

December 2, 2009

TO: Orange County commissioners

FROM: Carl C. Hoffmann
6506 Mebane Oaks Rd
Mebane, NC 27302

CC: Orange County Voice
Orange County Solid Waste Management Dept
Orange County solid waste Advisory Board
Teresa Edwards

Dear County Commissioners,

I am responding to a letter sent to you and Orange County Voice on November 29, 2009 by Teresa Edwards. In that email Ms. Edwards equates the recent “Talkin’ Trash” survey effort to a petition. Although she agrees with the findings, she also advises that the commissioners not be “...misled to believe that it accurately represents the viewpoint of all citizens.” Her cautions are based on the fact that we allowed survey participants to self-select rather than using probability sampling. Ms. Edwards adequately describes how to draw a random sample, which sounds simple at first glance, but she doesn’t elucidate the requirements of following through with such a process.

I helped OCV prepare the survey instrument and presentation of results, and I would like to address this issue in greater detail. I hold a PhD from the University of North Carolina. The focus of my graduate work was in demography and biostatistics. I have worked for thirty years in the field of social science research and have been a statistical expert in over 130 court cases involving the use of statistics and survey research. Survey work that my wife and I directed has been published in many professional and policy journals, and I have been an invited speaker at meetings of the American Statistical Association. Some of our survey work formed the basis for testimony before the US House and Senate and the US Commission on Civil Rights.

Given that the BOCC was expecting to have a set of recommendations from the SWWG by December 15 on services for the unincorporated areas of the county, OCV was under time pressure to solicit rural input as broadly as possible. Like all volunteer organizations, they had to work within the practical constraints of little time and no budget. Their goal was to give rural residents an opportunity to make known their needs and preferences for possible services and find out what they were willing to pay.

OCV has no intention of being misleading and certainly never represented the survey as having been based on a probability sample. Throughout the process, in the newspaper coverage and presentation of results, they made it clear that the survey was available to rural residents through a wide variety of public channels—retail stores, churches, the Cedar Grove library, fire departments, and rural community groups such as the Ruritan

Club and Schley Grange. That approach can never be mistaken for a random sample, in which there is no public invitation because only the chosen sample is contacted.

While we certainly agree with Ms. Edwards that a random sample survey is the gold standard for most attitudinal research, it is not often one that can be employed by local volunteer organizations. It is simply too costly in time, money, and labor given that it requires the following process:

- First, the target population must be enumerated. When that target population is a particular subset, as in our case, the enumeration itself is a challenge. We defined the respondent universe as Orange County single family households that lie outside town limits and that do not receive any town services. To draw a random sample, we would then have to be able to acquire addresses for that entire population. There is no free and readily accessible source for such a specialized list of households. Though the US Post Service has a Delivery Sequence File (DSF) of addresses that can be purchased, but there is no subset for the county that matches our requirements.
- If the universe of addresses could be acquired at manageable cost, a random sample of a specified size would be drawn (Ms. Edwards suggests 2,000 households) and the contact process would begin by mailing an invitation to those households to participate in the survey. The costs of printing, mailing, and postage begin to accumulate.
- From this point on, the cost and the labor requirements are substantial because of the need for multiple mailings, and follow-up. Even when the initial invitation allows recipients to select on-line participation rather than mail, the need to follow-up with every non-responder requires many hours of labor from a committed staff.
- When the survey date closes, the researcher is still likely to be faced with a substantial number of non-responders, which means that the survey results are subject to non-response bias. Households uninterested and/or unknowledgeable about the survey subject are the ones most likely to be non-responders to a random sample survey, just as they are the ones least likely to participate in a self-selected survey. Truly determining how the non-responder bias might be affecting results is frequently impossible, and despite spending considerable money and effort, the resulting data may be no improvement over a self-selected population.

In the three weeks between October 9 and October 30 OCV received 918 surveys. After paring this down to 881 responses by eliminating surveys with missing or duplicate addresses, they achieved a substantial response across the rural community of Orange County, as is evident from the geocoded map of responses. While 39% of the responses are from Bingham Township, the survey achieved reasonable representation from all the other townships, with the exception of Eno. Naturally, residents in Bingham Township are especially alert at this time to any issues involving county plans for solid waste since they have experienced several challenges in the past 18 months. [Incidentally, Ms. Edwards' numbers reflecting the percentage of the rural population in each township are a bit off for Bingham (16.2%), Cedar Grove (12.9%), and Chapel Hill (25.2%) from the updated 2004 numbers published on the OC website, see attached table.]

Our survey was far different from a petition which only asks respondents to endorse or reject one position. It offered balanced information and an opportunity to express a range of needs and attitudes. Responses were consistent with some SW department decisions and information, such as more limited days and hours for convenience centers, and the utilization rate for curbside recycling. We worked to validate that respondents were not simply rejecting all propositions but were expressing logical responses associated with characteristics of their physical environments.

This self-selected sample undoubtedly includes people who are more interested, more knowledgeable, and more likely to depend on convenience centers for their trash and recycling. I suggest that in this situation their responses are informative despite their self-selection. The people who go to the polls on Election Day are not a random sample either, but are the people who care most about the issues at hand, yet we hold the results of those elections as valid. Elected officials generally prefer having input from constituents before making decisions, and this is the first systematic rural input that has been made available.

In closing, we feel that this survey provides important and reliable information that represent the attitudes of many more than the 881 households across the county that responded.

Sincerely,
Carl C. Hoffmann