

Status Report to the Board of Selectmen

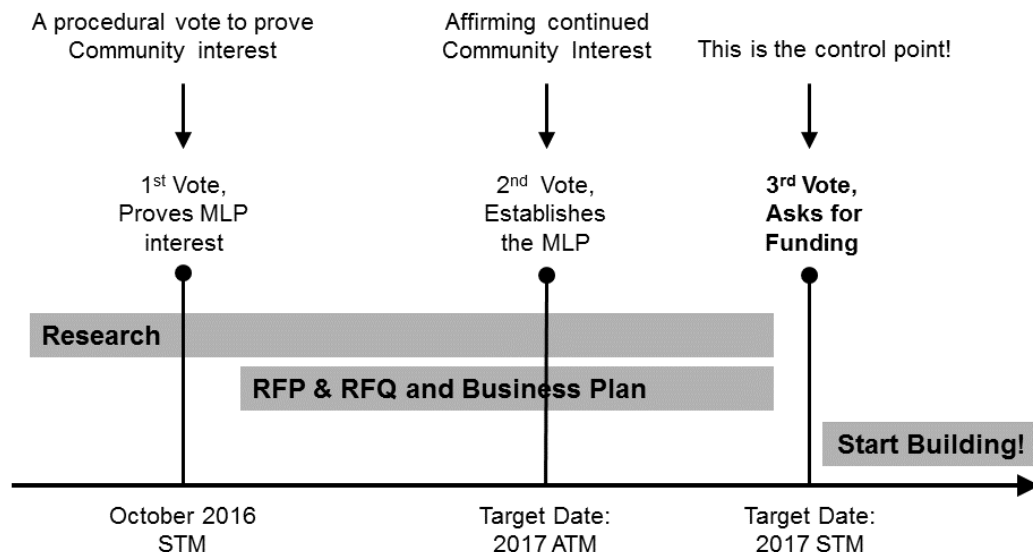
Town of Harvard Broadband Committee

2/4/2017

The Broadband Committee has a two-year charge from the Board of Selectmen to research the feasibility and develop a proposal for a municipal fiber-optic broadband network for the Town of Harvard. If found to be feasible and approved by the Board of Selectmen and the Town, the Committee would be responsible for the development of plans, budgets, financing, building and commissioning the operation of the service.

Sufficient members to form a quorum were appointed in July 2016, and the Committee held its first meeting on August 5th, 2016. The project timeline is shown in the following figure:

The Project Timeline



The first major project milestone is citizen approval of a Municipal Light Plant (MLP), a no-cost legal entity that enables the creation of a municipal Internet Service Provider (ISP). As defined by MA Law Chapter 164, two separate votes are required to affirm the Town's support to create an MLP. The creation of an MLP does not obligate the Town in any way; it enables the Town's option to have a municipal ISP in the future if voter approved. We thank the Town for its approval in the first vote. This outcome was supported by the Committee's communications efforts, including public presentations and outreach as well as the creation of the harvardbbc.org website to keep the public informed.

The Committee developed a strategy to use the time made available by the two required votes to perform due diligence in three areas:

- Best practices and lessons learned from the other 42 MLP ISP efforts currently underway in MA. We have established ongoing contact with several of the initiatives and gained significant insight from their efforts.
- Estimating the capital cost required for infrastructure using available public Geographical Information System (GIS) sources, including the availability of existing fiber optic cabling already present in Harvard.
- Estimating the market acceptance (take rate) of a competitive (non-exclusive) municipal Fiber-to-the-Home/Business (FTTX) ISP, including the adoption rates for classes of services and possible pricing.

This research is essential for the definition of viable options, including a business plan for a Municipal Broadband Internet.

Our primary objectives for 2017 remain the same as our original plan, and we will examine adding additional stretch goals, depending upon our progress and discoveries:

- Prepare for the second vote of approval for the creation of a Harvard MLP. We will actively keep the community informed of our progress and findings, and we ask that everyone support this critical step with their affirmative vote.
- Complete the research initiatives (including direct surveys) and develop options to bring ISP competition to Harvard. One of the options will include a business plan for a Harvard MLP FTTX ISP.
- Deliver a business plan to the Board of Selectmen for their evaluation and consent for presentation to the Town for voter approval.
- Investigate feasibility of staged deployment of the FTTH network using the existing dark-fiber.

In the attached appendix, you will find preliminary results of our efforts in three key areas: preliminary results of the customer survey, estimating fiber-optic line lengths using MassGIS database, and feedback from other MLPs.

The committee still has an unfilled seat and is looking to add additional finance skills to complement our current roster. Please consider joining the committee if your background is in finance.

We thank the Board of Selectmen and our community for the support of in bringing better Internet services to our Town!

APPENDIX A

A Preliminary Report of Survey Data on Community Internet Needs

The Broadband Committee started the collection of a survey to examine the community's needs for internet services. Data collection was performed for 18 days through the use of an open access online survey using Survey Monkey. The survey was promoted on Next Door Harvard and in the Harvard Press.

Only de-duplicated household (non-business) responses that are from Harvard residents (validated by name, street and IP address) are included in this preliminary report. The sample population is neither random nor demographically balanced, however 231 responses represents more than 10% of Harvard's households and at least 516 people of voting age.

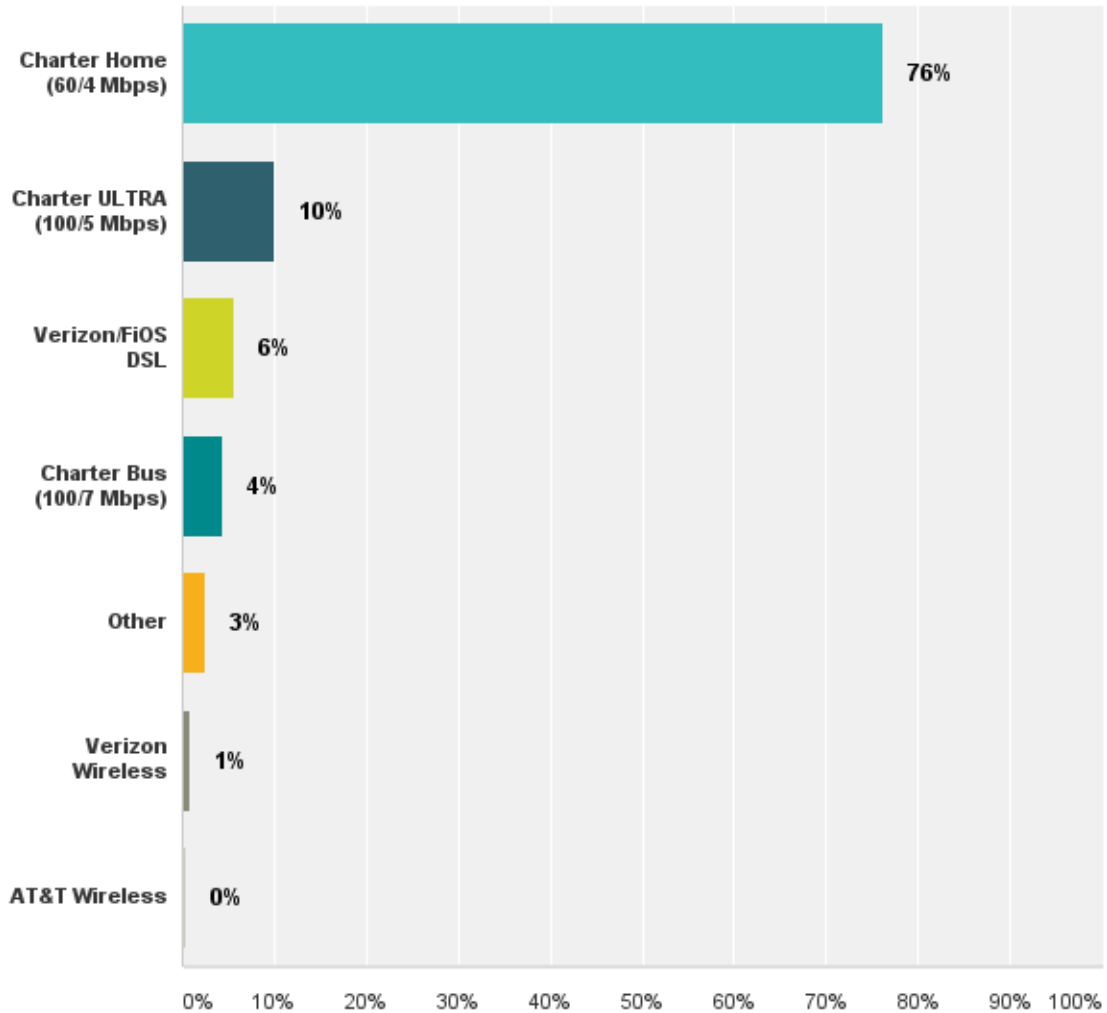
The Committee will resume online survey data collection, perform in-person community outreach and directly survey town businesses to increase the sample population before performing our final analysis for the business plan.

The survey is divided into two sections. The first section has 12 primarily factual questions; 4 questions were mandatory. The optional second section further explores consumer sentiment.

The following is a summary of survey question responses.

Q1 Which of the following ISPs do you use in your home?

Answered: 231 Skipped: 0



The majority of responding households (90%) are using Charter's internet services.

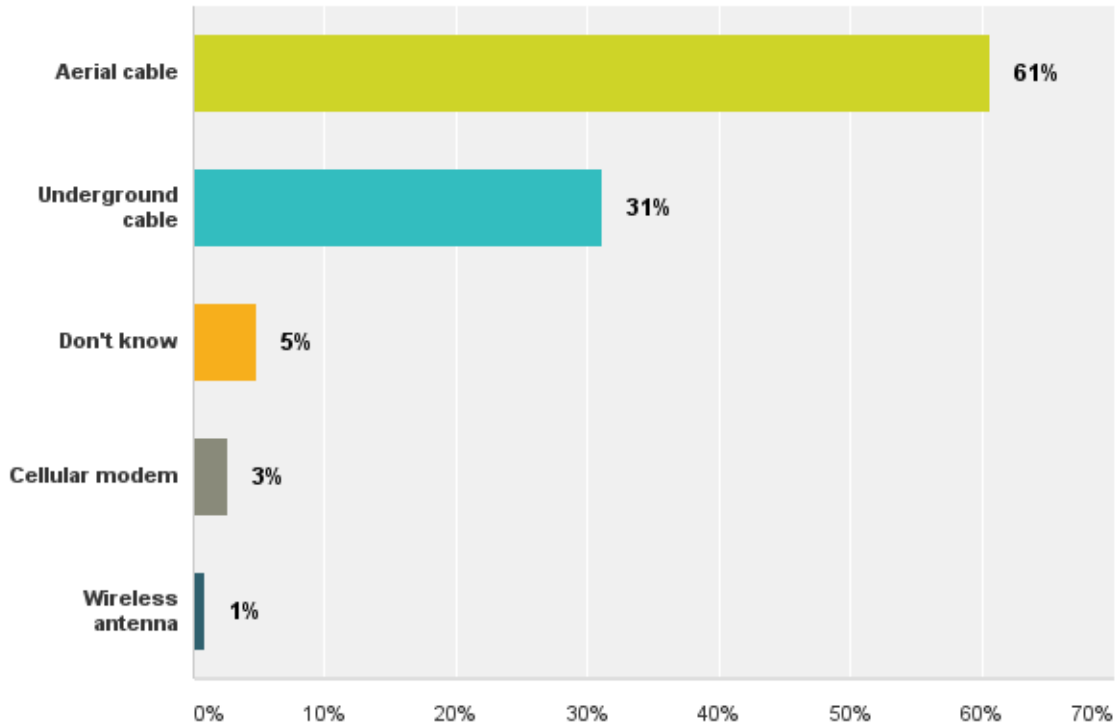
- 76% are using the lowest available cost service (60 Mbps)
- 14% are paying for a higher speed 100Mbps service, including 4% that have upgraded to Business class service to increase their upload speed from 5 to 7 Mbps¹.

Interestingly, there is one Harvard household that has Verizon fiber optic FiOS service, who was able to get this since his driveway was in the Town of Boxborough.

¹ This option is not widely known to be available to residential users.

Q2 How is your home connected to your primary ISP?

Answered: 231 Skipped: 0

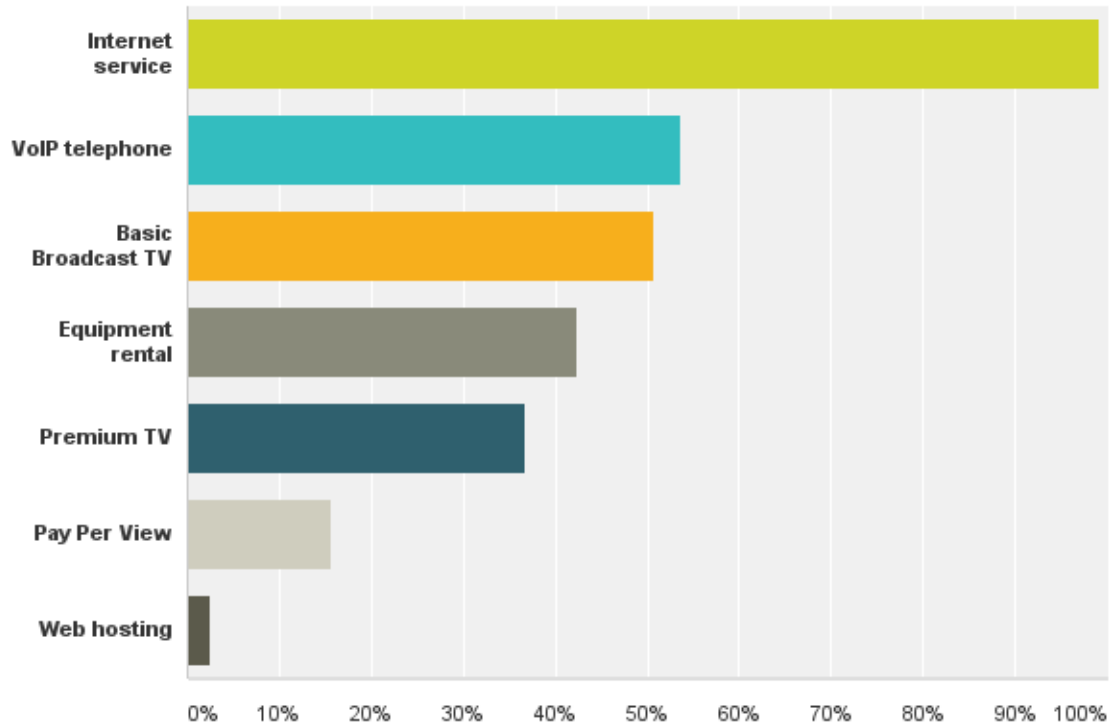


A majority of respondents (61%) are connected to their service provider by overhead cable. This information will be coupled with the residential address to help determine infrastructure costs for a future FTTH service.

Underground cable attached customers will require higher cost trenching work in to be connected to a new service.

Q3 What services do you currently purchase from your ISP?

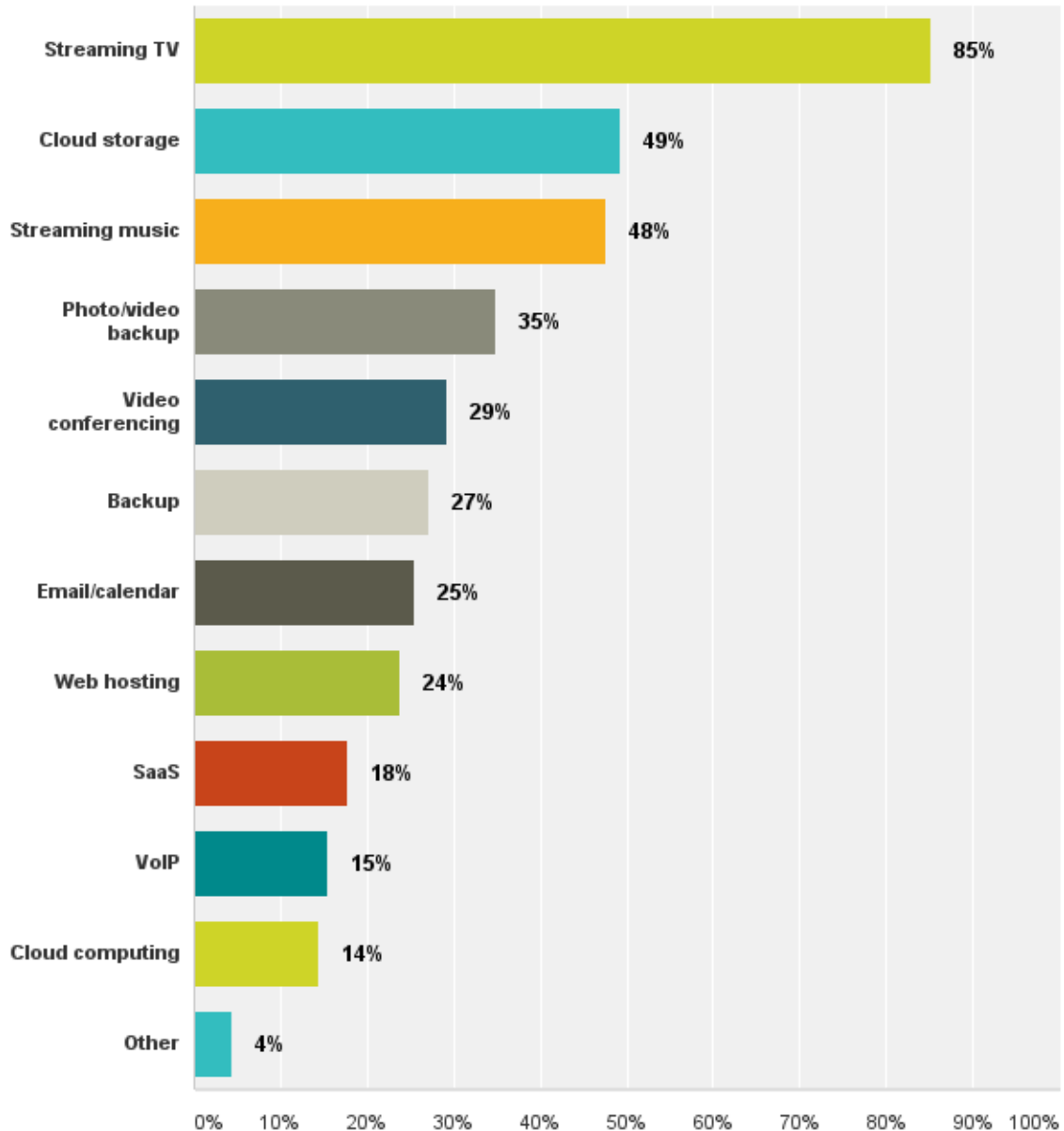
Answered: 231 Skipped: 0



More than 50% of households are bundling VoIP telephone and/or Basic Broadcast TV services with their internet service.

Q4 What paid internet services do you purchase separately from and in addition to your ISP's offerings?

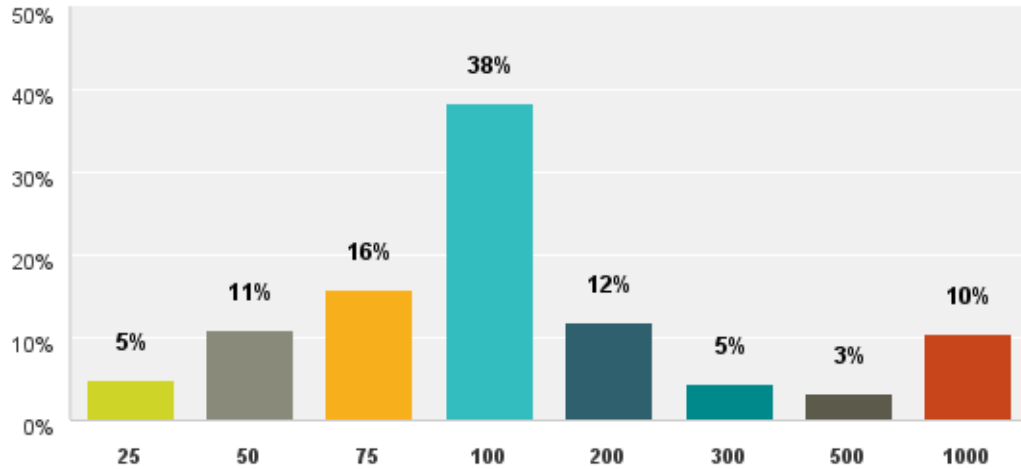
Answered: 181 Skipped: 50



85% of those that purchase additional services separately from their ISP (78%) are using streaming video services in addition (or as an alternative) to cable TV. This may reflect the emergence of 'cord cutting' (a desire to reduce the use of cable TV in favor of IP network services. Note the use of backup, video and storage services (increases bandwidth needs).

Q5 Which speed would you prefer to purchase if it was available?

Answered: 221 Skipped: 10



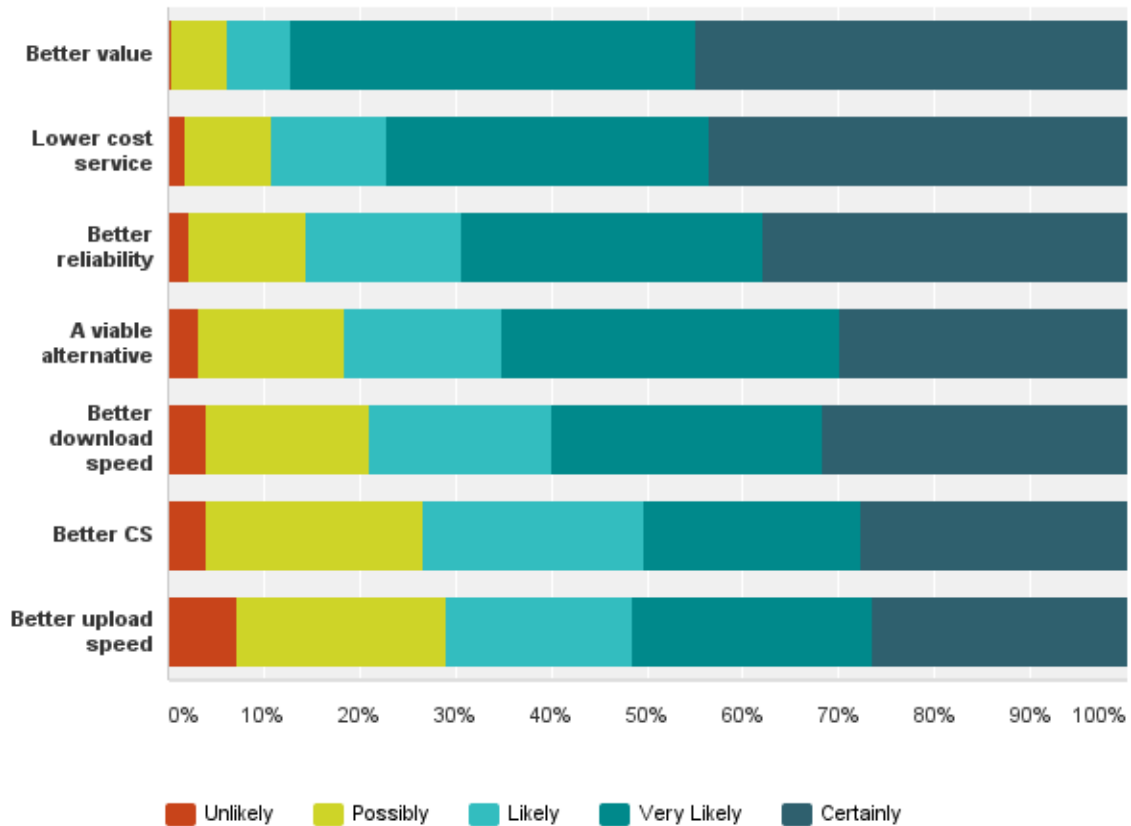
While 30% of responding households would choose speeds faster than now available in Harvard, 16% would choose a lower speed, probably to reduce their monthly costs.

38% would choose 100Mbps (a speed currently available), compared to the 14% that currently pay for that level of service now.

Question 6 asked the respondent to indicate how much they are willing to pay for the level of service they preferred in question 5.

Q7 How likely would you be to change your current ISP, if a competitor offered

Answered: 229 Skipped: 2



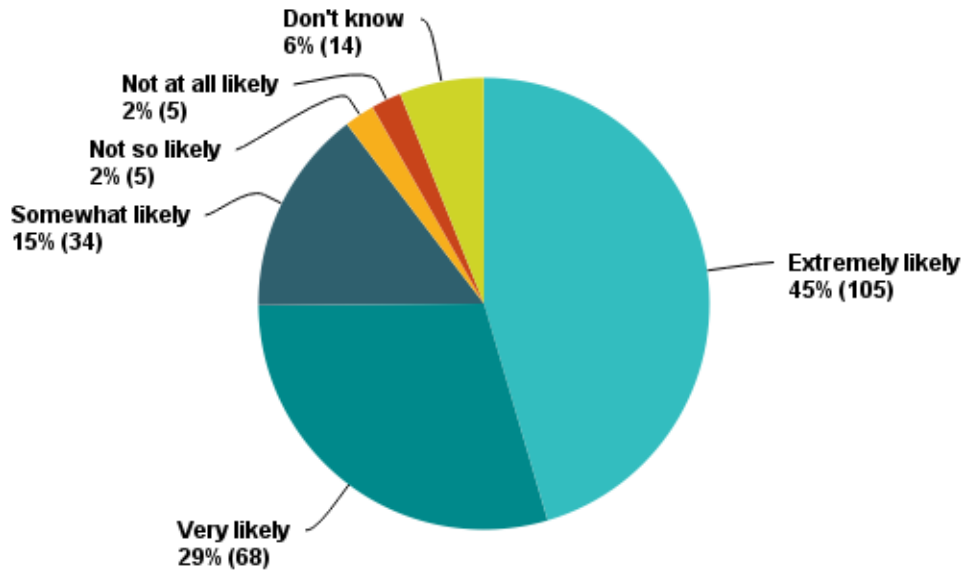
The primary driver to switch ISPs is better value (service level for price paid). 94% would switch ISPs for better value, presumably at the same price point.

While consumers would switch for lower costs (89%), almost as many would switch for increased reliability (86%) or any viable alternative (82%). 74% would switch for better customer service. These responses represents significant dissatisfaction with currently available service providers.

69% would switch providers for better download speed, while 70% would switch for better upload speeds.

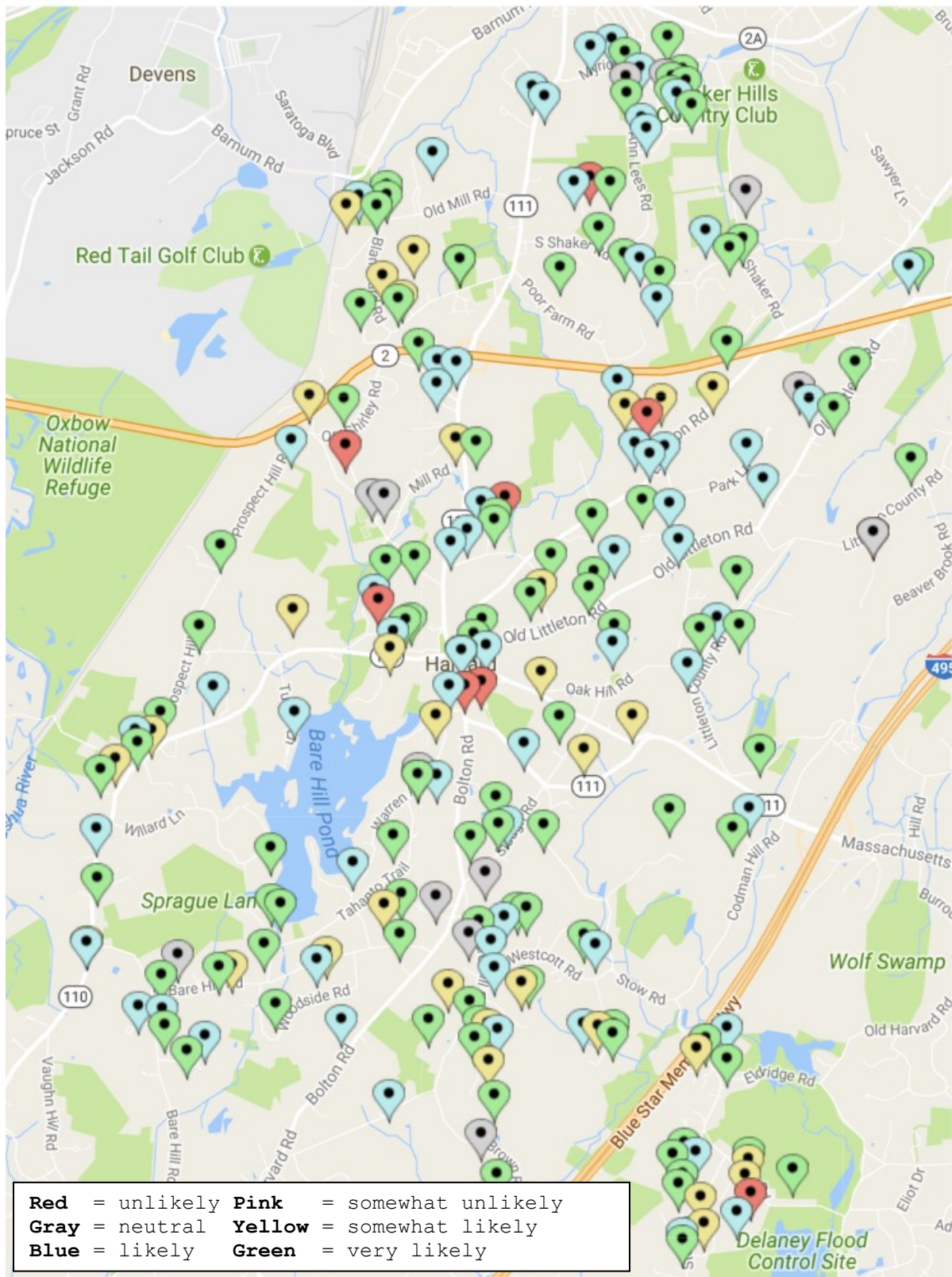
Q8 If FTTH were available today from a Town MLP, how likely would you be to switch?

Answered: 231 Skipped: 0



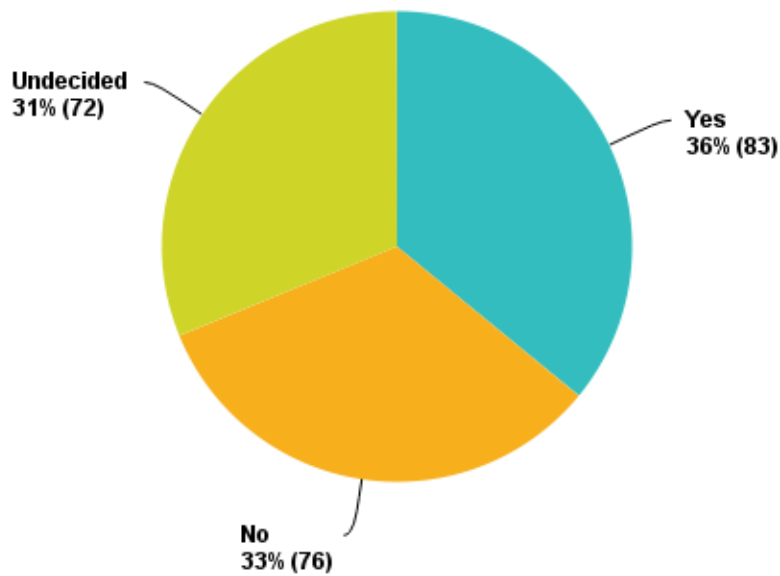
When specifically asked how likely their household was like to switch to a Town MLP ISP, 89% of respondents indicated that they were somewhat, very or extremely likely to switch from their current provider. Only 4% were not likely while 6% were undecided.

Willingness to Switch to MLP



Q9 Would you require VoIP in addition to your internet service?

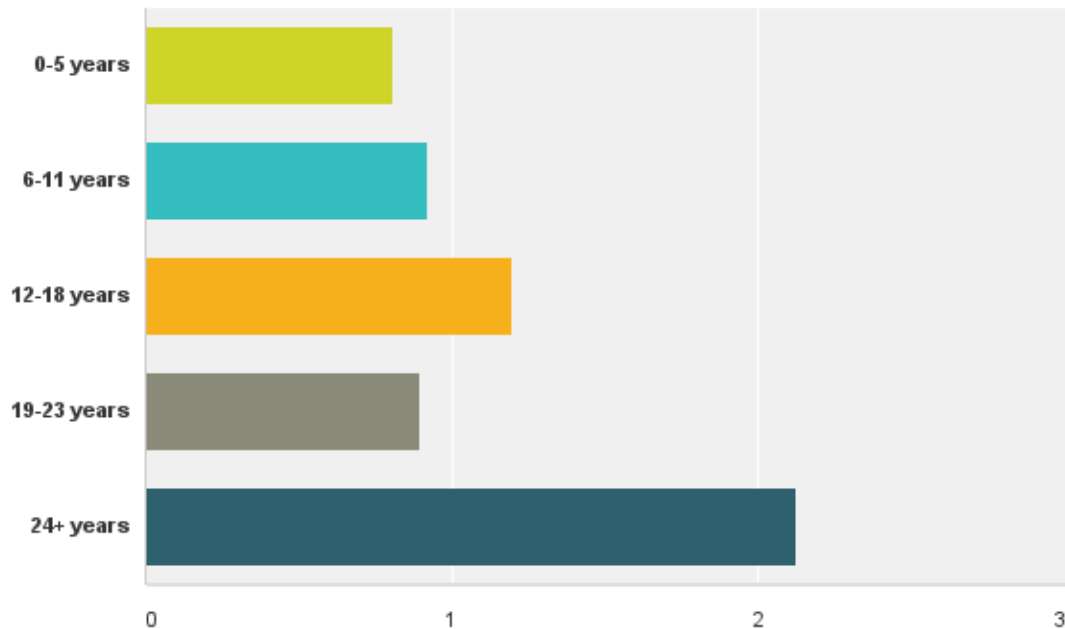
Answered: 231 Skipped: 0



A lower number of respondents (36% vs. currently more than 50%) would require VoIP service, indicating that respondents are paying for bundled services that they do not require to reduce their total costs. 64% may not choose to have a landline telephone, illustrating the shift to individual cellular mobile phone use over a static home telephone service.

Q10 How many people, by age, live in your household?

Answered: 227 Skipped: 4



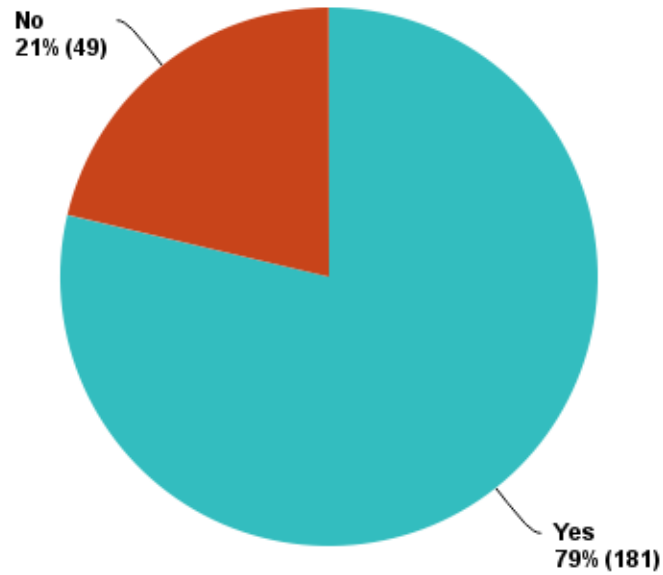
Responding households accounted for 516 people of voting age – 98% of respondents had at least 2 voting age adults in the home.

In future, this demographic data may allow the committee to create a model estimating internet usage patterns attributable to age, so that projected usage can be estimated for provisioning.

Question 11 asked for the identity and location of the responding household.

Q12 Would you like to receive periodic emails about our progress?

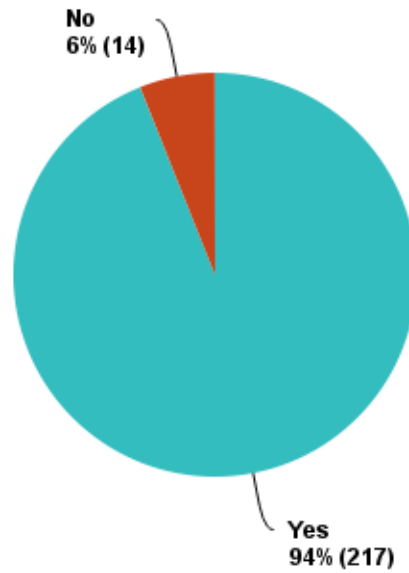
Answered: 230 Skipped: 1



79% of respondents showed an intent to follow the Committee's future progress by electing to be added to our existing mailing list.

Q13 May we ask you five more questions now about your opinions?

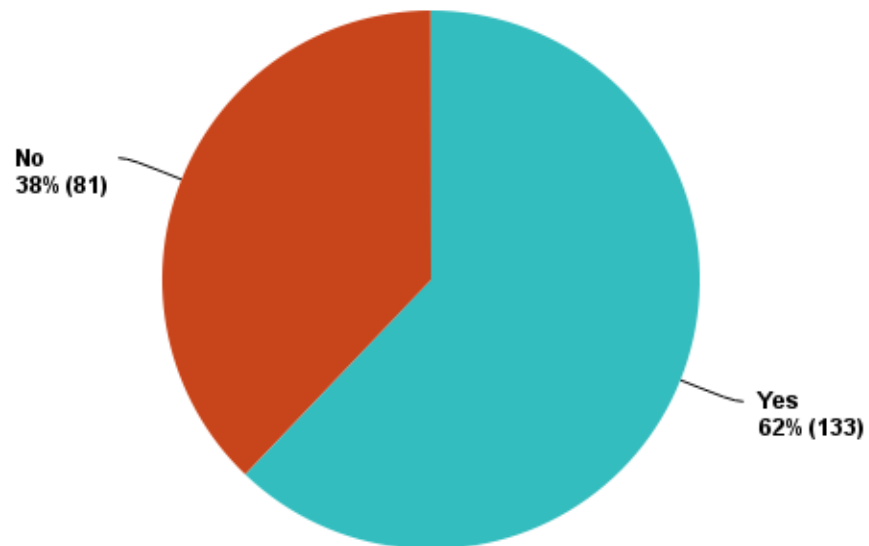
Answered: 231 Skipped: 0



94% of respondents agreed to provide additional survey data, confirming a high level of engagement.

Q14 Have you researched alternative ISP options?

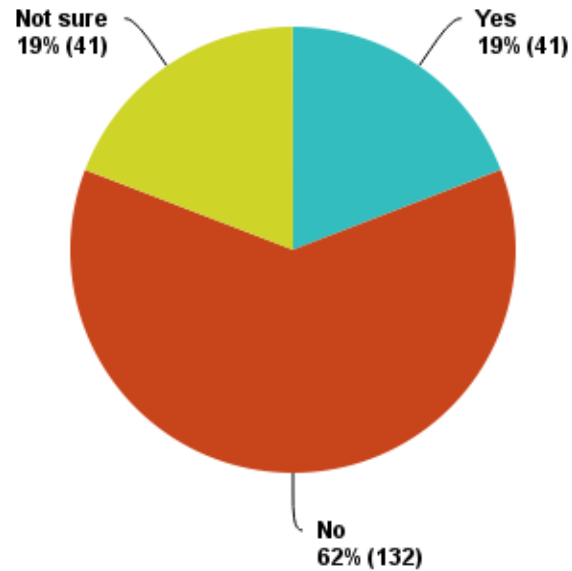
Answered: 214 Skipped: 17



62% of respondents have researched ISP alternatives, confirming dissatisfaction and a heightened willingness to change.

Q15 Do you think there is sufficient marketplace competition for ISPs in Harvard?

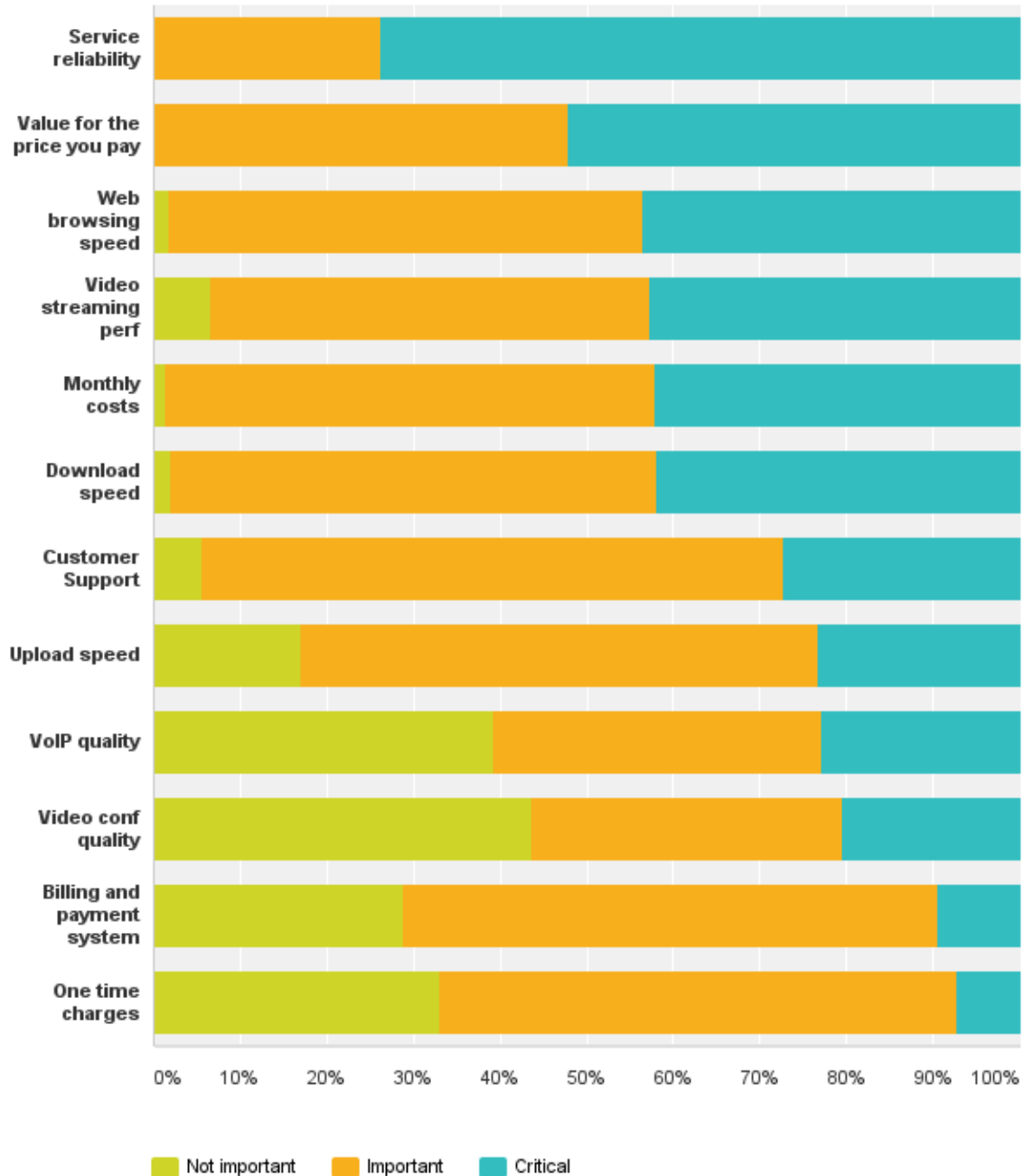
Answered: 214 Skipped: 17



62% of respondents feel that there is not sufficient marketplace competition – only 19% feel there is a satisfactory competitive market in Harvard.

Q16 How important are these factors to you?

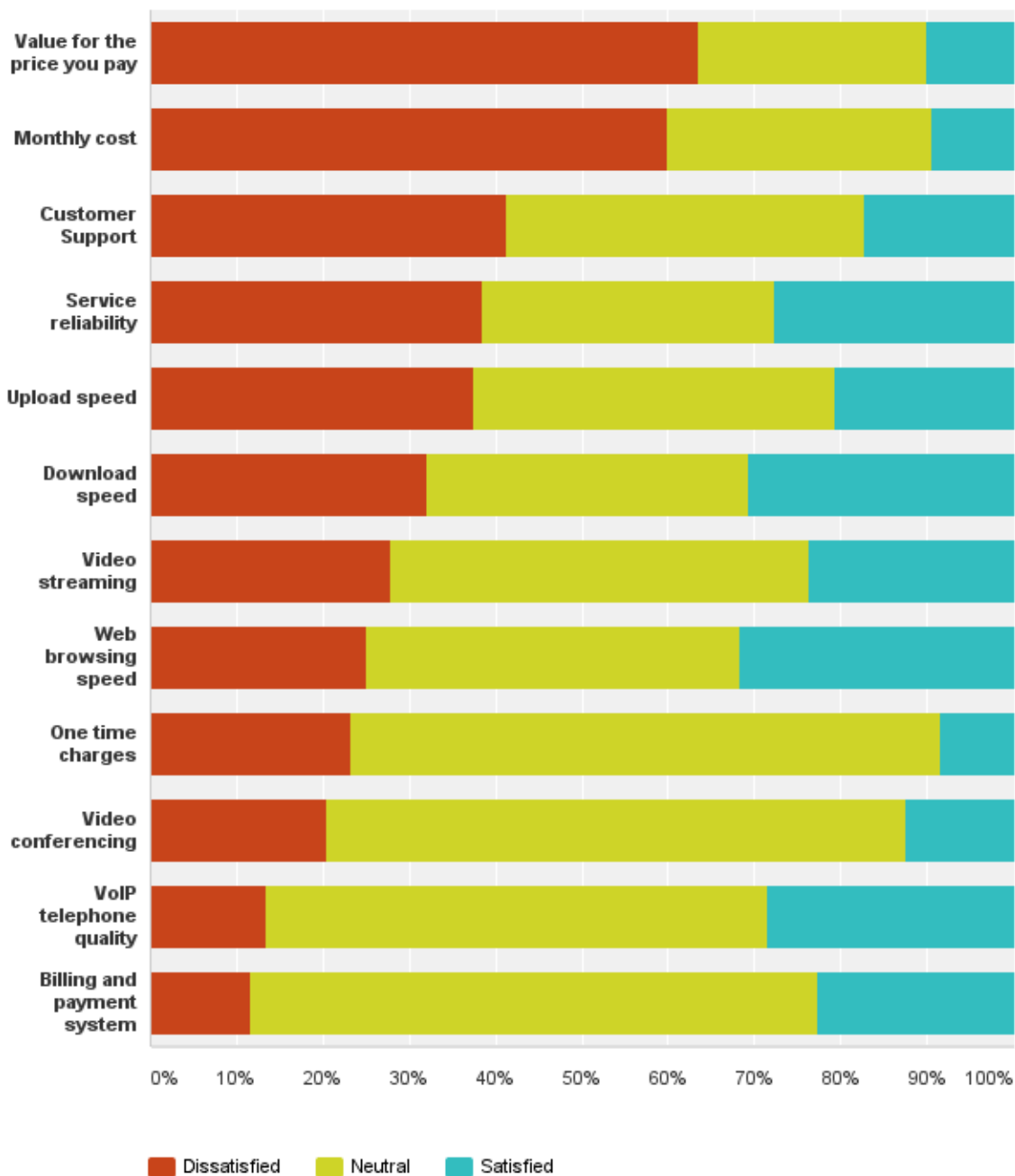
Answered: 214 Skipped: 17



The unanimously cited important factors are reliability and value (service for price paid), followed by speeds – cost was the 4th ranked factor. Customer support is also a major factor.

Q17 How satisfied are you with your current internet service provider for these factors?

Answered: 213 Skipped: 18



The contrast in current satisfaction for the same factors is strong. Respondents are most dissatisfied in the value received. More than 50% are dissatisfied in the value received and price paid. Nearly 40% are dissatisfied with reliability and/or customer service.

Question 18 asked an open ended question about the respondent's thoughts about a Municipal Internet service.

Of the respondents who provided comments:

- Most were in favor (24% Optimistic, 46.5% Supportive vs. 10% unsupportive, 18% neutral)
- 6.4% were satisfied with their current provider (19% were not satisfied).