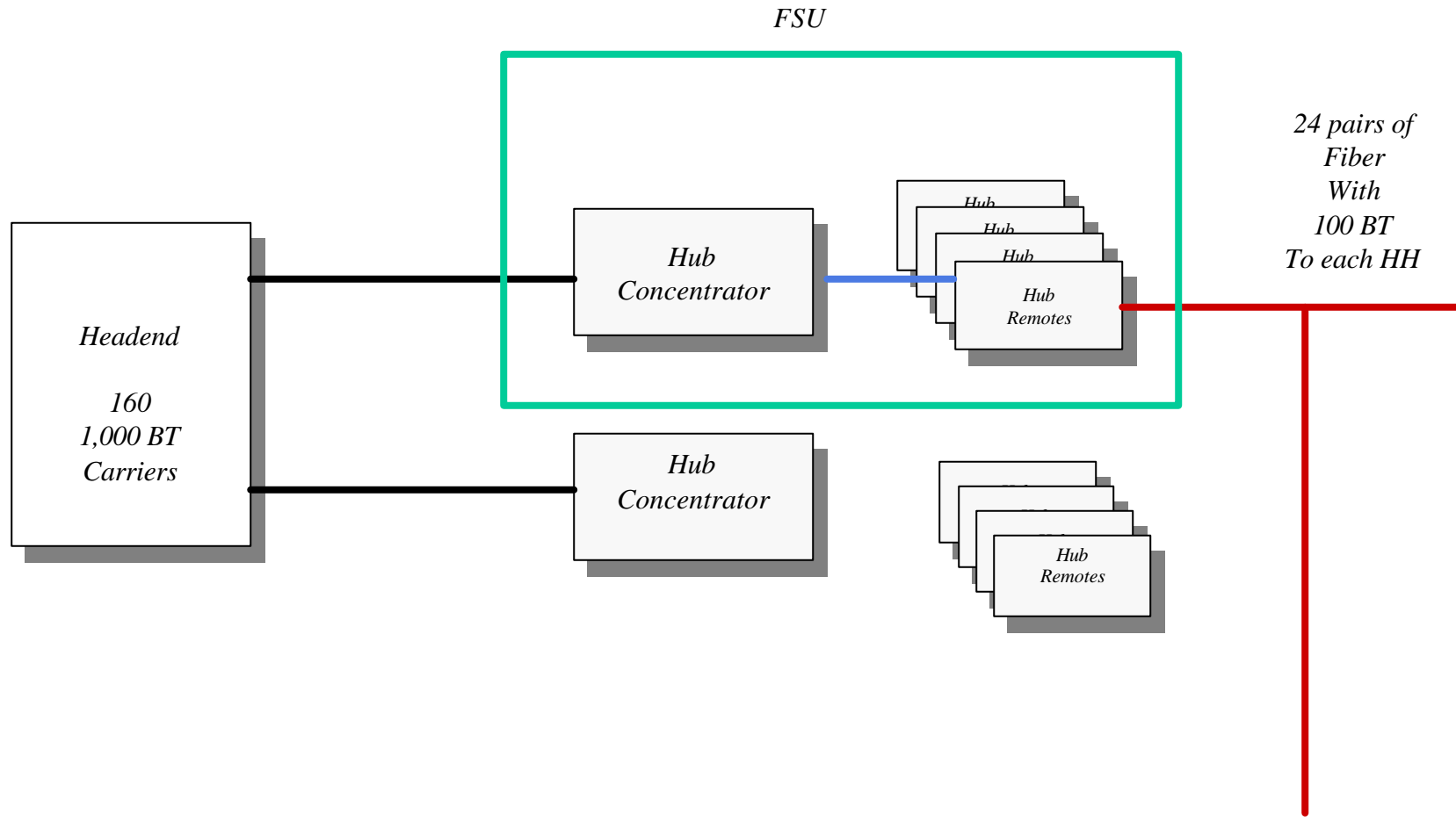
- *5 Sectors overlaid on town GIS map*
- *Smaller circles have higher density of users*
- *Larger circles have lower density of users*
- *Capital expenses driven by total subscribers passed, and distance between and center of serving area and radius of serving area*



PON



GigE

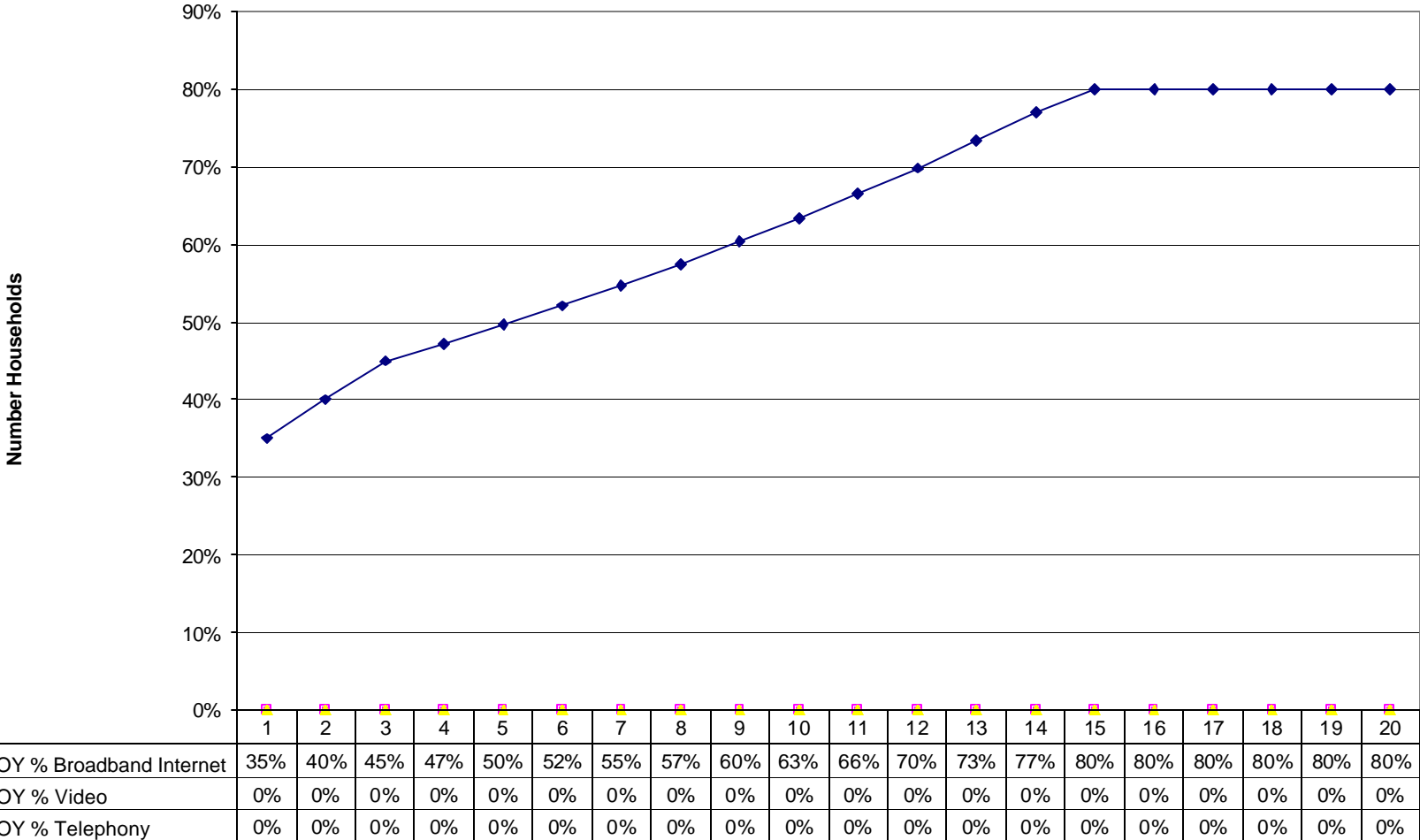


Network Operations & Maintenance

- *Operations*
 - *Business Management*
 - *Operations Support System (OSS) driven by network and subscriber requirement*
 - *Network management*
 - *Network provisioning, monitoring and management provided by Merton / third party*
- *Maintenance*
 - *First Level Maintenance, repair and return provided by Merton / third party*

MBN Project Financials

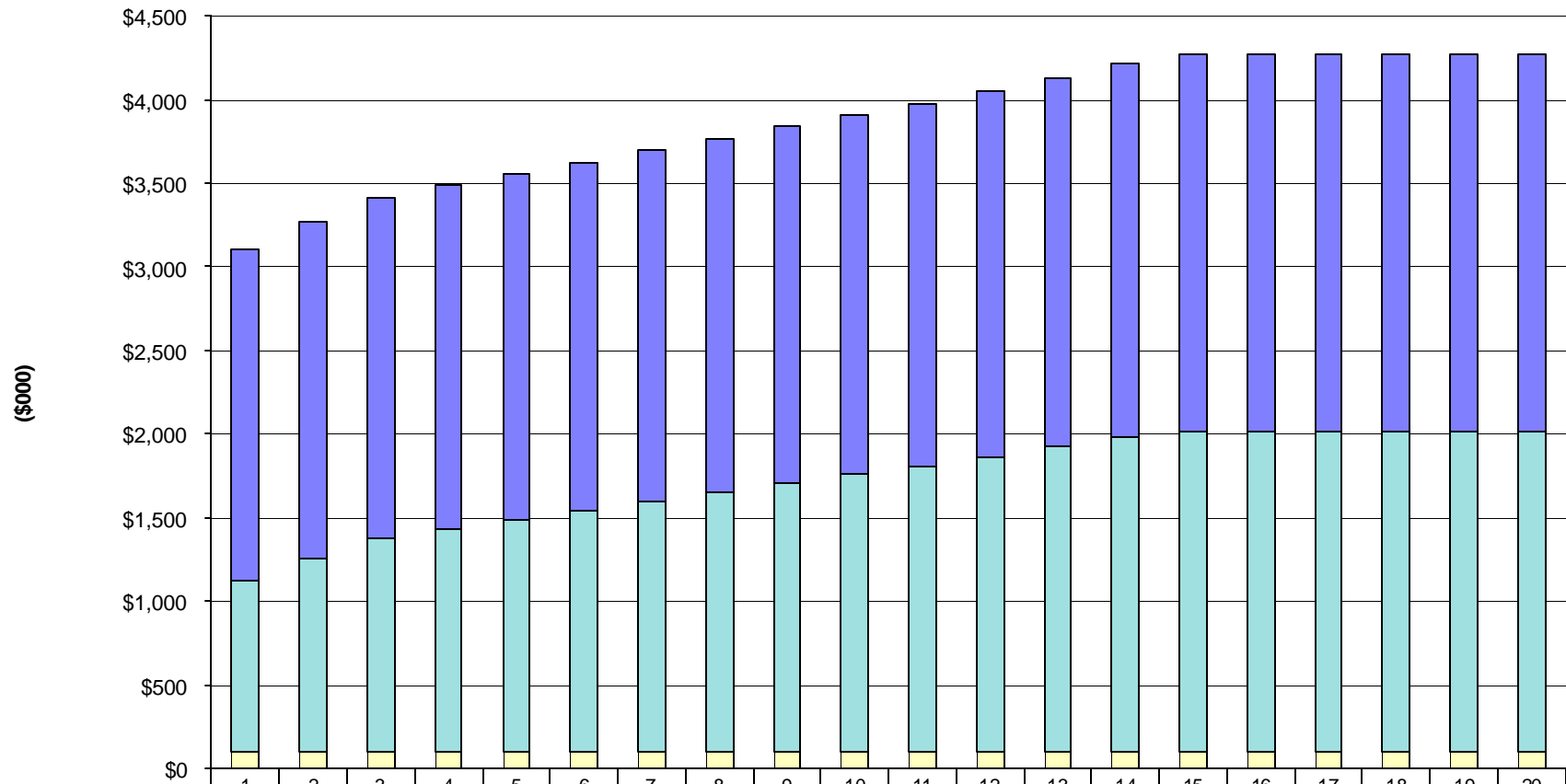
Users



Key Factors

Year	1	2	3	4	5	6	7	8	9	10
<i>EOY Large Business Users</i>	-	-	-	-	-	-	-	-	-	-
<i>EOY SME Users</i>	-	-	-	-	-	-	-	-	-	-
<i>EOY Households</i>	# 1,539	1,796	2,052	2,155	2,262	2,375	2,494	2,619	2,750	2,887
<i>Total EOY Users</i>	1,539	1,796	2,052	2,155	2,262	2,375	2,494	2,619	2,750	2,887
<i>Total EOY Users Penetration %</i>	30%	35%	40%	42%	44%	46%	49%	51%	54%	56%
<i>Total Avg Number End-Users</i>	770	1,667	1,924	2,103	2,208	2,319	2,435	2,557	2,684	2,819
<i>Avg Penetration End-Users</i>	15%	33%	38%	41%	43%	45%	47%	50%	52%	55%
<u>Broadband Internet Access</u>										
<i>EOY Penetration Large Businesses</i>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<i>EOY Penetration SMEs</i>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<i>EOY Penetration Households</i>	30%	35%	40%	42%	44%	46%	49%	51%	54%	56%
<i>EOY % Broadband Internet</i>	30%	35%	40%	42%	44%	46%	49%	51%	54%	56%
<i>Installation Charge Large Businesses</i>	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
<i>Installation Charge SMEs</i>	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250
<i>Installation Charge Households</i>	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100
<i>Avg Fee/ Month/ User Large Businesses</i>	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60	\$60
<i>Avg Fee/ Month/ User SMEs</i>	\$40	\$40	\$40	\$40	\$40	\$40	\$40	\$40	\$40	\$40
<i>Avg Fee/ Month/ Households</i>	\$25	\$27	\$28	\$30	\$32	\$33	\$35	\$38	\$40	\$42
<u>Video</u>										
<i>EOY Penetration Large Businesses</i>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<i>EOY Penetration SMEs</i>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<i>EOY Penetration Households</i>	0%	18%	22%	25%	29%	32%	36%	41%	43%	45%
<i>EOY % Video</i>	0%	18%	22%	25%	29%	32%	36%	41%	43%	45%
<i>Avg Fee/ Month/ User Large Businesses</i>	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10
<i>Avg Fee/ Month/ User SMEs</i>	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10
<i>Avg Fee/ Month/ Households</i>	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10

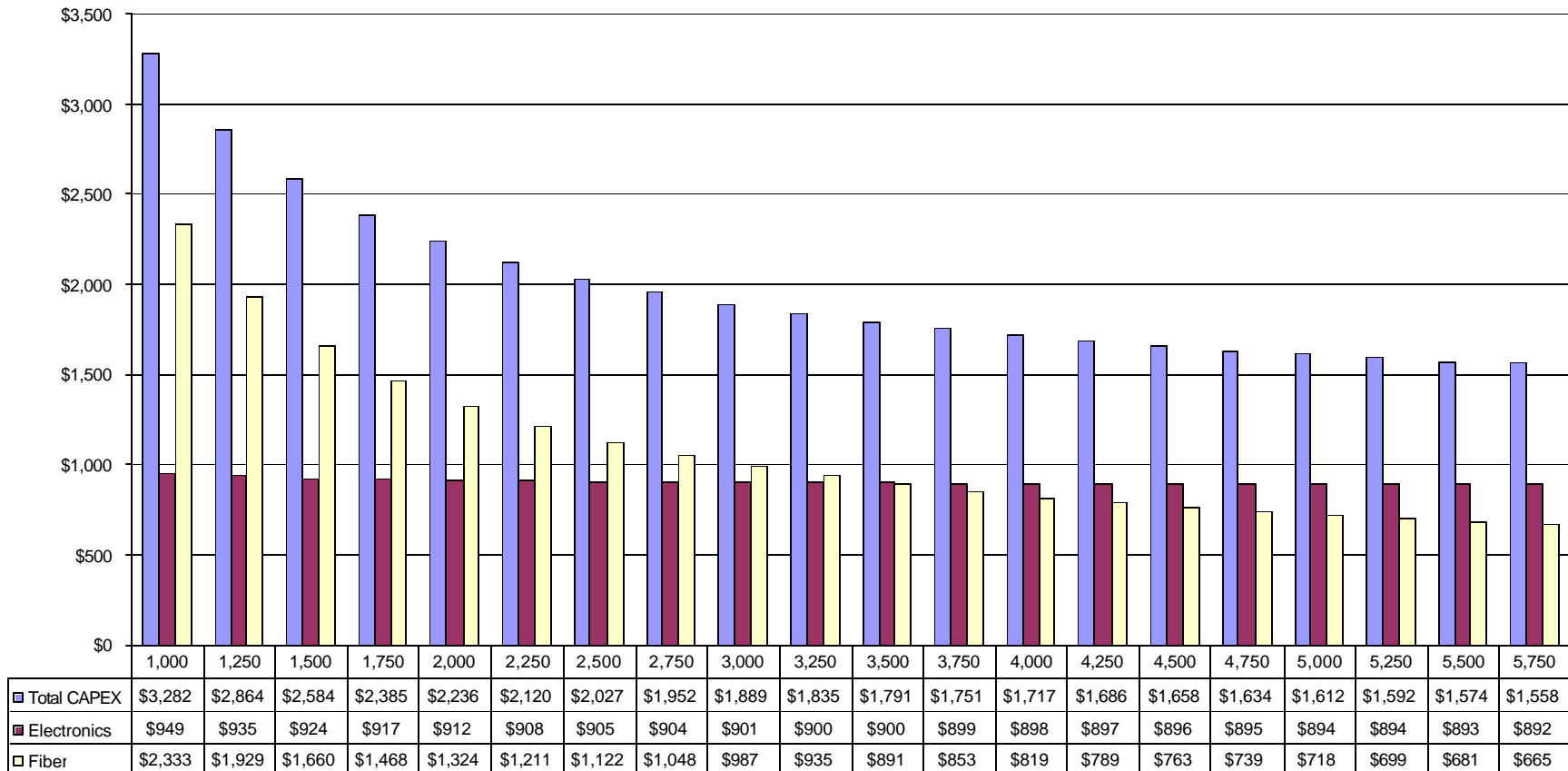
Total Capital



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Fiber Installation Capital	\$1,978	\$2,009	\$2,039	\$2,053	\$2,067	\$2,082	\$2,098	\$2,114	\$2,132	\$2,150	\$2,169	\$2,189	\$2,210	\$2,233	\$2,251	\$2,251	\$2,251	\$2,251	\$2,251	\$2,251
Equipment Capital	\$1,026	\$1,156	\$1,278	\$1,334	\$1,385	\$1,441	\$1,496	\$1,549	\$1,605	\$1,660	\$1,710	\$1,765	\$1,821	\$1,878	\$1,919	\$1,919	\$1,919	\$1,919	\$1,919	\$1,919
Other Capital	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100

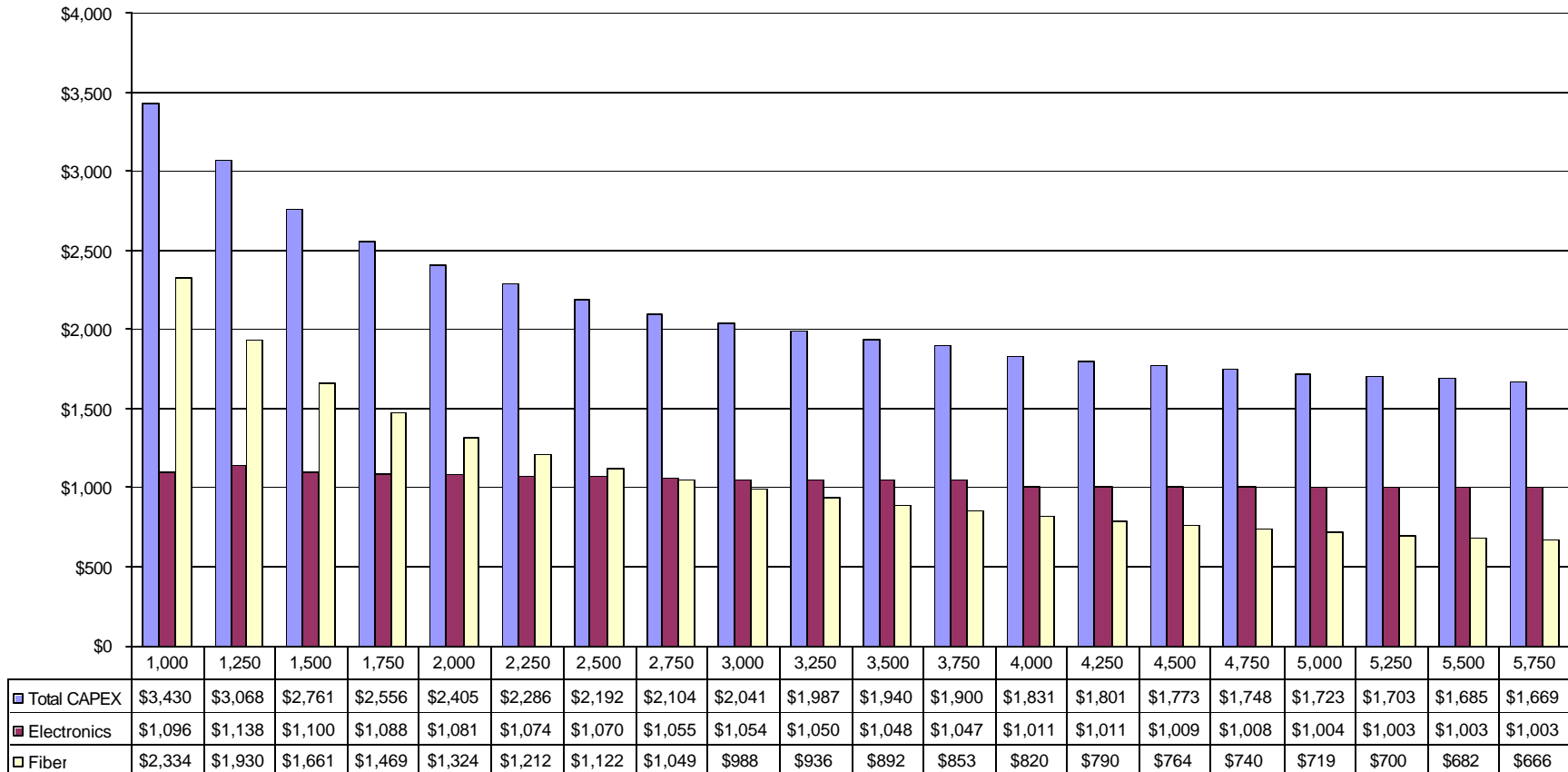
Capital per User Served PON

CAPEX per HH vs Number HH (PON)



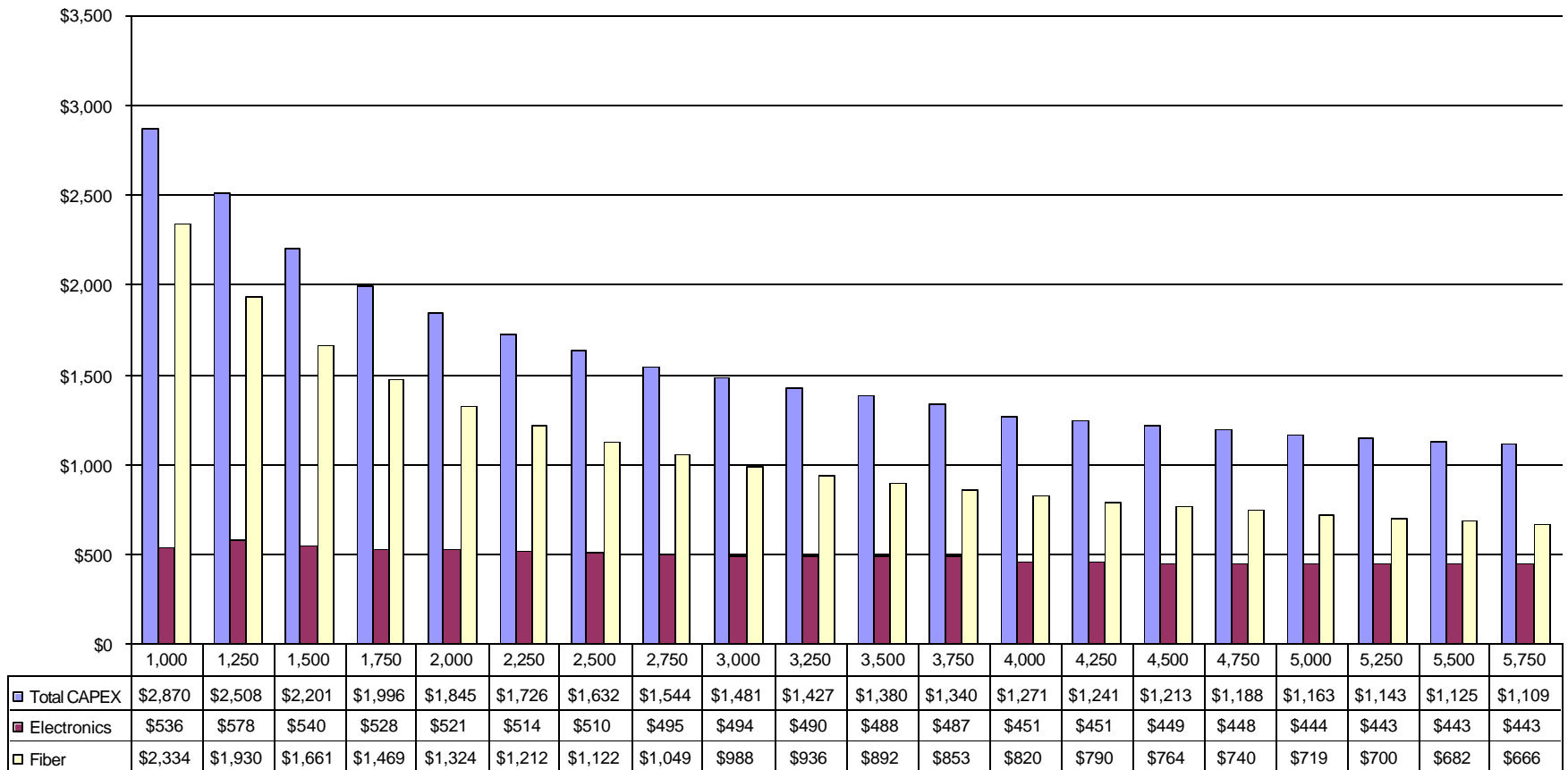
Capital per User Served GigE

CAPEX per HH vs No HH (GigE)

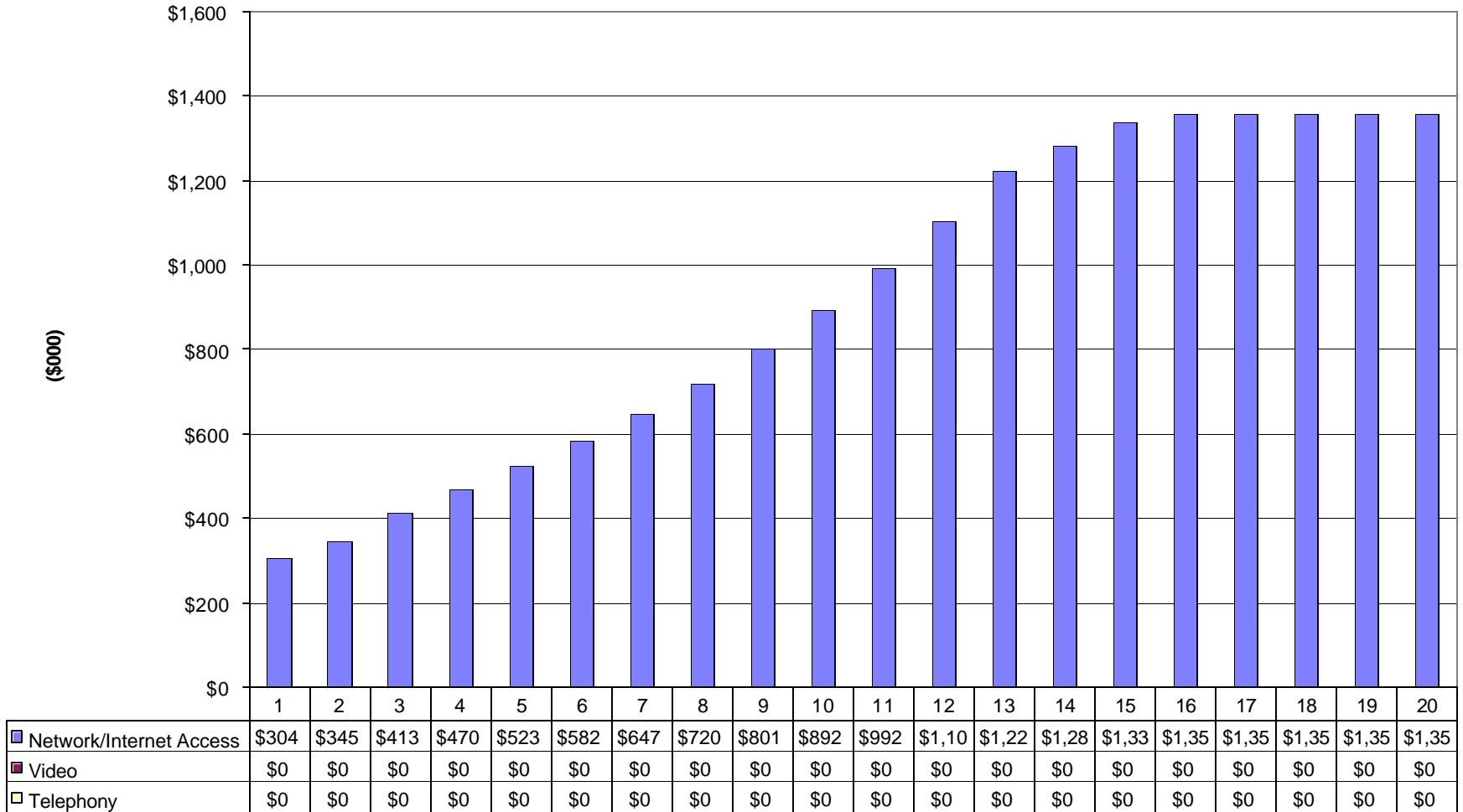


Capital per User Served GigE LITE

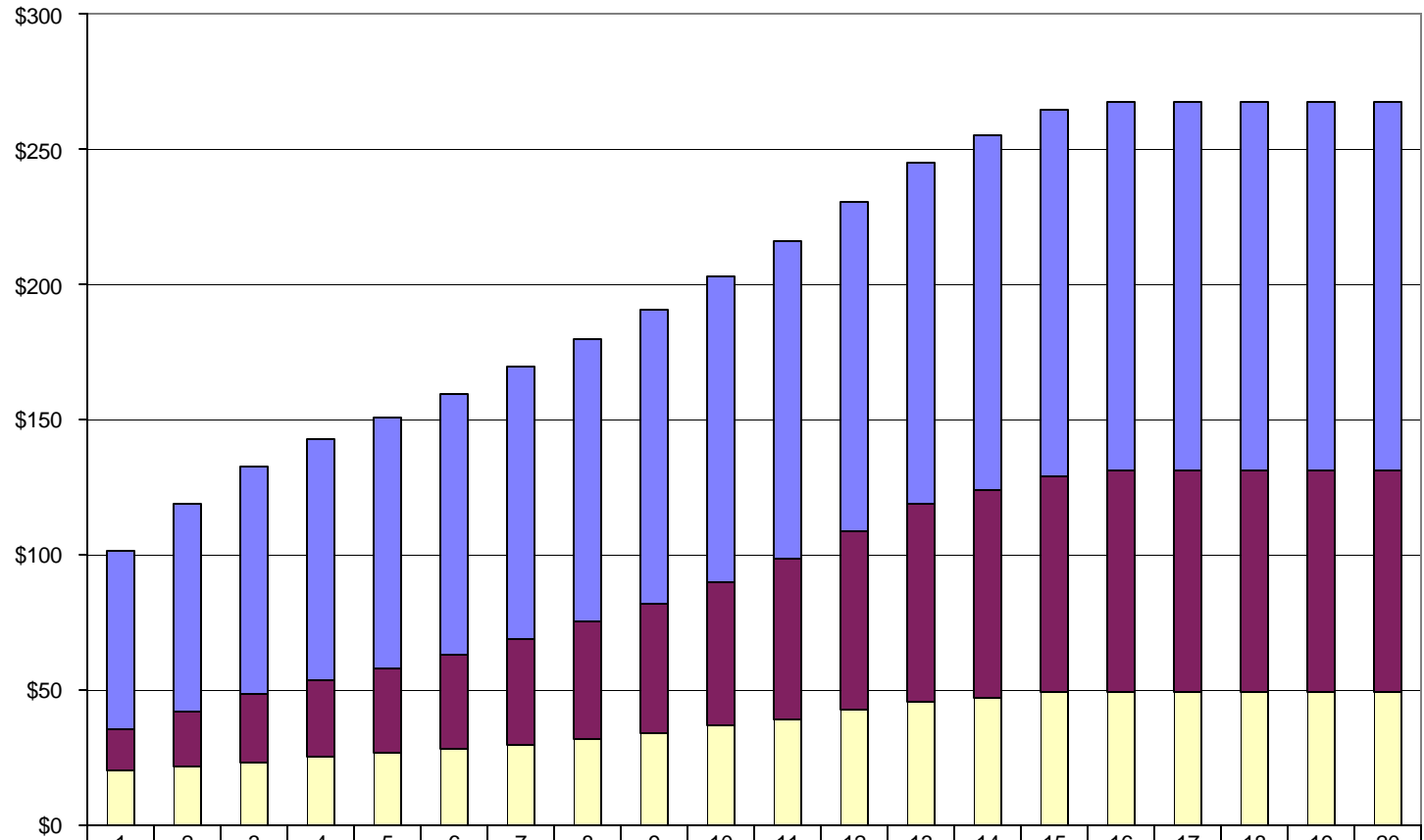
CAPEX per HH vs No HH (GigE)



Revenues

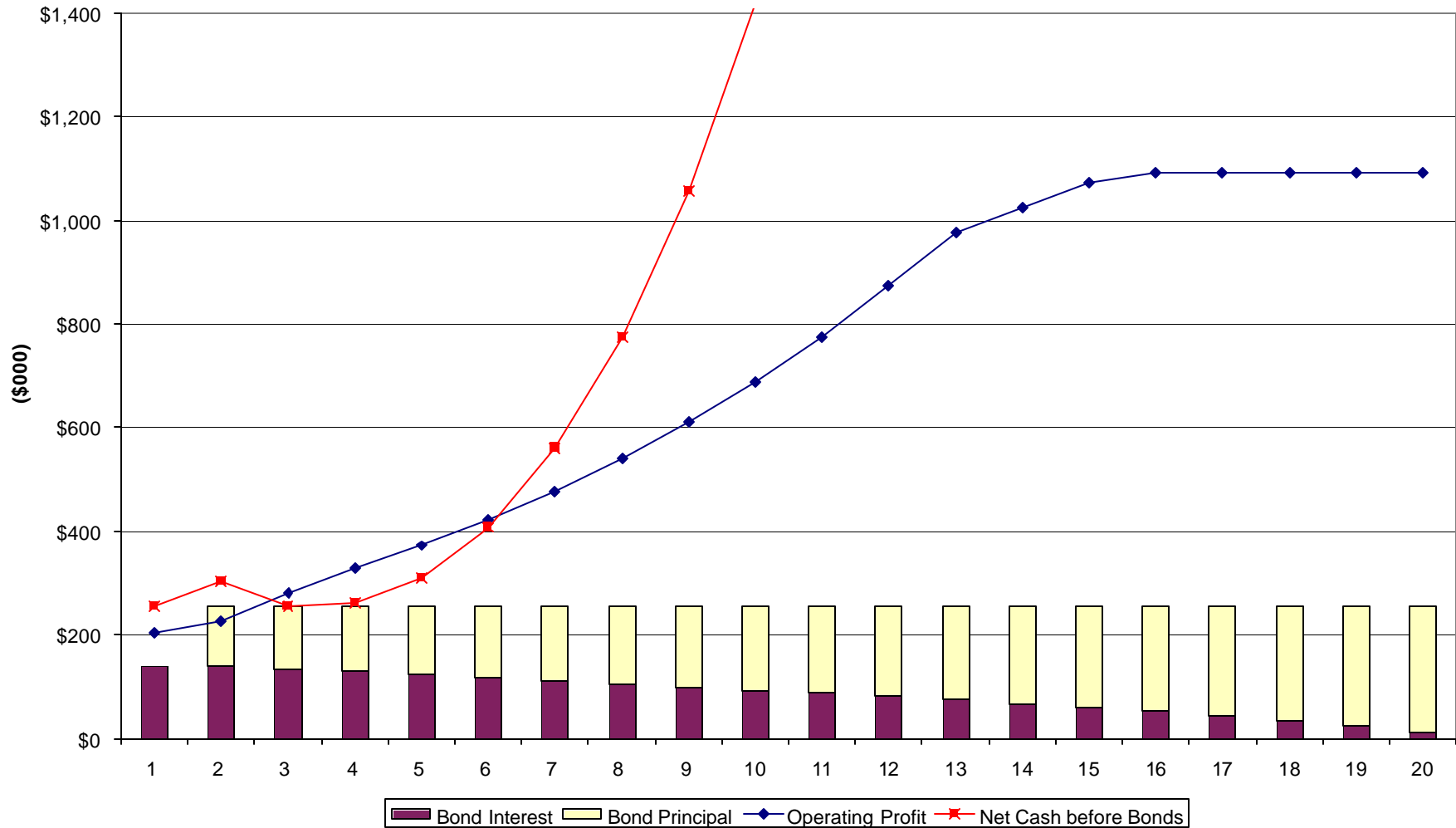


Operating Expenses



■ Network Operations & Maintenance	\$66	\$77	\$85	\$89	\$93	\$97	\$101	\$105	\$109	\$113	\$117	\$122	\$126	\$131	\$135	\$137	\$137	\$137	\$137
■ Sales Commissions	\$15	\$21	\$25	\$28	\$31	\$35	\$39	\$43	\$48	\$53	\$60	\$66	\$73	\$77	\$80	\$82	\$82	\$82	\$82
■ Billing & Administration	\$20	\$21	\$23	\$25	\$26	\$28	\$30	\$32	\$34	\$37	\$39	\$42	\$46	\$47	\$49	\$49	\$49	\$49	\$49

Bond Coverage



Opportunities and Risks of MBN Project

Opportunities

- *Strong demand for MBN broadband and enhanced video*
- *Estimated revenue potential more than sufficient to cover financing bonds*
- *Very strong support of MBN, contingent on no new taxes*
- *Substantial revenue upside from cellular carriers (distributed antenna systems) and sale of dark fiber*
- *Significant “surplus” cash likely after Year 4 with just broadband and some video*
- *Competitive environment, enhanced services, improved economic development*

Risks

- *Senior population segment forms very weak market base*
- *ISPs, other revenue opportunities need to be established*
- *Network deployment should balance costs with revenues*
- *Choice of technology and vendors*
- *Competing new technologies: wireless, etc.*

Schedule & Next Steps

