Reaching Residents of Green Communities: Evaluation of a Unique Environmental Education Program

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Often in green communities, homeowner understanding is left out of the project. We evaluated the impact of a new environmental education program installed in a green community, Town of Harmony, Florida. Consisting of educational kiosks, website, and brochure, we evaluated whether Harmony residents’ environmental knowledge, attitudes, and behaviors improved when compared to residents of a conventional community. After two years of exposure to the program, Harmony homeowners did show some improvement in environmental knowledge, attitudes, and behaviors and the control community did not. Such on-site educational programs can help homeowners understand ways to manage their homes, yards, and neighborhoods in a more sustainable manner.

Interest in “green communities” has been growing within the United States and elsewhere as a way to minimize impacts on natural resources (Noiseux & Hostetler, in press; Stromberg, 2005; Chen, 2000). In theory, such development can provide social and environmental benefits (Srinivasan et al., 2003; Leyden, 2003), and the American public is increasingly calling for green development as hundreds of ballot and policy initiatives are appearing (Romero & Hostetler, 2007; Chen, 2000).

The level of “sustainability” of a residential community is a function of both the design of the community (e.g., open space conservation, construction of energy-efficient homes) and how the homes, yards, and neighborhoods are managed over the long term (Noiseux & Hostetler, in press; Hostetler, 2006; Youngentob & Hostetler, 2005). Frequently, most policies and cited examples of green communities address the design phase and neglect the post-construction phase of a development (Noiseux...
& Hostetler, in press; Hostetler, 2006; Youngentob & Hostetler, 2005). The post-construction phase is basically how well the site is managed, which is a product of the hundreds of decisions made by homeowners. Recent studies have suggested that homeowners in green communities, in terms of their environmental levels of knowledge, attitude, and behavior, are no different than homeowners from conventional communities and that design alone may not foster behavioral sustainability (Youngentob & Hostetler, 2005; Till, 2001; Zimmerman, 2001). This calls into question whether even the best design actually can conserve natural resources as any number of decisions made by homeowners can derail the intent of a community. Green design elements within a community may have more technical sustainability than other conventional developments, but it can only function properly if residents are utilizing these elements correctly and exhibiting behavioral sustainability (Williams & Dair, 2007a; Youngentob & Hostetler, 2005; Thompson, 2004; Talen & Ellis, 2002).

One strategy to reach homeowners is to implement an environmental education program that addresses community-wide natural resource issues (Noiseux & Hostetler, in press; Hostetler, 2006; Youngentob & Hostetler, 2005). Hungerford and Volk’s (1990) Environmental Behavior Model provides a useful framework to help promote environmentally responsible behavior. Along with other model variables, environmentally responsible behavior is fostered when people have the skills and knowledge to perform environmental action strategies. Education programs focusing on “sustainability” have the potential to create major change (Bonnnet, 2002; Knapp, 2002; Herremans & Reid, 2002; Elliot, 1999; Tilbury, 1995). However, to date, very little (if any) effort has been made by developers of green communities to address the concept of long-term management by homeowners.

The purpose of our study was to determine if an environmental education program, consisting of kiosks, a website, and a brochure, would impact residents of a green community in terms of their environmental behaviors, knowledge, and attitudes. We predicted that residents of the green community would show more improvement than that of a conventional community that lacked such a localized, environmental education program.

**METHODS**

**Study Sites**

**Town of Harmony (Green Community)**

The Town of Harmony is a master-planned, residential community being built in Osceola County, Florida. Construction began in 2002 with a predicted build-out over the next 30 years. Harmony is 11,000 acres, containing two large 465- and 505-acre lakes. The planned community has many design features of green communities. Almost 60% of open spaces are left as natural areas. All of Harmony’s homes are Energy Star® compliant. Neighborhoods are of Traditional Neighborhood Design (TND) and interconnected for convenient foot, bike, or electric cart travel. This master-planned community currently has four villages, which to date hold about 330 homes. Harmony has won several environmental awards including the 2003 Residential Environmental Award from the Florida Association of Realtors and the 2006 Best Practices Green Building Award from the Council for Sustainable Florida.

Harmony promotes and markets itself as an “eco-friendly community.” Trees, shrubs, and perennials native to Florida are used in Harmony’s 280-acre “golf preserve,” and roughs are meant to be as natural as possible. Harmony is also a Dark-Sky compliant community with specialized lights with shields that block light from going upward. In addition to the environmental education program (explained later), residents also have access to a monthly newsletter called “Harmony Notes.” The Harmony Institute, an
independent foundation created to promote healthy interactions between people, animals, and the environment, is also located within the community; they developed environmental Codes, Covenants, and Restrictions for the community. A conservation manager and the Institute’s director, Greg Golgowski, is present at the Town of Harmony to help guide construction and to help residents to comply with the environmental intent of the community. Through a Conservation Club, Greg also helps organize outdoor programs, such as bird walks.

**Hunters Creek (Conventional Community)**

Hunters Creek, a master-planned community in Orange County, covers about 4,500 acres and currently has about 8,500 homes. Hunters Creek does not put special emphasis on ecologically responsible development. It does have similar amenities to Harmony, including a golf course, hiking and biking trails, a community pool, lakes, and playgrounds. Approximately 27 miles separate Hunters Creek and Harmony.

**Environmental Education Program**

We developed an environmental education program that was designed for master-planned residential communities. The goal of the program was to engage residents in understanding and implementing natural resource conservation strategies. The content of the education program addressed the local ecology of the area, provided information about how to conserve natural resources within their homes, yards, and neighborhoods (e.g., upkeep and improvement on energy saving features within a home, landscaping practices to increase biodiversity, and proper management of nearby natural areas), and provided local resources to aid in implementing an environmental action (e.g., where to buy native plants). The program contains three elements and we implemented the full program in the Town of Harmony by January of 2005:

- **Kiosks**: Seven highly visible educational kiosks (Fig. 1) were placed along a sidewalk that borders the length of Harmony’s golf course and is a common sidewalk that is used by residents for walking, linking the Town’s center, parks, and Buck Lake. Each 24” × 36” kiosk has graphic panels that cover a particular theme: water, energy, wildlife, landscaping, insects/pollinators, lakes, and natural/human history. Each kiosk has four panels associated with it and each panel covers a particular topic. For example, under wildlife, one panel is devoted to Sandhill Cranes, another to Gopher Tortoises, a third to wildlife/human conflict, and the fourth discusses common backyard wildlife species. The conservation manager switches the panels out quarterly each year.

- **Website**: A website called Living in Harmony (www.wec.ufl.edu/extension/gc/harmony) contains similar, but more detailed, information than what can be seen on the kiosks. It was organized into six general themes; wildlife, landscaping, water, energy, waste, and human/natural history. The website is closely associated with the kiosks and each of the kiosks invites residents to explore the website by giving the Web address on each panel.

- **Brochure**: The brochure primarily functioned as a vehicle to invite people to explore the kiosks and website. The brochure has three panels (front and back) and introduced residents to the six themes of the website. Each new (and potential) homeowner was given a brochure at the sales center.

All of the information on the kiosks, panels, and website are meant to be site specific. For example, general information about recycling was given on a kiosk panel and on the website, but we included contact information for the local recycler coordinator and drop-off sites within Osceola County. The themes, graphic design, and educational content were based on several site visits, focus groups with environmental professionals and homeowners, and discussions with the director of Harmony Institute.
Participant Selection

We identified potential respondents through sales lists from the Town of Harmony and from Hunter’s Creek online public Property Appraiser’s records. Criteria for control community selection were based on finding a nearby community that had similar price points, homes with a value between $150,000 and $500,000.

The pretest sample size was constrained by the number of initial homeowners living in the Town of Harmony in 2004. We identified 34 homeowners that had bought houses and were living in Harmony. Based on returns from the Harmony survey and expected response rates from the control community, we sent out 116 surveys to approximate a similar respondent sample size to Harmony. Of these, 32 Harmony surveys and 35 Hunters Creek surveys were returned.

The posttest survey sample size for the control community was also determined by the number of possible Harmony homeowners. We not only sent surveys to the original Harmony homeowners that received the initial survey, but we also included other Harmony homeowners that had moved into Harmony and had been exposed to the educational program for at least two years. We did this because of the high volatility in the housing market between 2002–06, and we expected several of our original Harmony homeowners would have moved. In total, we identified 44 Harmony residents, of which about 26 people had been originally sent the pretest survey. A total of 19 Harmony residents returned the posttest survey (43.2%), of which 14 had filled out both surveys. For Hunter’s Creek, we identified 226 homeowners, of which about 105 people had been originally sent the pretest survey. A total of 62 Hunter Creek residents returned the posttest
survey (27.4%), of which 34 had filled out both surveys.

Survey Instrument

The pretest mail survey was conducted in March of 2004 and the posttest in the spring 2007. We modified the Dillman (2000) method as done by Youngentob and Hostetler (2005), formatting the survey into a 9.25 by 6.25 inch (23.5 by 15.88 cm) booklet and mailing it in a hand addressed envelope. The envelope included a cover letter and self-addressed stamped envelope for survey return; no incentives were offered and the cover letter had a brief statement of social purpose. Respondents were given about three weeks from the mailing date to return their surveys, after which we conducted two follow-up phone call reminders for all potential respondents with listed numbers. Those without listed numbers and those reached only through a message were sent a second copy of the survey packet as well.

Question Design

We selected questions based on content prominently displayed on the kiosks or website and whether the issue was identified as important through site visits and a local focus group with environmental professionals. Thirty-six questions addressed environmental knowledge and 19 questions addressed environmental behavior; we asked respondents to self-rate themselves either by using a 5-point, Likert-like (Likert, 1932) scale or a Yes/No Unsure response. Twelve attitude questions addressed environmental interests/desires and attitudes toward environmental actions (e.g., It is OK to feed sandhill cranes. . . . ); again, we asked respondents to self-rate themselves using a 5-point, Likert-like scale. We also had four questions that asked participants about their sense of community.

We asked a series of seven questions about whether they thought they had sufficient information to implement a certain conservation practice (e.g., I have sufficient information to conserve energy in my home, conserve water in my yard). We regarded these questions as the overall measure of whether the educational program at least installed some confidence in Harmony residents about how to undertake a particular environmental action.

Because we wanted to evaluate the use of the different parts of the environmental education program in relation to other potential sources of local environmental information that Harmony residents could use, we added a few questions to the posttest Harmony survey. To determine the level of use/interaction of the kiosks, website, brochure, the director of the Harmony Institute (Greg Golgowski), and CCR document, we asked people how often they used these each month. Next, we asked people to indicate at what level (on a 6-point Likert-like scale) did they utilize 11 potential sources of local environmental information. Finally, 11 demographic questions asked participants to choose the best response, fill-in-the-blank, or 5-point Likert-like scale.

ANALYSES

To identify possible differences among categorical responses in pre- and posttest surveys for each community, and because all distributions were non-normal (Kolmogorov-Smirnov test), a Chi-square test was used, except when expected cell frequency (less than 5) made a Fisher’s Exact test more appropriate. Environmental knowledge, behavior, and attitude questions were analyzed individually. Only the six questions regarding sufficient knowledge to do “X” were analyzed as a Sufficient Knowledge Scale. For this scale, a Cronbach’s alpha was calculated; an acceptable level of reliability was Cronbach’s alpha of .7 or higher. For Harmony posttest respondents, we only analyzed Harmony residents that had viewed or used as a source any components of the environmental education program.
Possible demographic differences between pre- and posttest respondents could affect the outcome; we tested this with a combination of ANOVA and Chi-square tests (depending on normality). If demographic differences existed, we used Pearson’s correlation matrix to determine if these demographic variables significantly correlated to specific questions. If a demographic difference did significantly correlate to a specific question, we used an ANCOVA. This test is robust to violations of the normality assumption, as long as the homogeneity of slopes assumption is not violated when group size is unequal (Levy, 1980). We first used Levene’s test to check for homogeneity of slopes on the non-normal data. If slopes were homogeneous, the ANCOVA was used to control for the demographic variable(s). For all of the aforementioned tests, an alpha value of 0.10 was used. Because of our initial one-sided hypothesis for improved environmental behaviors, knowledge, and attitudes, we halved all resultant $p$ values.

**RESULTS**

**Harmony**

Nineteen posttest surveys were returned but one respondent never viewed any of the components of the environmental education program and was not included in subsequent analyses. No demographic differences appeared between the pre- and posttest respondents (all tests: $p > 0.1$). For sense of community questions, no significant improvements were recorded (all tests: $p > 0.1$). For knowledge questions, responses for 9 of 36 questions showed significant improvement after implementing the environmental education program (Table 1). For attitude questions, 1 of 12 questions showed significant improvement after implementing the environmental education program whereas responses for one question showed a significant decrease in attitude toward reducing lawn for wildlife (Table 1). For behavior questions, 3 of 19 questions showed significant improvement after implementing the environmental education program (Table 1). The Sufficient Information Scale had a Cronbach’s alpha of 0.90, and more posttest, Harmony respondents indicated that they had sufficient information to conduct a particular environmental behavior (Table 1).

Evaluating the components of the environmental education program, most Harmony respondents had viewed the kiosks (Table 2). In fact, all of the respondents indicated viewing the kiosks at least once a month or more whereas about 44% or more never viewed the website, the brochure, Harmony’s CCRs, or interacted with Harmony Institute’s director (Table 2). When asked about the source of local environmental information, Harmony’s newsletter ranked first, neighbors second, and the educational kiosks third (Table 2).

**Hunter’s Creek**

Only one demographic feature differed between pre- and posttest respondents: ethnic race ($p < 0.1$). Ethnicity significantly correlated with two individual questions and ANCOVA analyses were used for these questions. Of all analyzed individual survey questions, only one question (Are there resident [year-long] Sandhill Cranes in Florida?) did posttest respondents show significant improvement ($F = 2.2, p = 0.038$). One question (How many invasive exotic species can you identify?) resulted in posttest respondents indicating fewer species that could be identified (FED, $p < 0.01$), indicating a decrease in environmental knowledge.

**DISCUSSION**

Relative to the control community, Harmony residents did show some improvement in their knowledge, very little in their attitudes, and some in their self-reported behaviors.
**Table 1**

Significant differences in pre- and posttest survey questions of respondents from the Town of Harmony after installation of an environmental education program

<table>
<thead>
<tr>
<th>Question</th>
<th>Town of Harmony</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Pre</th>
<th>Post</th>
<th>Pre</th>
<th>Post</th>
<th>Statistic</th>
<th>p-value</th>
</tr>
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</table>
| Most of the water use in a home happens in the _a_                      |                | 31 | 17     | 1.58    | 1.35 | 0.50   | 0.49 | 0.50   | X² = 2.28; p = 0.050
| How frequently do you turn off the faucet while brushing your teeth _b_  |                | 32 | 18     | 3.88    | 4.0  | 1.04   | 1.08 | 0.50   | FET; p = 0.035
| Even when they are more expensive, how often do you buy environmentally friendly products _b_ |                | 32 | 18     | 3.16    | 3.67 | 1.02   | 1.03 | 0.50   | FET; p = 0.055
| The primary purpose of storm water retention ponds is to help water evaporate _a_ |                | 31 | 18     | 1.61    | 1.22 | 0.50   | 0.43 | 0.50   | X² = 6.99; p < 0.01
| It is OK to feed Sandhill Cranes _b_                                    |                | 32 | 18     | 4.31    | 3.88 | 1.09   | 1.75 | 0.50   | FET; p = 0.032
| Reducing the amount of lawn in my yard is important to wildlife _b_      |                | 31 | 18     | 3.31    | 2.44 | 0.91   | 1.09 | 0.50   | FET; p < 0.01
| Sufficient Information Scale (Cronbach’s = 0.90)                        |                | 31 | 18     | 21.55   | 25.0 | 6.42   | 8.17 | 0.50   | X² = 2.61; p = 0.051
| Do you know how to compost effectively? _a_                            |                | 31 | 18     | 1.81    | 1.61 | 0.40   | 0.50 | 0.50   | X² = 2.23; p = 0.067
| To save energy, do you check your air ducts for leaks? _a_              |                | 32 | 18     | 1.60    | 1.39 | 0.50   | 0.50 | 0.50   | X² = 1.94; p = 0.082
| Is “Species of Special Concern” the legal status of the Gopher Tortoise? _a_ |                | 32 | 18     | 1.84    | 1.61 | 0.37   | 0.50 | 0.50   | FET; p = 0.045
| Do you know where to recycle plastic containers? _a_                    |                | 32 | 18     | 1.66    | 1.44 | 0.48   | 0.51 | 0.50   | X² = 2.12; p = 0.073
| Do you know where your water comes from? _a_                          |                | 32 | 18     | 1.47    | 1.22 | 0.51   | 0.43 | 0.50   | X² = 2.97; p = 0.042
| Do you know how to check for leaks in a toilet? _a_                    |                | 32 | 18     | 1.41    | 1.17 | 0.50   | 0.38 | 0.50   | X² = 3.04; p = 0.040
| Do you know where to get your soil tested in your county? _a_           |                | 32 | 18     | 1.78    | 1.61 | 0.42   | 0.50 | 0.50   | X² = 1.65; p = 0.099

Additionally, the Sufficient Information scale did indicate that more Harmony residents thought they had sufficient knowledge to implement several environmental practices after the environmental education program was installed. Thus, the environmental education program did have impact on Harmony residents, but not an overwhelming success. Several factors may be involved, and we discuss these next.

First, we acknowledge that the newsletter, *Harmony Notes*, Harmony sales center, and educational events organized by the Harmony Institute could have influenced the way posttest participants responded to the survey, but we suspect very limited. Only a few respondents indicated that they participated in environmental activities at Harmony and most of these related to a Dark Sky event where people gathered to view the stars. Also, about half of the respondents have never interacted with the conservation manager. Harmony’s conservation manager did organize bird walks and pond cleanups, but these activities did not directly relate to the questions asked in the survey. We monitored topics included in the newsletter, and we found no
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Table 2

Percentages and means (M) of Town of Harmony respondents that were asked how often they viewed or read certain components of an environmental education programs (displays, website, and brochure) compared to interacting with Harmony Institute’s director and reading the Covenants, Codes, and Restrictions (CCRs). Percentages and means are also given for how often respondents used certain sources to learn about local environmental issues.

<table>
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<tr>
<th>Survey question</th>
<th>n</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>M</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>M</th>
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<td>How often (on average) have you stopped to read these educational displays in Harmony's parks?^a</td>
<td>18</td>
<td>0</td>
<td>55</td>
<td>39</td>
<td>6</td>
<td>2.4</td>
<td>39</td>
<td>11</td>
<td>33</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>2.2</td>
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<td>How often have you visited the Living in Harmony Web site…^a</td>
<td>17</td>
<td>44</td>
<td>50</td>
<td>6</td>
<td>0</td>
<td>1.6</td>
<td>47</td>
<td>35</td>
<td>12</td>
<td>6</td>
<td>0</td>
<td>1.7</td>
<td></td>
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<td>To learn about env. issues, how often have you interacted with Harmony’s Institute director Greg Golgowski?^a</td>
<td>18</td>
<td>47</td>
<td>35</td>
<td>12</td>
<td>6</td>
<td>1.7</td>
<td>83</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.2</td>
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<tr>
<td>Have you read Harmony’s Community Covenants and Restrictions (CCRs)?^b</td>
<td>18</td>
<td>83</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>1.2</td>
<td>27</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>1.2</td>
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<td>Do you recall reading the Living in Harmony brochure?^b</td>
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<td>73</td>
<td>27</td>
<td>0</td>
<td>0</td>
<td>1.2</td>
<td>39</td>
<td>11</td>
<td>33</td>
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<td>28</td>
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<td>33</td>
<td>4.9</td>
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^aFor these questions: 1 is never; 2 is once a month; 3 is 1–4 times per month; 4 is > 5 times per month; ^bHave you ever read questions: 1 is yes and 2 is no or unsure; ^cFor source of environmental information: 1 = never; 2 = once; 3 = infrequently; 4 = sometimes; 5 = regularly; 6 = frequently.

Although knowledge, attitude, and behavior questions were chosen by how prominently they were displayed on the kiosks and the website, Harmony residents did not score higher on a majority of questions after being exposed to the educational program. No program is expected to cause change in all variables and the limited success could be due to a number of factors. This education program was passive and did not actively engage the community or coincide with local projects or campaigns; such activities could reinforce the messages displayed on the kiosks and website. For example, involving residents in prescribed burns would raise awareness about the importance of fire in healthy upland ecosystems (which was a question on the survey). The questions that did show improvement may be linked to such things as the high profile and presence of charismatic species (e.g., sandhill cranes and gopher tortoises), the familiarity and ease of household actions (e.g., turning off the water when brushing teeth), and prominent environmental features (e.g., stormwater retention ponds that were readily viewed within the neighborhoods). Support for and understanding of other unfamiliar or more difficult environmental actions (e.g., prescribed burns or landscaping for wildlife) may require additional efforts.
Barriers may be present in Harmony that limit the expression of a sustainable behavior (e.g., lack of curbside pickup in Harmony for recyclables). Lack of convenience is a significant barrier to sustainable behavior (Pelletier et al., 1999; Green-Demers et al., 1997). Also, some of Harmony’s policies could limit some pro-environmental behaviors. For example, people could not easily change their yards without a lengthy review by an architecture committee. Sustainable behaviors can be managed through structural change in policies (Williams & Dair, 2007b; Holden, 2004) and have a positive impact on natural resources. For example, policies that govern how individuals manage their own yards and neighborhoods can have a direct impact on urban bird diversity (Hostetler & Knowles-Yanez, 2003; Hostetler & Holling, 2000).

Increasing environmental literacy does not always result in pro-environmental attitudes and behaviors, many theoretical models have shown that there is not a linear connection between knowledge, attitudes, and behaviors (e.g., Kaplan 2000; Hungerford & Volk 1990). Improved literacy is just one variable, but in conjunction with other variables (e.g., empowerment variable, Hungerford & Volk 1990), the combination can lead to changes in attitudes, values, and in motivation levels that lead to new behaviors (Jensen, 2002). Plus, because it is a community that is currently growing, the “social norm” of the community may still be evolving and sustainable practices may still seem novel and not an accepted goal of most residents.

Finally, the lack of demonstrating improved environmental behaviors could be a function of the survey design itself. Most of the behavior questions were yes/no questions and did not really address whether respondents were contemplating or preparing to implement action in the foreseeable future. The behavior questions could have been modified to reflect stages of behavioral change (e.g., Trantheoretical Model; Prochaska & DiClemente, 1983). In the one instance where posttest Harmony respondents indicated a less willingness to reduce lawn for wildlife, this could be statistical chance through regression toward the mean (Shaughnessy & Zechmeister, 1990).

LESSONS LEARNED

The kiosks were used the most each month and were the top source of environmental information when compared to the website and brochure. Kiosks are probably the most important feature to add within a community as they would be easily encountered when residents take walks. Because one can switch out kiosk panels, information remained relatively fresh and the opportunity exists to produce new panels as the community grows. We think the versatility of the kiosks is critical to the long-term success of the program. Such forward-thinking actions could garnish support from environmental groups (Mendleson & Polonsky, 1995) and homebuyers (Arora & Cason, 1996). Also, including a website is important as this medium is much more flexible and easily adapted to present environmental information. Given that only 56% of Harmony respondents knew about the website, a more pointed marketing campaign at the sales center and perhaps several prominent signs advertising the Web address are needed to raise its profile. Further, because the brochure and Community Covenant & Restrictions were not read by many people, we would recommend a required orientation for all new homeowners that would highlight particular natural resource issues of interest in the community; these orientations could be undertaken by trained sales staff.

In terms of the survey, it was rather lengthy (especially the posttest Harmony survey) and may have negatively affected response rates. We suggest a much shorter survey that focuses on whether people thought they had sufficient environmental information to conduct an action (Sufficient Information scale). The survey should also contain limited open-ended questions that ask what they learned
from the program and any behaviors that they have or intend to act on in the foreseeable future.

Overall, the significant improvement in the Sufficient Information scale is notable as it is a rough indicator of ownership and empowerment (i.e., in-depth knowledge about issues and knowledge of and skill to implement environmental actions); these are major variables in the Environment Behavior Model (Hungerford & Volk, 1990). But how far should a developer be required or encouraged to go? Currently, most master-planned communities do not address any aspect of community education. This environmental education program could, in the general sense, raise awareness and confidence for homeowners to implement environmental actions; however, particular desired environmental behaviors may require additional effort beyond the presentation of information on kiosks and a website. Community-based social marketing (McKenzie-Mohr & Smith, 1999) has a set of relevant steps that are applicable to a developer and could promote the adoption of desired behaviors within a community. Important considerations are identifying barriers to environmental actions (and removing them), providing rewards or incentives (e.g., best “natural” yard of the month), and monitoring the success of community efforts (e.g., kilowatts saved each month). How to do this will vary from site to site but some suggestions include linking with local environmental groups and agencies, initially forming stewardship groups to monitor and provide feedback to the community, and providing a homeowner association structure with a focus on particular environmental issues could go a long way to increasing participation throughout a community. For example, a community in Illinois, Prairie Crossings, successfully raised awareness on the importance of maintaining native prairie grassland through a combination of printed materials, a website, workshops associated with the homeowner association, and most importantly, requiring that every yard contain at least 20% of prairie plantings (Thompson, 2004). Additional research is needed to evaluate the effectiveness of using kiosks and a website in conjunction with other activities.

When building green communities, we recommend that more policies and community-wide efforts include strategies to help citizens understand how to manage their homes, yards, and neighborhoods. The visible kiosks in the Town of Harmony seemed to reach the most residents and developers could use this (along with a companion website) as a first step to raise awareness and to foster environmental behaviors in a neighborhood. This environmental education program is one strategy where design/build professionals and environmental educators can form partnerships to help create “greener” communities.

REFERENCES


