Kill-A-Watt: An assessment of conservation behavior change strategies in university residence halls

ENVIRON/RCIDIV 391: Sustainability and the campus
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1. EXECUTIVE SUMMARY

Kill-A-Watt is a campus-wide competition to reduce energy consumption in residence halls that was held over the course of one month, from October 19 to November 18, in the fall of 2011. This competition is modeled after a successful program of the same name at the University of Central Florida (UCF). “The goal of the competition is to directly engage students on energy, environmental, and sustainability issues and encourage direct action that could translate into life-long behavioral changes.”

Through surveys, interviews and observations, the Environ 391 Group analyzed and assessed the Kill-A-Watt competition’s effectiveness in impacting student conservation behavior. The goal of this assessment is to optimize the success of future semesters. For a pilot program, the competition was relatively successful (with the exception of North Quad, total reduction of 30,000 kilowatt hours). However, improvement is required in several areas, including the structure of the organization, publicity strategies, and the delivery of educational content in order to increase the effectiveness of the competition’s goals.

The structure of the Kill-A-Watt group was intended to be non-hierarchical, but a lack of an upheld structure resulted in the core of the group taking on too much of the responsibility throughout the program. To rectify this, the group must divide into self-governed subcommittees dedicated to finance, operations, housing, and education. The group also needs to plant roots in the residence halls via residential Kill-A-Watt Student Ambassadors (similar to Planet Blue Student Ambassadors). Finally, beneficial connections can be made or strengthened with other environmental associations like the Graham Sustainability Institute, the Office of Campus Sustainability, and the Planet Blue Student Ambassadors.

Kill-A-Watt made use of a number of publicity strategies, including e-mailing residents, communication through Resident Advisors, mounting posters in and outside the residence halls, tabling, chalking sidewalks, posting fliers, Facebook groups, and through Planet Blue Student Ambassador activity. Student surveys indicated that residents were aware of the competition, but only well after it had begun. The flaws in publicity were not in Kill-A-Watt’s methods but rather in their timing; they need to advertise more visibly earlier on. Some other opportunities for advertising for future Kill-A-Watt staff to explore include freshman orientation, the Green Wolverine Guide, Welcome Week activities, advertisements in napkin dispensers in dining halls, and mandatory Resident Advisor-led hall events.

Kill-A-Watt also needs to publicize auxiliary events and related activities in addition to the main competition. Seminars designed to educate participating students saw strikingly low attendance. This is evidence of a challenge not only to advertising but also to creating interesting and interactive events. The group responded to this setback by modifying the format to involve informal, social activities. South Quad, for example, held a “Desserts in the Dark” event, while Martha Cook played an energy-measurement game and passed out prizes. The organization garnered success from these casual gatherings and should continue to make the events simultaneously light hearted and educational.

With these improvements implemented, Kill-A-Watt has the potential to be a ubiquitous program in all of the residence halls changing students’ long-term energy consumption behavior.
2. ASSESSMENT REPORT

Kill-A-Watt is a student organization at the University of Michigan with the goal of creating an inter-residence hall competition designed to reduce residents’ electricity use. The nine participating residence halls include Besty Barbour, Helen Newberry, Martha Cook, Fletcher, Bursley, and North, South, East, and West Quad. Electricity use in each of the participating residence halls is measured for one month’s time and compared to energy usage statistics for the same month from the previous year to determine if the efforts of students have reduced the total. More importantly, the Kill-A-Watt competition is a tool to communicate energy reduction strategies to the students in hopes that they adopt these practices and reduce energy use in their lives beyond the contest. With the goal of changing consumption behavior in mind, the Environ 391 Group was tasked with examining, analyzing, and assessing the execution and effectiveness of the Kill-A-Watt competition.

In order to organize the findings of the research that was conducted, the assessment is divided into three sections: the structure of the Kill-A-Watt organization, the publicity efforts, and the delivery of educational content. To begin, an explanation of the Environ 391 Group goals and methodology of assessment is given. Please note, all figures can be found in the appendix on page 15.

2.1 ENVIRON 391 GROUP GOALS

The overarching goal of this Environ 391 Group is to help improve the Kill-A-Watt program and more efficiently achieve its objective of profound, long-term changes in energy consumption of the student body. To this end, the Environ 391 Group has two main goals. First is to determine the effectiveness of the current version of the Kill-A-Watt program in informing students about sustainability and its impact on their energy consumption. Second is to assess the organization, operation, and execution of the competition and provide recommendations contingent upon findings. An auxiliary goal is to provide suggestions to potential Environ 391 Groups that could be assigned to work with Kill-A-Watt in the future.

2.2 METHODOLOGY

To prepare for the assessment, each Environ 391 Group member performed secondary research on concepts central to the Kill-A-Watt program. Anna Snoeyink researched the pros and cons of collaboration and competition models when organizing and executing sustainability programs and events. Gabe Altomare researched the effectiveness of various forms of publicity, including mass-marketing and personalized approaches. Matt Pundmann looked into various implementation strategies for sustainability initiatives, from top-down hierarchical initiatives to grass-roots campaigns. Nina Levin researched the similarities and differences between behavior-change models on insular college campuses versus the broader populations of a state or country. Jenna Hetherington researched effective education strategies and the gap between environmental sustainability awareness and pro-sustainability attitudes and behaviors.
Finally, Madeline Caldwell researched various methods for encouraging participation in sustainability initiatives and tangible versus intangible incentives. This research provided valuable background knowledge of the core concepts relevant to the assessment of the Kill-A-Watt program. Additional research was conducted throughout the running of the competition, which included exploration of similar programs such as the original Kill-A-Watt competition at UCF and the Campus Conservation Nationals program. This background research was supplemented by primary research:

- Observation and participation in Kill-A-Watt events
- Quantitative surveys of residents
- Personal interviews with students participating in the competition
- Kill-A-Watt leaders and members
- Resident Advisors
- Housing Administration representatives
- Planet Blue Ambassador associates.

In addition, periodic meetings were held with sponsors Josh Peipock of the University Housing Administration, and Catherine Kent and Matthew Friedrichs, leaders of the Kill-A-Watt organization. Members of the Environ 391 Group also participated as education seminar facilitators, both leading and observing the events.

In assessing the quantitative results of the electricity reduction, one important note is that the results from North Quad are skewed. North Quad is an outlier in the measurement of power consumption because it is a new building, and many of its systems are still coming online for the first time. It will be a few years before a stable baseline of energy usage will even be established, and so to better gauge the actual efficacy of the program it was removed from the results.

2.3 ORGANIZATION

I. Kill-A-Watt as an organization

Kill-A-Watt is structured like a pyramid with two individual leaders on top (Kent and Friedrichs) and five subcommittees below: Finance, Operations, Publicity, Education, and Housing. Kill-A-Watt originally intended to be decentralized with each subcommittee covering their own duties, yet as the competition progressed the leaders shouldered an increasing amount of the responsibility. They met weekly to discuss recent happenings, upcoming events, strategies, and tasks for the following week. Beyond the internal structure of Kill-A-Watt, there were a number of external resources. Services they offered ranged from financial backing to advice and connections, to diverse resources and human networks. These organizations include:

- University of Michigan Housing Administration
- Planet Blue Student Ambassadors
- Enact
- APO Service Fraternity
- Student Sustainability Initiative
- Michigan Sustainable Foods Initiative
- BlueLab
While Kill-A-Watt was a relatively successful pilot, helping reduce energy consumption in the winning residence hall by 9%, it still has room to grow. In other programs at UCF and Bowdoin, for example, the winning residence halls achieved 37% and 39.3% energy reduction respectively. Modifications to the internal structure to emulate many of the energy reduction competitions across the country will lead Kill-A-Watt towards a brighter future. These modifications center on the following components: internal structure, connections with external resources, and infiltration and expansion of Kill-A-Watt members in residence halls.

II. Internal structure

While subcommittees were well organized, the heads of both the Education and Finance subcommittees suggested that Kent and Friedricks were relied upon too heavily. It is important to relieve this pressure for next year’s competition. Kent also said one of the biggest challenges was to “organize a whole bunch of people that were new to the project and new to the idea to accomplish these little tasks.” To amend this, Kill-A-Watt can model its internal structure off other successful University of Michigan student organizations such as Dance Marathon. According to Kent and the Dance Marathon website, these organizations rely on decentralized infrastructures with individual groups assigned tasks to be done in subcommittees independent of the central leadership. The majority of these undertakings are automatically dispersed, leaving leaders the freedom to handle overall strategy and act as editors for material and events. For example, the Education subcommittee for Kill-A-Watt is in charge of creating the content and flow of the major events the organization runs (see Figure 1). The suggested structure relies on the same amount of members as were involved this year (approximately 25). Another suggestion, per Lisa Connors of Consultant Partners, is to have non-leaders whose sole task is to act as mediators between major stakeholders and the organization. This will streamline information flow and create a system through which stakeholders can consistently connect with Kill-A-Watt. Overall, the goals of these revisions to the internal structure are to relieve the high demands on the leaders of the organization and to create an automated system by which tasks are assigned.

III. Connections and external resources

The next recommendation is to establish a constant contact in addition to the University of Michigan Housing Administration. This connection mimics systems at other colleges, such as the UCF and Florida International University, which have both produced higher energy reduction results compared to the University of Michigan. Peipock suggests that a liaison from the Office of Campus Sustainability be involved in Kill-A-Watt to help understand what can and cannot be done with regard to measuring the energy use. To expand from this, there are a few organizations and programs with potential benefits for Kill-A-Watt:
• **Graham Environmental Sustainability Institute**: Student education group involved in developing and training future leaders in sustainability and environmental movements

• **Office of Campus Sustainability**: Previous history of establishing and promoting environmental events on campus

• **Planet Blue Audit Team**: Successfully ran energy audits to help reduce energy use in general fund buildings at the University of Michigan.

One hurdle that Kill-A-Watt must surmount in order to utilize the above programs is to get clearance with the University of Michigan Housing Administration. The Housing Administration is apprehensive about letting University organizations into the residence halls because they are considered a home for the residents. This might limit the capability of the Planet Blue Audit Team, or another organization, to have presence in the residence halls. This does not, however, necessarily limit the capability for Kill-A-Watt to seek advice and other resources from these groups.

**IV. Infiltration and expansion of Kill-A-Watt members in Residence Halls**

The last suggestion centers on establishing a network of Kill-A-Watt members and ambassadors inside and outside the residence halls. This is a fundamental component; having leaders that exhibit environmentally-friendly behaviors can establish a cultural normality, increase peer education (an effective education model), and begin to publicize Kill-A-Watt to residents at the start of the year. Mike Shriberg, of the Graham Environmental Sustainability Institute, suggests utilizing the Planet Blue Student Ambassadors and making Kill-A-Watt an integral component of being an Ambassador. This is the first move to make headway into the residence halls, as it is an application and admittance process completely arranged by an outside organization before the semester starts. By utilizing the Planet Blue Student Ambassadors inside the residence halls, Kill-A-Watt will have instantaneous members and advocates to spread the message. While the Planet Blue Student Ambassadors are already involved with Kill-A-Watt, they can be utilized more effectively from the beginning of the semester.

The next component is to expand upon the Planet Blue Student Ambassadors to establish a network of Kill-A-Watt Student Ambassadors. The reasons for this are very similar to the importance of utilizing the Planet Blue Student Ambassadors; these ambassadors can come from within or out of the residence halls. As stated above, Kill-A-Watt utilizes connections with other environmental organizations to obtain volunteers for events. It is crucial to expand these connections and establish a physical presence in the residence halls. Leaders of the residence hall sections can be any residence hall occupant that is involved in Kill-A-Watt. Whether it is a Planet Blue Student Ambassador or a regular Ambassador, leaders would serve as instant student footholds for the core of Kill-A-Watt. By creating a network that is sturdy and expansive, Kill-A-Watt will have a wide base of students and volunteers to publicize and facilitate the competition. The difficult component of this proposition, however, is not utilizing the network, but rather creating it.

The creation of the network entails employing connections that the Student Sustainability Initiative offers, in addition to obtaining more students in the physical
residence halls. The traditional tactics of establishing student interest (Festifall, fliers, and posters, etc.) are recommended in addition to other methods:

- Recruiting friends and acquaintances
- Speaking in environmentally oriented classes
- Creating and distributing the Kill-A-Watt Facebook page early
- Linking the Facebook page with more information to get involved
- Recruiting Resident Advisors

Peipock also suggests that Kill-A-Watt have representatives to stay at the University during the summer, as many pivotal decisions for housing are made during the interim. Also, it would allow Kill-A-Watt to have a physical presence at summer events and recruit Resident Advisors into the competition. A combination of these methods offers potential for Kill-A-Watt to greatly expand their network.

In summation, Kill-A-Watt is well on its way to potentially becoming a ubiquitous and viable competition. Many of the suggestions are already in place, but with an organization that automatically delegates tasks, viable connections to outside organizations, and an established network throughout the residence halls, Kill-A-Watt could see the same decreases in electricity that Bowdoin and UCF have already seen.

2.4 PUBLICITY

I. Getting the word out: publicity successes and challenges

The Kill-A-Watt team used various strategies to publicize the competition and events that were held in the residence halls. These methods included the following:

- E-mailing residents about events
- Asking Resident Advisors to encourage resident participation in the competition
- Hanging posters in common areas and outside the residence halls i.e. the Diag, the Union (See Figure 3).
- Chalking several sidewalks on campus and the Diag
- Posting fliers on bulletin boards in residence halls
- Tabling in central areas in the residence halls
- Publicizing the Kill-A-Watt website (killawattum.org)
- Creating Facebook groups and events
- Posting bus signs
- Hanging posters on Diag boards
- Advertising in the Every Three Weekly newspaper
- Planet Blue Student Ambassador activity

Kill-A-Watt members worked diligently to spread the word. They were successful in announcing the existence of the contest. Conversations at tabling events included background information on the competition and energy saving tips. Volunteers were
provided cheat sheets to use at tabling events (see Figure 4). E-mail was also a fairly effective avenue of communication. E-mails were sent to Resident Advisors with pleas to encourage residents to attend and participate. They included an eye-catching visual aid (see Figure 14) and dates and times of events along with the announcement:

“You can win cool prizes, meet fellow hall mates, and work together toward your hall’s energy reduction goal. One lucky competition participant will win $200. Find out more at the event on Monday!”

Though e-mail is effective in reaching a mass audience instantaneously, unfortunately it was utilized too late into the competition to garner many attendants (see Figures 5 and 6).

II. Measuring publicity success

The Environ 391 Group surveyed residents in order to determine the most effective means of publicity (see Figures 11 and 12). Students were questioned at the first seminar on October 24, and again on November 7. The Environ 391 Group attended many of the Kill-A-Watt events in various residence halls where first hand observations indicated that attendance was low. Regardless, sufficient survey data was collected to assess the effectiveness of publicity (see Figures 5 and 6).

In the beginning of the competition, a substantial amount of those surveyed reported having heard of Kill-A-Watt through a friend or from posters in their residence hall (39.3%, see Figure 5). Towards the end of the competition, however, more students reported knowledge of Kill-A-Watt from additional publicity methods such as e-mails or via bulletin boards (see Figure 6). Though publicity was not initially as effective as it could have been, there were ultimately successes. Tabling in the residence halls proved to be productive in terms of disseminating general knowledge of the organization while bulletin boards and e-mails were able to inform students of its activity. It became clear that many residents were, in fact, aware of the competition, yet remained unengaged and unmotivated to take part.

Because the program was a pilot, publicity strategy is still in need of fine-tuning. The educational seminars saw extremely low attendance; some saw none. At an event in South Quad on October 24, only one student participated. The same event in West Quad saw zero attendance. This could have been due in part to the fact that Resident Advisors did not send out e-mails about the events to their residents early enough or because conflicting events were taking place in residence halls (for example, SAPAC in Bursley). David Schwartz, the Kill-A-Watt publicity chair, stated that popularizing events was difficult because many of them overlapped with midterms. Many posters were not mounted until just prior to the second event, nor was chalking utilized until late in the competition.

III. Improving publicity strategies

According to first hand observation and interviews with Resident Advisors and Kill-A-Watt members, there are several methods available for better publication. Interactive events needed heavier advertisement earlier on in the competition so that students would be aware of additional activities, not just the existence of the competition.

Publicity strategies, such as mass marketing, personalized marketing, and grass roots publicizing, can be used in conjunction to effectively advertise Kill-A-Watt events.
Mass marketing is a technique that targets the largest audience possible by communicating in a way that appeals to the majority. For example, if the Kill-A-Watt team were to broadly divulge information at orientation, they would impact a large number of incoming students in a direct manner. Another simple and effective way to mass-market Kill-A-Watt would be to create Facebook groups and events at the very beginning of the semester. Mass amounts of people can be notified about events extremely easily, and they may in turn notify their friends about them as well. Since many people reported having heard about Kill-A-Watt through Facebook or from a friend (31%, see Figure 6), word of mouth proves to be an effective means of advertisement. Personalized marketing narrows in on individuals based on specific interest. Perhaps sending out a survey about the competition would help Kill-A-Watt determine what kind of events people are more likely to attend and then target their audience more effectively. This is useful for honing in on that which specifically draws students.

Suggestions for improvement include targeting:
- Freshman orientation
- Green Wolverine Guide
- Welcome Week activities
- Napkin dispensers in dining halls
- Active Kill-A-Watt and Planet Blue Ambassador leadership in residence halls (see 2.1 Organization)
- Resident Advisor reinforcement (a Resident Advisor in North Quad indicated in an interview that she sometimes makes events mandatory for her hall, or knocks on residents’ doors to encourage them to attend.)

An important leverage point for Kill-A-Watt publicity is capitalizing on the power of peer pressure. If Resident Advisors, Ambassadors, and fellow students encourage each other to participate, it will impact the community. Through cultural normality, “there is effectively ‘social pressure’ exerted to elicit participation.” Once an idea is popularized, people will be motivated to join their peers in the movement. As participants become the majority, behaviors become social norms; minorities going against the grain feel guilty about not participating. If there is a more punctuated Kill-A-Watt presence in each residence hall, there can be a larger platform to employ the powers of peer pressure.

In summation, earlier advertising, peer to peer contact, and mass-marketing through Facebook groups and events can prove to be effective methods which will build upon existing strategies.

2.5 EDUCATIONAL CONTENT

The Kill-A-Watt competition ran from October 19 to November 18. During that month, two “education seminars” occurred in each participating residence hall. Kill-A-Watt Education department co-chairs, Katie Knapp and Carina Easley-Appleyard, designed the seminars. Prior to the first, Kill-A-Watt held an informational workshop for seminar leaders that were comprised of students from other environmentally and service
oriented groups. The seminars consisted of a PowerPoint presentation containing information about the contest as well as energy saving tips and trivia. Prizes and freebies were offered as well as behavior changing pledges declaring participation in the program (see Figure 10). These pledges were to be posted on residents’ doors and at the Community Centers in an attempt to both publicize and normalize participation.

I. Successes and failures of the education seminars

The first set of education seminars, deemed “Kill-A-Watt Events,” was held on October 24 in each of the nine participating residence halls. The Environ 391 Group facilitated the event in South Quad at 7:30 and 9:00 p.m. Unfortunately, however, only one student attended. A report from other residence halls told a similar story, so Kill-A-Watt quickly modified the activity. The organization decided to cancel the presentation and, instead, go door-to-door and talk one-on-one with students. Residents were asked to complete surveys and pledges, yet it was challenging to find students that were willing to engage in conversation. Approximately two-dozen students responded only after being haggled and bribed with candy. Even among the students who agreed to complete surveys, many cited free candy and raffle prizes as their greatest motivation to reduce energy consumption in the residence halls. It is not expected that every student heavily concern himself with the environment; in the first set of surveys distributed in the residence hall, 40% of students reported being moderately concerned, not concerned, or not at all concerned about the environment. This survey, however, is likely to contain response bias (see Figure 13). Therefore, it is crucial to provide a wide variety of reasons and ways to conserve energy that appeal to a diverse student body.

II. Modifications to the educational content

The structure and format of the Kill-A-Watt seminars was a downfall that needed to be addressed immediately. Therefore, in lieu of a second seminar Kill-A-Watt held various informal activities:

- **Martha Cook**: Residence Hall Coordinator Anna Gitter and Planet Blue Ambassador K.T. Michaelson, along with two Environ 391 Group members, held an intimate, informal discussion about the competition and personal energy consumption. The activity consisted of a game to measure the energy usage of appliances in the residents’ rooms using “Kill-A-Watt meters,” and prizes for those who ran the appliance with the lowest energy use.

- **West Quad, Betsy Barbour, and Fletcher**: Kill-A-Watt members set up tables in common areas with information and free pizza for students who completed pledges or surveys.

- **South Quad**: A “Desserts in the Dark” event took place where students could casually drop in between 7:00 and 9:00 p.m. They spoke with Kill-A-Watt members, played energy trivia games, and ate free desserts. The creative theme of the gathering and the incentive of free desserts were very effective in drawing residents with varying knowledge and levels of interest in Kill-A-Watt and energy conservation. The Kill-A-Watt members did a fantastic job of engaging over 50
residents in conversation about the competition and maintaining a relaxed yet informative atmosphere.

These modifications were made in direct response to the low attendance at the first events and feedback from student and Resident Advisor interviews that indicated that informal social events are more attractive. The need for a shift from preach-and-teach seminars to peer-to-peer contact is further supported by research that proves certain educational material can be better understood in peer-to-peer rather than instructor-to-student settings.\textsuperscript{xvvi}

The major shortcoming in the execution of the competition was failure to appear engaging to students. The delivery of the educational material did not appeal to enough residents to inspire lasting behavior change, let alone involvement in the competition. Though students are not required to attend events in order for their residence hall to win, the educational content of the seminars is essential to more than just the competition. The Kill-A-Watt organization was successful in responding quickly to the lack of interest in seminars and adapting the events accordingly. Difficulties initially attracting students have been rectified, but a further challenge remains in truly affecting lasting behavior change.

III. Recommendations

Based on observation, survey results, and personal interviews with students, Resident Advisors, University staff, and Kill-A-Watt members, the following are several suggestions for improving the format of the Kill-A-Watt competition:

- \textbf{Abandon the seminar format.} Instead, create events with interactive games and educational activities, such as South Quad’s successful “Desserts in the Dark.” Easley-Appleyard expressed her thoughts on shifting the information share from presentation to conversation. She stated that, in her experience, “one-on-one talks can have a big impact.”\textsuperscript{xxvii} Informal social events offer a relaxed and comfortable atmosphere that allows students to talk directly with Kill-A-Watt members and peers about the competition.

- \textbf{Use light-hearted incentives, such as free food, music, socializing, movie showings, or games to draw a larger audience.} Two Resident Advisors from participating residence halls stated that they have found that students are more likely to attend social and interactive events with free giveaways.\textsuperscript{xxviii}

- \textbf{Connect interactive activities with the goals of the Kill-A-Watt competition.} For example, Martha Cook played an inter residence energy measurement game and South Quad held a “Desserts in the Dark” gathering. Another potential event is a mass screening of popular television shows, sporting events, and movies so that separate appliances are not running simultaneously. Planet Blue Ambassador Marian Berger planned a similar event in East Quad. Her gathering involved the showing of the environmental documentary “No Impact Man” and a short discussion about consumption in the United States. This forum was fairly successful in that it attracted nearly twenty students, though only few willingly
stayed for the entirety of the discussion. Also, the conversation held a weak correlation between the film and the Kill-A-Watt competition. In order to effectively promote lasting energy reduction behaviors in students, it is critical that events directly relate to energy conservation. Kill-A-Watt Education and Publicity subcommittees can collaborate with event facilitators in order to establish a connection between the activities and the purpose of the competition.

IV. Creating lasting behavior change

While incentives or extrinsic rewards may attract students to events, it is not always the most effective method in implementing permanent behavior change. In fact, it can even undermine the behavior change Kill-A-Watt aspires to achieve. The dispensing of free food and prizes proved to be successful in garnering an audience, yet intrinsic motivation, in conjunction with the promotion of energy saving behaviors, is ultimately preferred. Studies have shown that intrinsic motivators, such as success from personal effort, are often more effective than extrinsic factors. As aforementioned, conducting surveys to determine the greatest motivators amongst the entire student population in residence halls is useful in creating educational material that targets specific student interests. Intrinsic motivation can be utilized by providing residents with feedback about electricity diminution, energy bill reduction, and greenhouse gas emissions they affect. In addition, Kill-A-Watt members can offer positive and proactive attitudes. Creating an environment with little or no risk of failure and positive reinforcement can build competence and increase lasting behavior change.

2.6 FUTURE ENVIRON 391 GROUPS

In working with Kill-A-Watt this semester, the Environ 391 Group succeeded in running an initial assessment of its first year as an organization. The group examined the structure of the organization, publicity, and format of events. Since this was its pilot year, the program is left with many recommendations for improvement. The following includes suggestions to future groups, on how to best execute these proposals:

- **Assess the timing of the competition during the school year** (see Figure 2). There are pros and cons to running the program in either the first or second semester. It is questionable whether running Kill-A-Watt simultaneously with Recyclemania, a second semester event led by The Office of Campus Sustainability, would diminish or enhance student participation in both or either of these activities. Second semester also coincides with Campus Conservation Nationals, a ten-week energy reduction contest between universities nationwide. A larger scale competition might further motivate students. Also, participation on behalf of the University of Michigan might be beneficial to its reputation as an ecologically oriented institution.

- **Question whether the Kill-A-Watt competition should run during both semesters**. Running two competitions could create yearlong excitement and
maintain prolonged interest. It could also reinforce conservation behaviors into the everyday habits of students. This might be the most important component because there is such rapid turnover in the residence halls.\textsuperscript{xxxi} However, it might not be feasible in the near future due to Kill-A-Watt membership constraints and University Housing Administration approval.

- **Seek a university-affiliated liaison for the Kill-A-Watt organization.** As suggested above, a foothold in the administration can be instrumental in creating connections for the group. Explore potential candidates in Planet Blue, the Office of Campus Sustainability, the Graham Institute, and the Program in the Environment staff.

2.7 CONCLUSION

Overall, Kill-A-Watt has the potential to become a very strong and successful organization. If implemented correctly, the competition can create long-term behavior change. Through observation, research, surveys, and interviews, the Environ 391 Group determined that three main areas of Kill-A-Watt need improvement: organization of the program, publicity methods, and format of the educational events. The slight reorganization of the structure, the connections developed with an additional university advisor, and development of Kill-A-Watt Ambassadors in the residence halls can promote the program more effectively while relieving some of the stress on the leaders. This can also assist in advertising the competition and events earlier on so that students are more engaged. The social elements of future events will attract a larger crowd and make them more open to participation. Since the program was a pilot, there are many fine tunings that need to be made in order for the organization to be more effective. With the recommendations put in place, Kill-A-Watt can potentially have a larger impact on campus while creating pro-environmental behaviors that will affect a variety of students at the University of Michigan.
### Figure 1: Committees and Sub-groups within Kill-A-Watt

<table>
<thead>
<tr>
<th>Group</th>
<th>Specified Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education (2-3 Members)</td>
<td>Creating and organizing the content for the major Kill-A-Watt events.</td>
</tr>
<tr>
<td>Finance (2 Members)</td>
<td>Finding and applying for grants and scholarships. Distributing and allocating money to different sectors of Kill-A-Watt.</td>
</tr>
<tr>
<td>Housing (4-5 Members)</td>
<td>Act as connection to University Housing Administration, planning the logistical aspects of when and where events and activities are going on in the residence halls, and act as connection to the Planet Blue Student Ambassadors and other members of Kill-A-Watt inside and outside the Residence Halls to get participation at events.</td>
</tr>
<tr>
<td>Publicity (2-3 Members)</td>
<td>Creating and organizing content to publicize Kill-A-Watt. Can include emails, bulletin boards, pledges, or organizing tabling events.</td>
</tr>
<tr>
<td>Leaders (2 Members)</td>
<td>Look at the big picture to decide overall strategy of publicizing Kill-A-Watt. Involved in everything and responsible for knowing what is going on in each committee and when events are, but not responsible for the physical creating of publicity or educational materials.</td>
</tr>
<tr>
<td>Residence Hall Leaders (1-2 per Residence Hall)</td>
<td>Act as the major connection to the housing committee. Responsible for getting materials from housing/publicity/education to help set up and run events. Help other Kill-A-Watt ambassadors set up impromptu events.</td>
</tr>
<tr>
<td>Non-Residence Hall Ambassadors</td>
<td>Members who do not live in the residence halls but still are involved. Can volunteer for tabling events, educational events, or with some of the committees if extra help is needed.</td>
</tr>
</tbody>
</table>
Figure 2: Changing Timeline for Kill-A-Watt

<table>
<thead>
<tr>
<th>Positives</th>
<th>Negatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential to build up competition</td>
<td>Potential conflicts with Planet Blue Student Ambassadors</td>
</tr>
<tr>
<td>Potential to work with Recyclemania</td>
<td>Potential for cannibalization of Recyclemania or Kill-A-Watt</td>
</tr>
<tr>
<td>Potentially more ambassadors inside residence halls</td>
<td>Potential to make less lasting changes over the course of the year</td>
</tr>
<tr>
<td>Could overlap with Conservation Nationals to bring National Competition</td>
<td>Unknown timeline and potentially unforeseen conflicts</td>
</tr>
<tr>
<td>Current time overlapped with many midterms</td>
<td>Residents potentially could be less open to change</td>
</tr>
</tbody>
</table>

Figure 3: Flyer posted on Diag boards, bulletin boards, and in the Union

Figure 4: Cheat Sheet Given to Volunteers at Tabling Events

“How would you like it if somebody turned you on and left you there?”

Kill-A-Watt
an energy saving competition
in the residence halls
OCT 19—NOV 18

www.killawattUM.org
Figure 5: Results of publicity effectiveness survey, first seminar (October 24)

![Bar chart showing results of publicity effectiveness survey for the first seminar.]

Figure 6: Results of publicity effectiveness survey, second seminar (November 7)

![Bar chart showing results of publicity effectiveness survey for the second seminar.]

Figure 7: Flyer distributed at resource fair and Festifall

KILL-A-WATT
COMING THIS FALL
TO A RES HALL NEAR YOU!

WHO ARE WE?
A new student group organizing an energy
saving competition in the Residence Halls

WE (AND THE PLANET)
NEED YOUR HELP!
- Introduce residents to the program
  at initial meetings,
- Look for us in your Res Hall this October
- Encourage participation,
- Include Kill-A-Watt in floor-wide emails,
  - Decorate your bulletin board, and
  - Help direct residents to more information

Please contact killawatt-info@umich.edu to get more involved

Figure 8: Energy saving tips distributed at events

Kill-A-Watt: Save Energy

- Turn off the lights when leaving room
- Unplug your turned-off computer unless its charging
- Take shorter showers! [hot water = energy]
- Most appliances still use energy when plugged in
  - Even if they are off. Unplug when not in use.
- In common areas, turn off lights and appliances
- Use a power strip to plug in all your electronics
  and flip it off when you leave the room
- Use the stairs, not the elevator.
- Talk to your Hall directors about changing the way
  energy is used in your res hall.
- Keep windows shut to improve the efficiency of
  heating/cooling systems
- Avoid blow drying some of the time (that’s you, guys)
- Purchase CFLs and energy-efficient devices.
- Attend Kill-A-Watt in your Hall OCT 25 + NOV 7
- Put your computer on Energy saver mode and re-
  duce the time it takes to go to sleep
- Turn off the light when you leave the bathroom (but
  please... check the stalls first)
- Open the blinds and use that natural sunlight
- Tell your friends about Kill-A-Watt so they reduce
  energy too!

www.killawattUM.org
Sponsored by MSA and LSA Student Govt
Figure 9: Poster used at Resource Fair

Figure 10: Kill-A-Watt Pledge distributed at events and in residence halls
**Figure 11: Initial survey distributed on October 24**

1. What year are you?  
   Freshman   Sophomore   Junior   Senior

   Email   Facebook   Bulletin Board   From a friend   Res. Hall   Chalking

3. Circle all the ways that you try to save energy:  
   - Turn off lights every time when you leave the room
   - Unplug appliances when not in use
   - Turn off computer at night

4. Rate your efforts to reduce energy in the residence halls compared to the rest of the student body.  
   1=Below average; 3=Average; 5=Above average
   1   2   3   4   5

5. How concerned are you about the environment?  
   1=Not concerned at all; 3=somewhat concerned; 5=extremely concerned
   1   2   3   4   5

6. What is your greatest motivation to reduce energy consumption in the residence halls?

---

**Figure 12: Follow-up survey additions to initial survey, distributed November 7**

6. Rate the impact of the Kill-A-Watt competition on your awareness of energy saving behaviors  
   1= Little to no impact   3= Moderate impact   5= Great impact
   1   2   3   4   5

7. Rate the impact of the Kill-A-Watt competition on your future energy consumption behaviors  
   1   2   3   4   5
Figure 13: Chart of responses from first survey distributed on October 24

Environmental Concern Rating

<table>
<thead>
<tr>
<th>Rating</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>33%</td>
</tr>
<tr>
<td>4</td>
<td>27%</td>
</tr>
<tr>
<td>3</td>
<td>20%</td>
</tr>
<tr>
<td>2</td>
<td>13%</td>
</tr>
<tr>
<td>1</td>
<td>7%</td>
</tr>
</tbody>
</table>

1 - Not concerned  
2 - Somewhat concerned  
3 - Somewhat concerned  
4 - Concerned  
5 - Very concerned

Figure 14: Flier included in e-mails sent to Resident Advisors and residents

Kill-A-Watt in your res hall:  
Win prizes, save energy, meet people, Kill watts!  
You could win $200!

www.killawattUM.org
4. ENDNOTES


iii Friedrichs, “Results.”


vii Interview with Kent,


xii Interview with Josh Peipock. 18 Nov. 2011.

xiii Environ 391 class lecture, Kris Kolevar, Planet Blue.

xiv Meeting at the beginning of the year With Kent, Freidrichs, and Peipock.


xvii Interview with Mike Shriberg. 18 Nov. 2011.

xviii Interview with Peipock. 18 Nov. 2011.

xix E-mail from Catherine Kent. 4 Dec. 2011.

xx Interview with David Schwartz, Kill-A-Watt Publicity Chair. 17 Nov. 2011.


xxiii Interview with Kaitlyn Ballard, Resident Advisor in North Quad. 16 Nov. 2011.


xxv López-Pérez, Raúl. Followers and leaders: Reciprocity, social norms and group behavior, Journal of Socio-Economics, Volume 38, Issue 4, August 2009, Pages 557-567, ISSN 1053-5357.


xxvii Interview with Carina Easley-Appleyard, Kill-A-Watt Education co-chair. 11/16/11.


Interview with Peipock.