

Climate Change Demonstration Site: Hennepin County (MN) Human Services and Public Health Department



NAME OF DEMONSTRATION SITE:

Hennepin County (MN) Human Services and Public Health Department

NAME OF DEMONSTRATION SITE PROJECT:

The Climate Change Survey of Lodging Facilities, Retail Food Stores, and Restaurants

Project Summary

The Environmental Health Program (EHP) of the Hennepin County Human Services and Public Health Department (HSPHD) works with licensed food and lodging establishments in plan review and process control, so it is natural that EHP should be instrumental in helping these establishments identify sources of and means to reduce carbon dioxide (CO₂) emissions, thereby further protecting the public's health. To do so, EHP planned to establish baseline information on energy use by these establishments through direct survey.

Source Material

The EHP of the HSPHD licenses hotels and lodging facilities, retail food (grocery) stores, and restaurants on an annual basis. The EHP was interested in whether its licensed facilities were attempting to limit fuel consumption and consequent CO₂ emissions and, if so, how. The EHP also wanted to gain a sense of the level of knowledge among facility owners of methods available to them to conserve energy and the fiscal advantages of doing so. Creating and executing a survey for each of these three facility types was the starting point.

Material used in developing the survey instruments was obtained from multiple sources to cover a wide range of issues. The website of the Environmental Protection Agency (EPA) was an exceptional resource for the survey, containing a great deal of information about the agency's EnergyStar® and WaterSense® programs.¹ These programs test and rate the efficient use of electricity and water, respectively, by appliances and fixtures. The EnergyStar® website also provided information on the availability of federal tax

credits for energy-efficient construction methods and appliance use.² Another major source of information was the Madison (WI) Gas and Electric Company's study of energy use by lodging facilities, retail food stores, and restaurants.³

Other sources of material used in developing the survey instruments included the websites of the Centers for Disease Control and Prevention,⁴ the Department of Agriculture,⁵ the United Nations World Health Organization,⁶ and Food and Agriculture Organization,⁷ the Minnesota Department of Commerce,⁸ local utility rebate programs (e.g., Xcel Energy),⁹ the National Restaurant Association;¹⁰ the American Hotel and Lodging Association,¹¹ and private corporations (e.g., Motel 6's retrofitting program of 7,000 rooms in California;¹² the "Green Engage" program of the InterContinental Hotels Group,¹³ and Wal-Mart's Sustainability 360 campaign to reduce packaging and improve fleet efficiency.¹⁴ The EHP also received valuable feedback from the directors of the Minnesota Grocers' Association, Hospitality Minnesota (restaurants and lodging facilities), HSPHD's Assessment Team and senior environmentalists, and experts in the fields of energy conservation and alternative energy production.

HSPHD's Assessment Team and environmentalists reviewed the initial survey drafts, and penultimate drafts were pilot-tested by 13 individuals actively working in the business areas of interest. Their recommendations were incorporated into the final versions. Facilities whose operators participated in the pilot test were excluded from survey participation.

Survey Design and Distribution

In order to maximize survey responses, numerous sources recommended preliminary informational postcards, multiple survey mail-outs, clarity and simplicity of message, and personalized cover letters.^{15, 16, 17, 18} The EHP therefore kept surveys as brief and readable as possible and limited them to no more than 30 questions and three pages (six sides) in length. To aid readability, explicit directions and considerable "white space" were incorporated into the documents. The average time to complete the survey was eight minutes among the nine persons who pilot-tested surveys and reported time to completion.

In addition to specific questions for each of the lodging, retail food, and restaurant surveys, all three versions of the survey included questions on a range of topics including the following:

- Facility energy use and conservation;
- Use and maintenance of low-energy illumination and appliances;
- Owner familiarity with utility-sponsored rebates and energy-efficient electric light distribution programs;
- Owner familiarity with local and federal energy-based tax rebates and tax-favored policies;
- Recycling programs in place;
- Facility policy on employee commuting, telecommuting, and remote access;
- Age of the facility; and
- Average number of customers per month seen at the facility.

The three versions of the survey are available in NACCHO's Climate Change Toolkit at <http://bit.ly/LbvG0j>.

Based on conversations with HSPHD's senior environmentalists and the results of surveys done in 2005 and 2008 by HSPHD's Emergency Preparedness Program, Internet access was thought unlikely to be available at most facilities, particularly the single-owner, smaller restaurants that made up the bulk of licensees,¹⁹ so the EHP conducted a mail survey. The EHP maintains a licensed facility database containing account numbers, names, addresses, owner names, owner addresses, classification (facility type), and ownership type (single or multiple within HSPHD's jurisdiction). To prevent owners of multiple facilities from receiving more than one survey, one facility per owner was randomly sampled within owner strata.

To inform facilities of this project before it began, the EHP mailed an informational postcard to them and sent mailings in subsequent months. Each mailing included a copy of the survey, a cover letter, and a postage-paid return envelope. Each returned survey was date stamped upon its arrival in the EHP office. Survey data were entered in an Access database with pre-set allowable data values and ranges. Responses were evaluated for logical errors and inconsistencies.

Analysis

Using SPSS v. 17.0, analyses were performed separately for hotels/lodging facilities, retail food stores, and restaurants. For questions in common, analyses were performed for all facilities combined. Differences in proportions were tested by the Pearson Chi-square test and odds ratios and 95 percent confidence intervals were calculated for statistically significant ($p < .05$) findings. Differences in median values were tested by the non-parametric Mann-Whitney U test. Unconditional multiple

logistic regression (MLR) was used to model which variables significantly predicted categorical (yes/no/don't know) responses to survey questions. The main interest was in predicting "yes" responses; to limit uncertainty and facilitate analysis, the analysis dichotomized responses to yes/no, excluding "don't know" and missing responses. The reported number of customers per month and facility age had log-normal distributions ranging across approximately six and three orders of magnitude, respectively. Therefore, natural logarithms of these variables were used in MLR modeling.

Lessons Learned

- When the Hennepin County Board received the grant proposal, one board member questioned how climate change was related to public health. Staff had several reasons at the ready, which was very helpful.
- The ongoing relationship of HSPHD with food and lodging facilities provided good background information on how these facilities operate and led to the excellent survey return rate.
- Local health departments (LHDs) should keep surveys simple.
- LHDs should try to find partners in environmental services or property services departments of the local government.

Stories from the Field

- As a result of this project, HSPHD has become a "sitting member" of the county's "Cool Counties" workgroup and steering committee, interacting with other offices of county government to coordinate climate change activities.
- The Minnesota Department of Health has given considerable attention to HSPHD's work, including publication in a Minnesota Department of Health newsletter of initial findings of the HSPHD survey and a request for an additional article about the study to appear in summer or fall 2012.
- After reading the HSPHD grant proposal on the National Association of County and City Health Officials' (NACCHO's) website, an academic food scientist in Brisbane, Australia, solicited HSPHD for more information and copies of its surveys.

Project Outcomes

The following is a sampling of survey response data:

TABLE 1. NUMBER OF ELIGIBLE FACILITIES, NUMBER OF FACILITIES SUBMITTING SURVEYS AND PARTICIPATION RATE, BY TYPE OF FACILITY

| Type of Facility | Number Eligible | Number Submitting Surveys | Participation Rate (%) |
|--------------------|-----------------|---------------------------|------------------------|
| Hotels/lodging | 35 | 25 | 71.4 |
| Retail food stores | 37 | 23 | 62.2 |
| Restaurants | 434 | 276 | 63.6 |
| All | 506 | 324 | 64.0 |

TABLE 2. HAS YOUR FACILITY EVER DONE AN ENERGY AUDIT?

| Response | Hotel/Lodging | | Retail Food Store | | Restaurant | | All | |
|--------------|---------------|------------|-------------------|------------|------------|------------|------------|------------|
| | N | % | N | % | N | % | N | % |
| Yes | 5 | 20 | 3 | 13 | 36 | 13 | 44 | 14 |
| No | 9 | 36 | 14 | 61 | 160 | 58 | 183 | 56 |
| Don't know | 11 | 44 | 6 | 26 | 79 | 29 | 96 | 30 |
| No response | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| Total | 25 | 100 | 23 | 100 | 276 | 100 | 324 | 100 |

TABLE 3. DOES YOUR FACILITY TRACK ITS ENERGY USE ON A MONTHLY OR SOME OTHER BASIS? FOR EXAMPLE, DOES IT TRACK THE MONTHLY NUMBER OF KILOWATT HOURS (KWH) USED OR THEIR COST?

| Response | Hotel/Lodging | | Retail Food Store | | Restaurant | | All | |
|--------------|---------------|------------|-------------------|------------|------------|------------|------------|------------|
| | N | % | N | % | N | % | N | % |
| Yes | 12 | 48 | 12 | 52 | 106 | 38 | 130 | 40 |
| No | 9 | 36 | 8 | 35 | 134 | 49 | 151 | 47 |
| Don't know | 4 | 16 | 2 | 9 | 35 | 13 | 41 | 13 |
| No response | 0 | 0 | 1 | 4 | 1 | 0 | 2 | 1 |
| Total | 25 | 100 | 23 | 100 | 276 | 100 | 324 | 101 |

[FACT SHEET]

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Project Sustainability and Capacity Building

The Cool Counties initiative was begun before HSPHD's involvement and is likely to continue to grow, given the support it receives throughout the nation. HSPHD will remain an active member on the workgroup and steering committee. Given the difficult funding environment at present, this specific project is unlikely to be taken to the next level without external resources. HSPHD has provided letters of support for a Minnesota Department of Health climate change project and anticipates further collaboration with Minnesota Department of Health.

References

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