

Results and Updates from *Vermont Poll 2010*

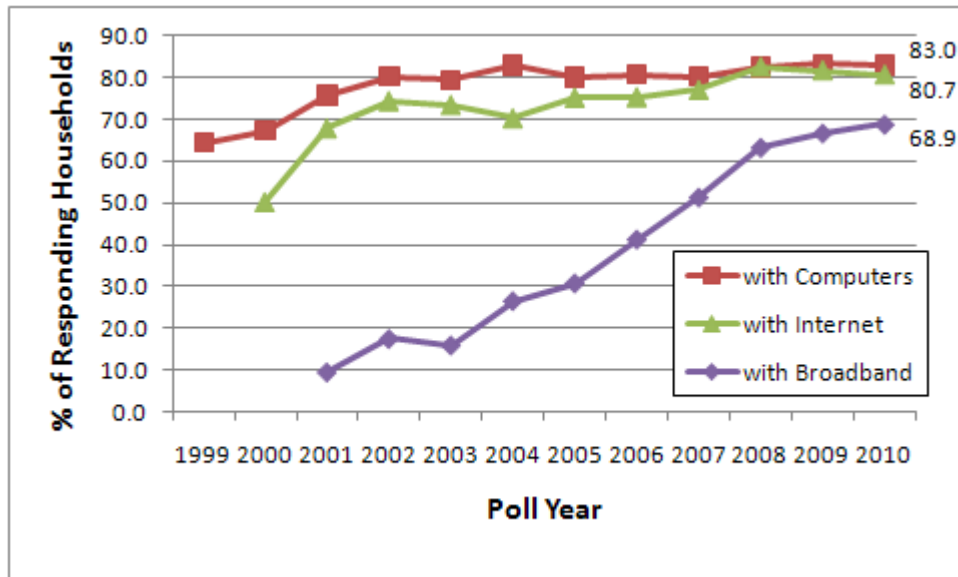
Household Internet Connectivity

high-speed connections are rising, but broadband is not available to all households, and digital divides remain.

Computer Ownership and Internet Connectivity

For more than a decade, the *Vermont Poll* has collected data on computer ownership and Internet connectivity among Vermont households. The percentage of households with computers has held steady just above 80% for several years (see Figure 1). Household Internet connectivity has risen to nearly match computer ownership (80.7% in 2010). Broadband or high-speed Internet connections have been on the rise in recent years, reaching 68.9% in 2010. Overall 85.5% of Vermont households connected to the Internet have broadband in 2010.

Figure 1. Vermont households by computer ownership, Internet connections, and broadband connections, 1999-2010.



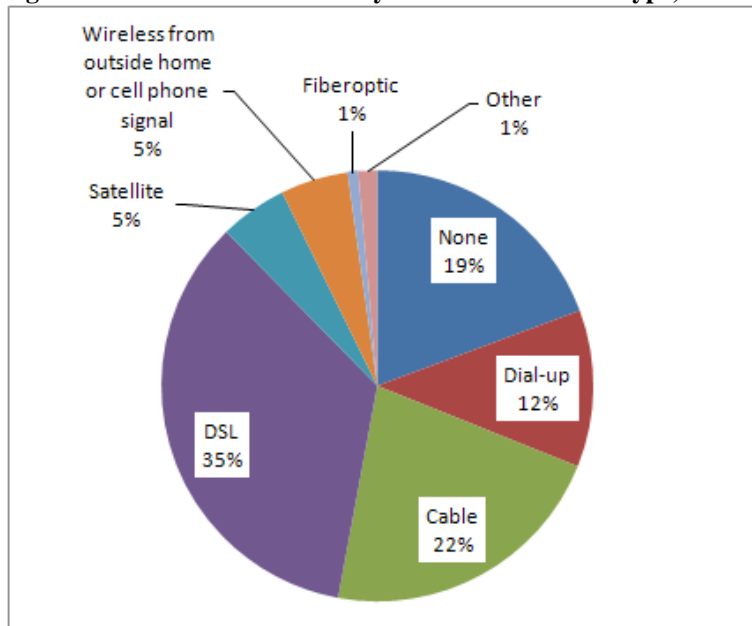
$N_{2010\text{computer}} = 659$, $N_{2010\text{Internet/broadband}} = 631$

Source: University of Vermont Center for Rural Studies, *Vermont Poll*, 1999-2010.

Internet Connection Types

Vermont households were asked what type of Internet connection they had (see Figure 2). Other than those households that had no Internet at all (19%), the plurality had DSL (35%), followed by cable (22%) and dial-up (12%).

Figure 2. Vermont households by Internet connection type, 2010.



N = 631

Source: University of Vermont Center for Rural Studies, *Vermont Poll, 2010*.

Determining Broadband Connectivity

This report uses the terms broadband and high-speed Internet interchangeably. The US Federal Communications Commission defines broadband as an Internet connection with an upstream and/or downstream data transmission speed of 768 kilobits per second. However it is very difficult, if not impossible, for survey respondents to find and report their true Internet connection speed. Therefore the *Vermont Poll* and many other surveys on Internet connectivity determine broadband connectivity by Internet connection type. For the 2010 *Vermont Poll*, a household was determined to have broadband if their Internet connection was via DSL, cable, satellite, outside wireless or cell phone Internet or fiber optic. In reality any individual connection of one of these types could possibly supply speeds below the true FCC speed definition.

Availability of Broadband

Overall, 78.5% of Vermont households either have broadband Internet or report that it is available to them. Broadband availability (regardless of connection) has hovered around 79%, since it was first measured by the *Vermont Poll* in 2008. However, as stated in the previous section, broadband connectivity could be overstated in this report. A speed test is not used by the *Vermont Poll*, and some connections deemed to be broadband may not meet the true FCC definition.

Tracking Digital Divides with the *Vermont Poll*

“Digital divide” is a term that refers to inequalities in the access that people have to information technology and Internet resources. For some time now, *Vermont Poll* data have shown that there are an income-based divides in household computer ownership and connectivity. For instance, households with higher incomes are more likely to have computers. The 2010 poll data continue to follow this trend (see Table 1). Table 1 also shows that lower income households are less likely to have Internet connections, whether they have a computer or not, and less likely to have broadband, overall.

Table 1. Percent of Vermont households that have a computer, an Internet connection or a broadband connection by household income, 2010

Household Income	% with Computer	% with computer that have Internet	% of all households that have Internet	% of all households that have broadband
Less than \$25,000	56.7	81.5	47.8	37.2
More than \$25,000	90.0	96.4	88.5	75.8
\$25,000 - \$50,000	81.6	93.7	79.2	68.2
\$50,000 - \$75,000	90.6	94.7	85.6	72.1
\$75,000 - \$100,000	96.8	98.9	97.8	81.1
More than \$100,000	98.7	100.0 (±5.0%)	100.0 (±5.0%)	89.6
Total Households Reporting Income	82.9	94.2	79.9	67.7

$N_{\text{computer}} = 560$, $N_{\text{Internet1}} = 451$, $N_{\text{Internet2}} = 538$, $N_{\text{broadband}} = 538$

Source: University of Vermont Center for Rural Studies, *Vermont Poll*, 2010

Note: Results of 100% should be interpreted in light of a margin of error of ±5.0%.

However, there does not seem to be a statistically significant income-based difference between households that have dial-up versus broadband Internet connections. Also, there is no statistically significant income-based difference in whether or not broadband is available to a household in Vermont, were it able to connect.

Table 2. Percent of Vermont households with Internet that have broadband by rural-suburban-urban characteristic, 2010

Character of Household Location	% with broadband available (connected or not)	% connected to Internet that have broadband
Rural	76.6	81.8
Suburban	83.0	92.9
Urban	83.2	91.7
Total	79.1	85.5

$N_{\text{broadbandavail}} = 640$, $N_{\text{broadband}} = 497$

Source: University of Vermont Center for Rural Studies, *Vermont Poll*, 2010

The *Vermont Poll* and other information sources have revealed a rural digital divide in Internet and broadband connectivity in Vermont and around the nation. In 2010, it has been found that rural households that are connected to the Internet are less likely to have broadband than suburban or urban households (see Table 2). Also, rural households are less likely to report the availability of broadband.

Methodology

The data used in this report was collected by the Center for Rural Studies at the University of Vermont as part of the *Vermont Poll*, most recently conducted in 2010. The 2010 poll was conducted between the hours of 4:00 p.m. and 9:00 p.m. beginning on February 16, 2009 and ending on February 26, 2010. The telephone polling was conducted from the University of Vermont using computer-aided telephone interviewing (CATI). A random sample for the poll was drawn from a list of Vermont telephone numbers, which is updated quarterly and includes listed and unlisted telephone numbers. Cellular phone numbers were not included in the sampling frame. According to the most recent estimates, 5.1 percent of Vermont households

have at least one wireless cellular phone, but no landline telephone.¹ As a state, Vermont has the lowest level of “wireless-only” households in the country. Only Vermont residents over the age of eighteen were interviewed. The poll included questions on a variety of issues related to public policy in the state of Vermont. There were 661 respondents to the 2010 Vermont Poll. The results based on a group of this size have a margin of error of plus or minus 4 percent at a confidence interval of 95 percent.

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About CRS

The Center for Rural Studies is a nonprofit, fee-for-service research organization that addresses the social, economic, and resource-based challenges faced by rural people and communities. Founded in the University of Vermont's College of Agriculture and Life Sciences in 1978, CRS supports the research and teaching missions of the university through its work in applied research, program evaluation, consulting, and outreach. Currently CRS is involved in the ARRA-funded Vermont Broadband Mapping Initiative with the Vermont Center for Geographic Information, the Vermont Department of Public Service and other partners. The goal of this initiative is to map and verify the availability of high-speed Internet in Vermont.

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¹ Blumberg et al. (2009). Wireless Substitution: State-level Estimates from the National Health Interview Survey, January – December 2007. *National Health Statistics Report*, 14.

Appendix:

Vermont Poll 2010

Questions on Computers and Internet Connectivity

Is there a personal computer or laptop in your home?

1. Yes
2. No
3. Don't Know
4. Refused

What type of Internet connection do you have at home?

1. None
2. Dial up modem (using phone lines)
3. Cable Modem
4. DSL (also using phone lines, faster than dial-up)
5. Satellite Internet service
6. Wireless or cellphone internet coming in from outside your home
7. Fiberoptic
8. Other (specify)
9. Don't know
10. Refused

You may have heard of the term broadband, which is another name for a high-speed Internet connection. Broadband or high-speed Internet are defined as anything faster than a dial-up telephone Internet connection.

At this point in time, is any high-speed Internet service available to your home, if you wanted to be connected?

1. Yes
2. No
3. Don't Know
4. Refused