



Orange County Broadband Survey

October 28, 2015

The goal of the Orange County Broadband Initiative is to identify underserved areas of the county and work to attract Internet service providers offering expanded service and higher speed options.

Over the past few months, Orange County has been working with Orange County residents to improve Internet service around the county. We created a workgroup composed of Orange County staff, residents, a representative of the North Carolina Information Technologies Services' Office of Digital Infrastructure, and a survey methodologist from the UNC Chapel Hill H. W. Odum Institute for Research in Social Science. The workgroup developed a survey to help identify Orange County households with inadequate Internet service options, and to learn residents' reasons for dissatisfaction with Internet service. A link to the survey was publicized through the Orange County website, and paper versions of the survey were made available at the County libraries, the Chapel Hill Library, and several County offices. The survey was also publicized via social media and public service announcements. Any Orange County resident dissatisfied with their current internet service was invited to complete the survey.

We received 1,303 valid responses to the survey. These responses were de-duplicated so as to obtain one response per household, resulting in responses from 1,179 households. It should be noted that this is not a representative sample of Orange County residents; rather, it is a volunteer sample of residents who heard about the survey and opted to take part, with the goal of helping identify areas of the county suffering from inadequate internet service options. The geographic analysis is limited by only having addresses for 86% of the responses.

Survey Results

Satisfaction with Internet Service

1,179 households completed the survey. 1,117 households reported having Internet service at their Orange County residence. Of those, 854 were dissatisfied with their Internet service, the overwhelming reason for the dissatisfaction being speed (737 of the dissatisfied households), followed by reliability (556) and cost (531). Table 1 and Figure 1 summarize the reported reasons for dissatisfaction.

Figure 1. Reasons for Dissatisfaction with Current Household Internet Service

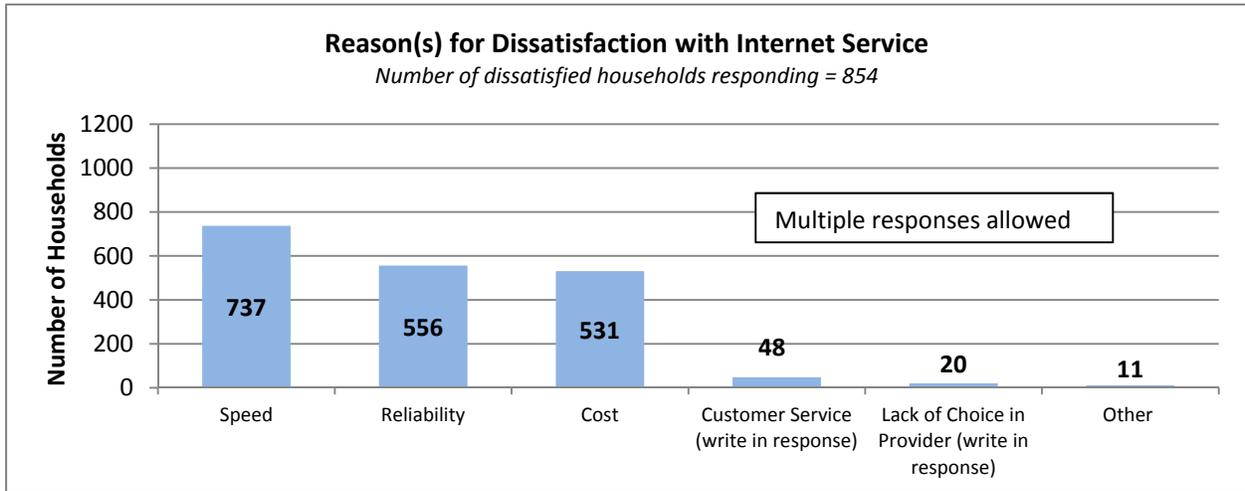


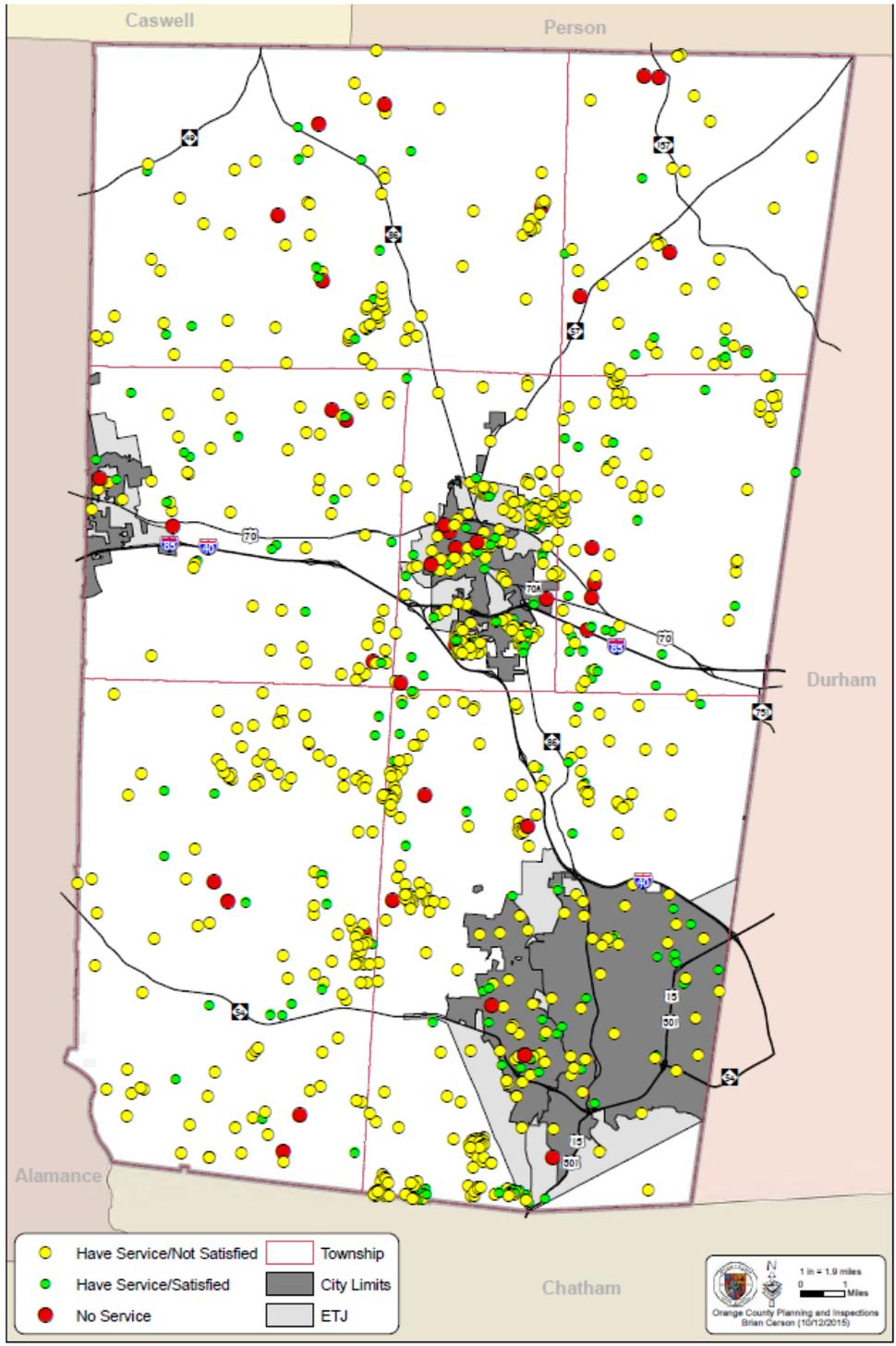
Table 1. Reasons for Dissatisfaction with Current Household Internet Service
 (multiple responses allowed)

Reason	Number of Households	Percent of Households Responding to Survey Who were Dissatisfied with Their Internet Service
Speed	737	86%
Reliability	556	65%
Cost	531	62%
Customer Service (write in response)	48	6%
Lack of Choice in Provider (write in response)	20	2%
Other	11	1%

Number of dissatisfied households responding: 854

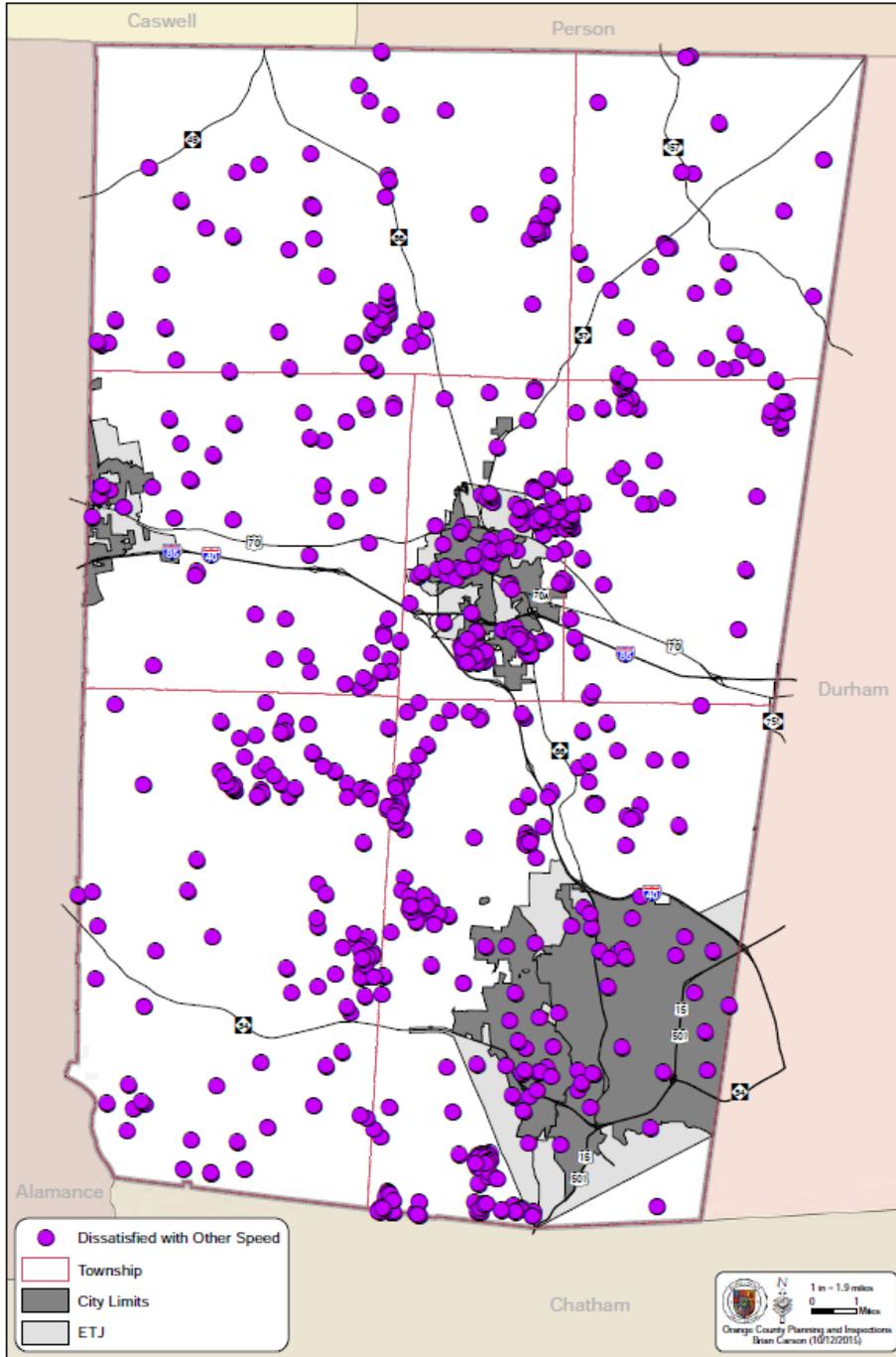
Map 1 shows the locations of satisfied and dissatisfied households that responded to the survey and provided a mappable address. It also shows the location of households reporting no internet service (discussed below).

Map 1. Internet Service Status

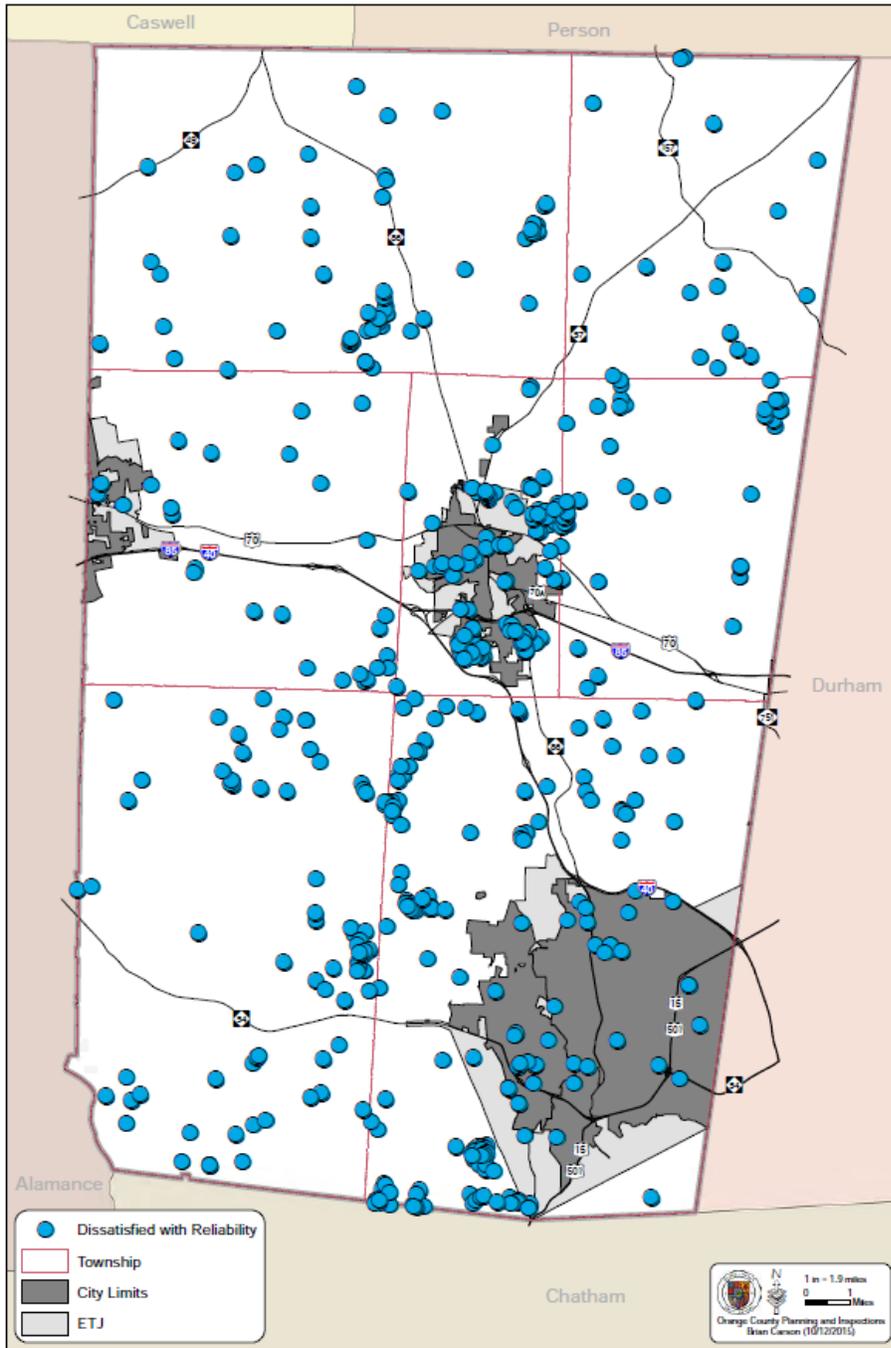


As shown in Maps 2-5, dissatisfaction with speed, reliability, cost and “other” issues was widespread across the County.

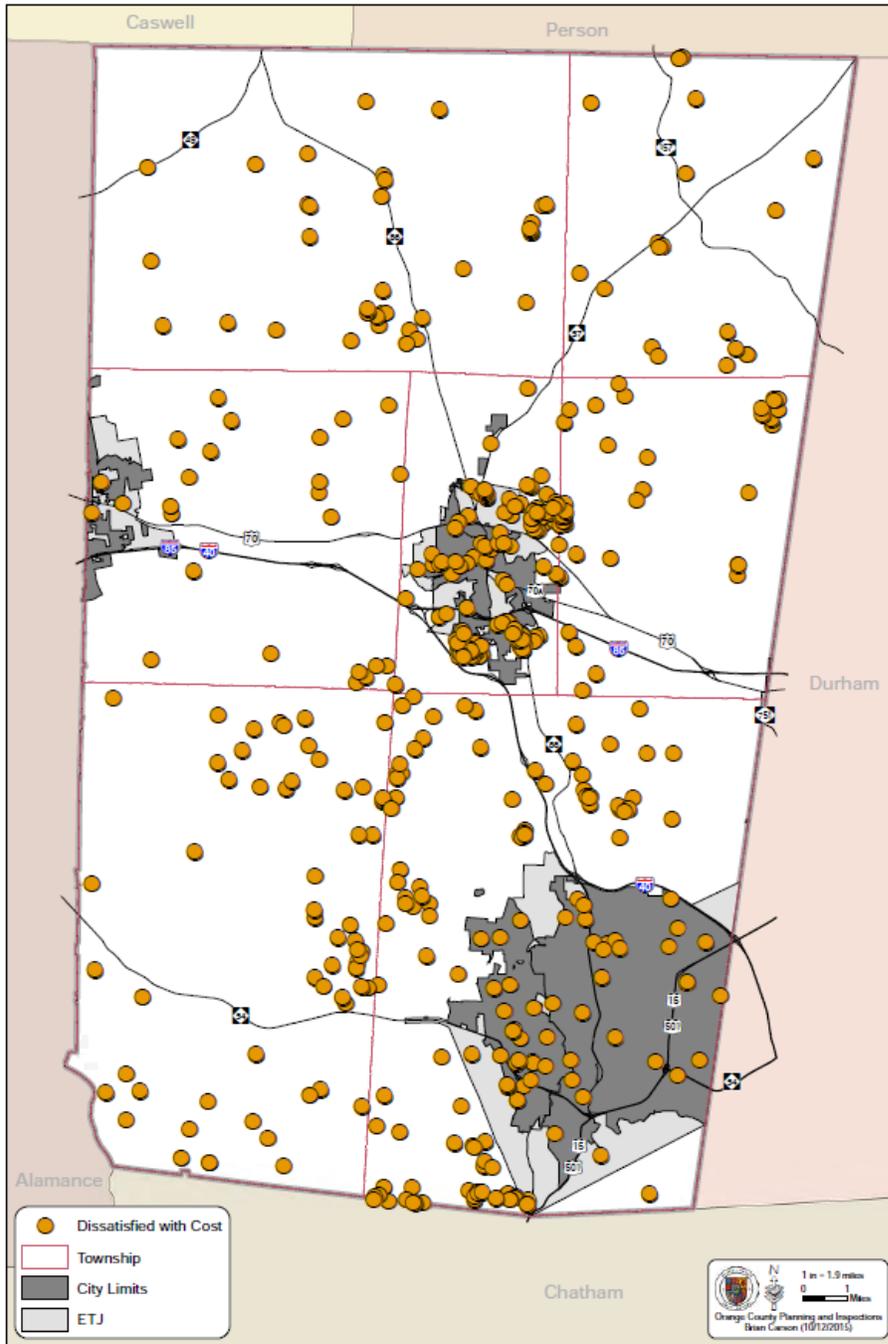
Map 2. Households Dissatisfied with the Speed of Their Internet Service



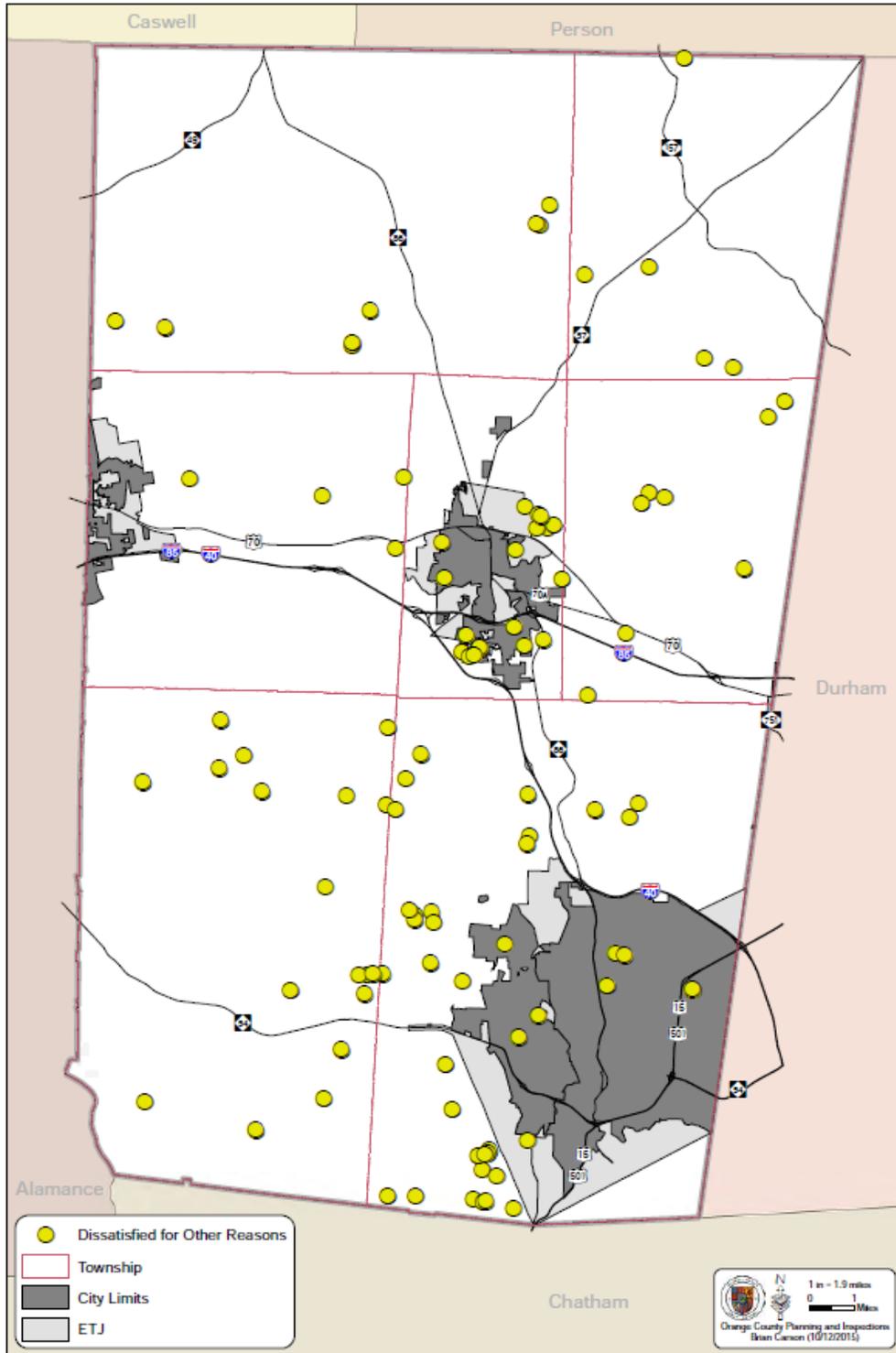
Map 3. Households Dissatisfied with the Reliability of Their Internet Service



Map 4. Households Dissatisfied with the Cost of Their Internet Service



Map 5. Households Dissatisfied with Their Internet Service for **Other** Reasons

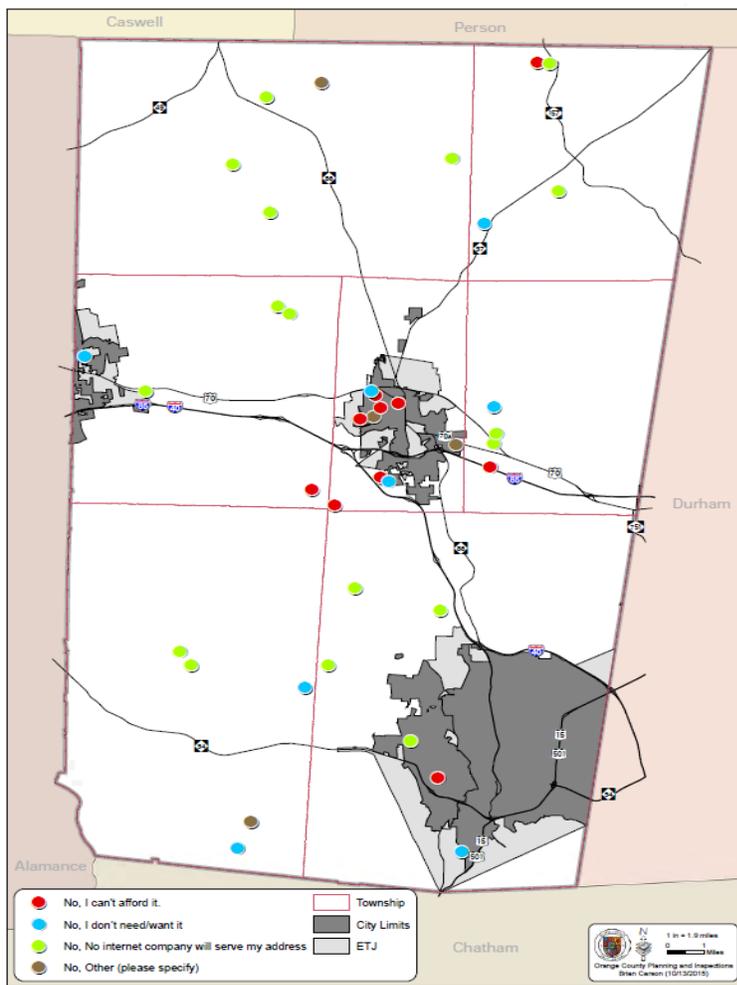


Households with No Internet Service

Sixty-two responding households reported having no Internet service in their home. The most common reason for not having Internet service was that no provider will serve the address (21 households); the next most common is that the household cannot afford it (16 households). Nine households said they have no need for Internet service¹, while the remainder cited other reasons or did not explain. Forty-one of these households provided mappable addresses and are shown on Map 7.

Looking specifically at the 16 households that said they did not have any Internet service because they could not afford it, 9 said they would be willing to pay up to \$25/month 3 said they would pay up to \$50/month, 3 said it was unaffordable at any price, and one left this question blank.

Map 7. Households with no Internet Service and Reasons for no Internet Service

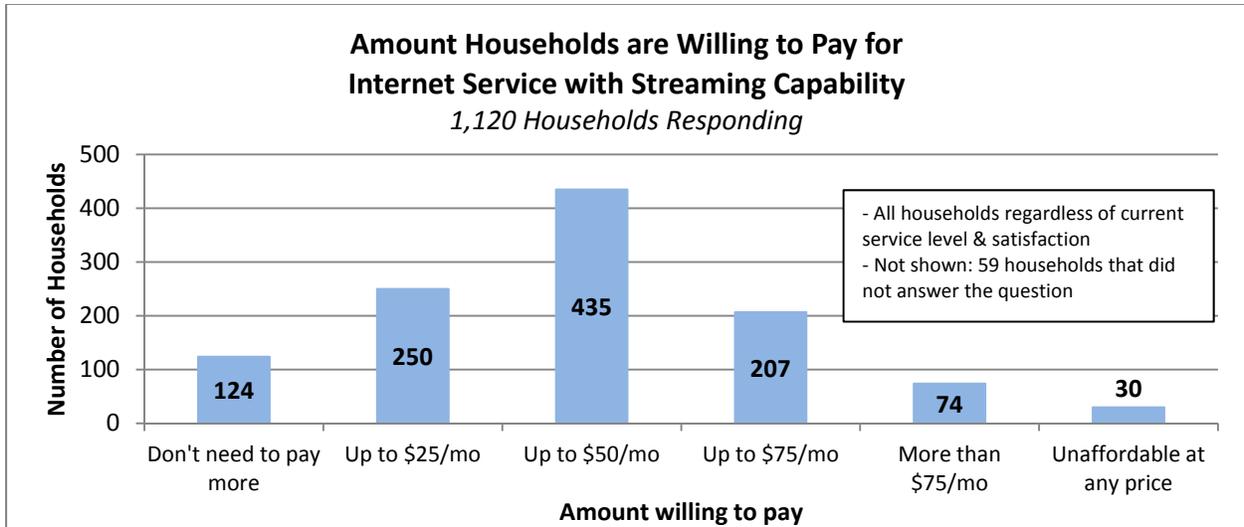


¹ Almost all of the households that said they did not need or want Internet service also said they did not live in Orange County full-time or were just moving into the county so they did not need service yet.

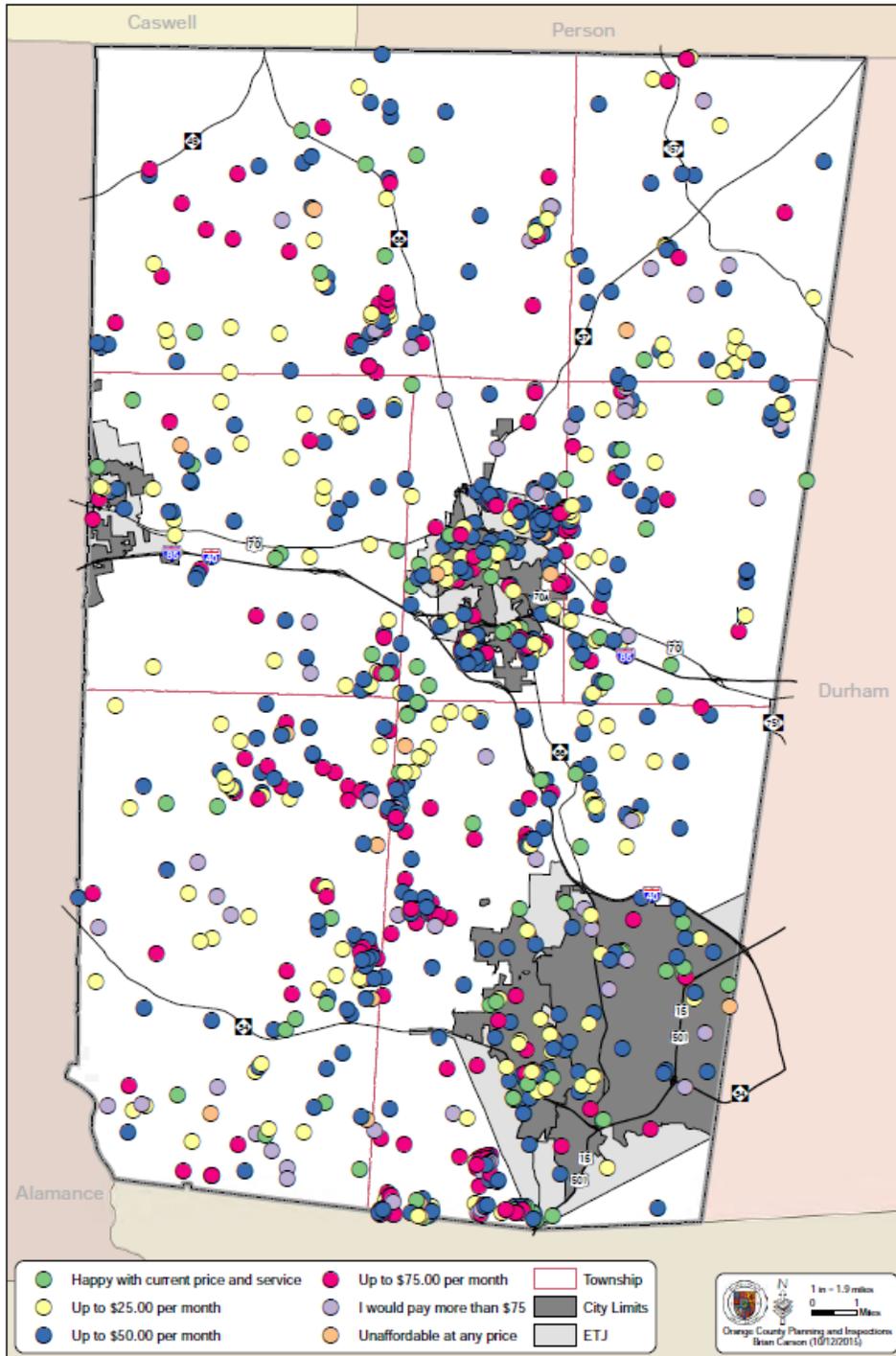
Willingness to Pay for Satisfactory Service

Survey respondents were asked: “If you could have access to an Internet connection that would allow you to stream videos (e.g. Netflix, YouTube, Hulu) without buffering and/or allow you to download music and/or work from home, how much would you pay for such a service?” Responses are summarized in Figure 2 and Map 6.

Figure 2. Amount Households are Willing to Pay for High Speed Internet Service (streaming without buffering)



Map 6. Amount Households are Willing to Pay for High Speed Internet Service (High Speed without Buffering)



Additional Comments

297 households included additional comments, which provide clarification and note specific concerns

297 households included (*Some households noted more than one issue in their comment*):

- Current Internet service is of poor quality including insufficient speed, reliability, or poor technical/customer service (100 households). Many noted the cost was high considering the quality of the service received (especially speed).
- Lack of choice of service providers (84 households). Many of these households suggested that the lack of choice resulted in lower quality, and/or higher cost. Several households noted that their house or neighborhood was just shy of a company's service area – of these, some reported that they could not afford the cost of hookup, others reported they could not get the company to expand its service area even if the household/neighborhood was willing to pay the hookup costs.
- High cost (55 households). Reasons given for the high cost ranged from lack of competition, to being on a fixed income, to the expense of high speed plans or large data plans.
- This is an important issue / affects property values / please help / thank you for doing this (46 households). Lack of high speed Internet affects their household in terms of being able to complete school work (11), or to work at home / run a home business (21).
- Want fiber (6 households) or Google fiber (35 households) for the county; do not want DSL service as it is too slow (4 households).
- Have poor cell phone coverage (8 households)
- Rural areas of the county are overlooked (5 households), northern Orange overlooked (1) Hillsborough unnoticed (1).
- Government should not be in the business of providing Internet service and/or don't want public tax money to be spent to provide Internet service (6 households).

Data Analysis Details

As of September 15, 2015, 1283 responses were received. Of those, 13 (1%) were eliminated as either clearly identified test data (2), presumed test data (4), or respondents who indicated they did not live in Orange County (7). These responses were not used for any part of the analysis, leaving a data set of 1270 responses from individuals.

The individual responses were de-duplicated based on available data to establish one response for each household. De-duplication was based on address provided (and type of housing at that address), and name/email provided. Since name and email were not required and approximate addresses (e.g. Murray St) were accepted, it is possible that the remaining data contains some multiple answers for the same household. When de-duplicating:

- If two different acceptable prices for Internet service were listed by respondents in the same household, the lowest one was used
 - *Example: Household member #1 willing to pay \$25, household member #2 willing to pay \$50 -> used \$25 for data analysis*

- If at least one household member was dissatisfied with their Internet service, the household was noted as dissatisfied with its Internet service.
- All reasons for dissatisfaction listed by any household member were used
 - *Example: Household member #1 dissatisfied due to cost, household member #2 dissatisfied due to speed -> for data analysis, household was counted as dissatisfied with both cost and speed.*

Whenever an approximate address was available, a suitable random address was selected. For example, if address was noted as "Murray Street", an actual address along Murray Street was selected (200 Murray St).