GREENING CREAM & CRIMSON

2013 ANNUAL UPDATE

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In 2012-2013, Indiana University saw a banner year for its athletics programs, with an historic basketball season, national championships for the men’s soccer team and for Derek Drouin in the high jump, and a football program on the rise. This year has also seen marked improvements in the Athletic Department’s sustainability initiative. Expanded efforts to increase recycling at the tailgate have paid off with positive results, a pilot program and study of Assembly Hall recycling has uncovered beneficial information to reduce waste, and additional research into utilities data has provided the clearest picture yet of energy and water usage in order to help guide conservation efforts and set baselines for future reductions.

This 2013 Annual Update will describe the efforts undertaken during the 2012-2013 academic year as part of the collaborative internship program between the IU Office of Sustainability and the Athletics Department, as well as outline recommendations for future efforts.

Impetus for the Program

This collaboration began in 2010 with the hiring of an intern through the Office of Sustainability, and the establishment of a mentor within the Athletics Department. The interns have thus far been graduate and undergraduate students in the School of Public Environmental Affairs, and have worked closely with the Athletics Department in a consulting capacity. Sustainable athletics has been a growing field in recent years, and both IUOS and Athletics recognized opportunities with this type of effort. At this time, Athletics Director Fred Glass set the goal for the department to be the “greenest in the Big Ten”. With this high bar set, and the standard of excellence in mind that IU Athletics instills in its program, the subsequent interns and coordinators have set to work in aiming to make this goal a reality.

History of the Program

In 2010, initial research was undertaken to assess current practices and identify needs by holding interviews with staff members and studying the work at peer institutions. This led to the branding of the Greening Cream and Crimson initiative in February 2010, along with an online presence at Facebook, Twitter, and the iuhoosiers.com website, and the creation of a Green Team to foster collaboration and implementation of sustainable practices among various offices in the Athletics department.

One of the primary needs uncovered was to provide greater recycling opportunities for fans at athletic events. The initiative turned to creating a volunteer-based program for the 2010 football season to enable and encourage fans to recycle at the tailgate. The intern recruited volunteers to help hand out recycling bags to fans throughout the tailgate and inform them of which items are recyclable, and how the items can be recycled at the tailgate. A smaller-scale program was implemented for the basketball season, in which volunteers helped collect recyclable items during halftime. Additionally, a waste audit of the Training Tables cafeteria
was completed, demonstrating an opportunity for food waste composting, desk-side recycling bins were installed in offices, and a study of green computing practices was undertaken, in order to measure the energy and paper savings from duplex printing.

In the summer of 2011, the next intern continued these efforts with a primary focus on the tailgate recycling program, as well as a study into the possibility of an athletics equipment donation program.

**Current Goals**

For the 2012-2013 year, we sought to implement and expand upon previous efforts and uncover new information and recommendations to help guide this program. In practice, this meant aiming to increase the level of recycling at the tailgate, exploring new opportunities and areas for recycling, such as Assembly Hall, and working in other areas outside of waste, such as energy and water conservation, and green purchasing.

**Methodology**

The current phase of this program began in the summer of 2012. During the summer, an updated assessment was undertaken by interviewing staff members and previous interns, and additional research was completed to help provide a direction for the upcoming year. These efforts led to the creation of a framework of four primary categories to pursue: waste, energy, water, and purchasing. A document detailing these categories was written at the end of summer that detailed new findings in these four areas. Much of the work involved preparing for the tailgate recycling efforts for the fall. These efforts entailed designing materials, purchasing new items, coordinating with Athletics staff, waste haulers, other interns, and the Greek community, recruiting volunteers, and more. More information and the results are detailed first in the next section.

The second major area of work involved efforts to increase recycling at Assembly Hall. Information about the recycling bins utilized in both Memorial Stadium and Assembly Hall uncovered during the football season led to this initiative, as it appeared that the openings in these bins may not effectively capture some materials, and there seemed to be a lack of signage regarding recycling in Assembly Hall. The efforts therefore focused on the creation of new posters for recycling and trash bins, a pilot program for the trial of a new type of recycling bin, and the coordination of a waste audit to test and analyze the effectiveness of different types of bins.

Finally, in order provide an update and recommendations regarding utilities and purchasing within the department, current data was collected, organized, and analyzed to look for trends, communicate current usage, and identify a baseline for future conservation efforts.

These updates will be presented to the Athletics Green Team on April 24, 2013, where we will discuss ongoing efforts, needs for research, and opportunities for goal setting and collaboration. More information regarding these opportunities will be detailed below.
Tailgate Recycling

For the 2012 football season, a number of new initiatives were undertaken with the goal of increasing the tailgate diversion rate, or the amount of items recycled as a portion of the total amount thrown away. These initiatives appeared to be successful in improving the diversion rate, though we only have comprehensive data from one game for each season.

New Recycling Bags

At the beginning of the 2012 season, we ordered and received new recycling bags to hand out to tailgaters. Previously, fans were handed bags provided by Coca-Cola, but the supply of these bags nearly ran out by the end of 2011 and Coca-Cola stopped producing them. This provided an opportunity to create our own bags with the IU logo, the recycling symbol, and a description of which items are recyclable. The image to the right was created and printed on recyclable plastic bags, which we ordered in bulk as a supply for multiple seasons. The bags are thicker than standard plastic, which allows them to stay intact when they fill up with heavy materials.

Collaboration with Parking Lot Attendants

Before the season, we worked with the supervisor for the parking lot attendants, Derek Crawford, to develop a convenient system for providing them with bags to hand out to fans as they drive in. On the Friday before each game, we dropped off recycling and trash bags at Derek Crawford’s office, who then supplied the bags to the attendants before the game.

Additional Recycling Roll-Offs at New Locations

At the beginning of the season, we were provided with three large recycling roll-off dumpsters spread throughout the tailgating area: one in the north lot, one near the scoreboard and Hoosier Village, and one in the center of the Red Lot. After working with Hoosier Disposal and Athletics, we were able to attain 4 additional roll-offs to more than double our supply. An additional roll-off was added to the north lots, one was added to the Greek area, another to the center of the Red Lot, and one near the Greening Cream and Crimson tent in the tailgate field west of Fee Lane. In this area, and in the Red Lot, we moved the the roll-offs to the entrance and exits. Moving the roll-offs here makes them visible as fans enter the lots, provides a clear location to tell fans where to bring the bags, and makes it easy for them to recycle, as they can bring the bags with them in their car and quickly drop it off on the way out. In previous years, fans have been given the option to leave the bags at the tailgate and volunteers would come around to pick them up after the game. This year, although we did occasionally pick up bags left behind, we encouraged people to bring the bags with them, in order to reduce the workload for volunteers, but moreover, to encourage active recycling practices and discourage littering.
New Recycling Signage for Recycling Roll-Offs

On each of the recycling roll-offs, signage was placed around the container using the poster to the right to inform tailgaters about which items were recyclable. These signs were also placed at the volunteer tent, as a visual aid for answering questions about which items were recyclable at the tailgate.

Collaboration with the Inter-Fraternity Council

In 2012, in partnership with Mark Milby, the No-Waste Coordinator, we began a dialogue with the Inter-Fraternity Council to find ways to come together to address the litter problem. We had numerous discussions with the IFC leadership, and attended a larger IFC meeting to address previous efforts and potential solutions to the problem. The IFC expressed an interest in developing a no-litter policy for their tailgate, but no official policy was adopted during the year. However, the discussions have continued in the spring of 2013 with the new advisor to IFC/PHA, Michael Goodman, who has also expressed interest in developing a new policy. He has offered a solution involving a check-in and check-out system to provide accountability for each Greek house. More of these ideas will be drawn out in the recommendations.

New Recycling Bins in the Greek Area

In addition to the recycling roll-off provided for the Greek section of the Red Lot, we were able to utilize extra blue recycling bins that the Athletics Department had in storage. Before each tailgate, we placed approximately 15 blue bins around the Greek section, so that no area was more than 30-40 feet from a recycling bin. After the game, many of these bins were full, which helped to cut down on litter and capture more recyclable items.

A-Frames Constructed and Placed at Tailgate

With the design, as well as much labor, from IUOS Director Bill Brown, we created “A-frame” bag dispensers to provide additional bag supplies around the tailgate and draw attention to the effort. Schools such as Penn St. have found success with similar bag dispensers, which cuts down on volunteer labor and prompts fans to remember to utilize them. We now have four of these A-frames, including 3 made of PVC and 1 wooden frame, along with signs created to explain their purpose and illustrate which bags are for recycling and trash. During the games, we kept one A-frame near the volunteer tent, because of the high foot traffic on Fee Lane and the presence of our tent and volunteers, and placed the others near the recycling roll-offs, with the intention that people would drop off a full bag and pick up another one or create an association between the roll-off and the A-frame.
Recycling PSA Created and Played at Memorial Stadium

With the help of the Athletics video crew and two student athletes, we created a PSA for the first time that encouraged recycling at the tailgate and inside the stadium. The athletes described where the recycling bins were located, which items were acceptable, and modeled good behavior by dropping a bottle into one of the bins.

Post-Game Separation for the Michigan St. Game

For one game, we brought in extra labor for the post-game cleanup, in the form of the women’s intramural rugby team, to collect recyclable materials left behind in both the stadium and the tailgate. This recycling crew took the first shot at cleaning up these areas by picking up only recyclable items, and then another crew came in and collected the remaining trash. In the Greek area, this meant picking up littered items and emptying recycling bins, leading to a completely full recycling roll-off and very few items in the trash dumpsters. Throughout the Red Lot, many bags are left behind, so we grabbed full recycling bags and in some cases, took out the recyclable items in bags that had mixed recycling and trash.

Game Day Challenge Results: 44% Improvement Over 2011

<table>
<thead>
<tr>
<th>Game Day Challenge</th>
<th>Diversion Rate</th>
<th>GHG Reduction (tons CO2)</th>
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<tbody>
<tr>
<td>2010</td>
<td>36.7%</td>
<td>12.13</td>
</tr>
<tr>
<td>2011</td>
<td>37.3%</td>
<td>12.91</td>
</tr>
<tr>
<td>2012</td>
<td>53.6%</td>
<td>13.47</td>
</tr>
</tbody>
</table>

For the third year, we participated in the national Game Day Challenge event, in which universities compete against one another in recycling at football games, and we sent in our results from the Michigan St. game. It appears that the combination of these initiatives has helped to improve our diversion rate and performance in the Challenge, as we increased our numbers from about 37% in 2010 and 2011, to about 54% in 2012. Thus, for the first time we appear to have recycled more items than went to the landfill. According to Hoosier Disposal, they collected 9,100 lbs of mixed recycling and 7,880 lbs of trash at the tailgate.

It is likely that the post-game separation played a large part in the improvement, as we were able to capture a substantial amount of recycling left behind, but having additional roll-offs was certainly a key component as well, as it made it possible for both fans and the cleanup volunteers to easily access a place to drop off the recycling. Also, the combination of a greater presence through labeled bags, additional signage, and strategic bin placement may have made more tailgaters aware of the recycling opportunities and prompted behavior.
Tailgate Recommendations

1. Co-Locate Recycling and Trash Dumpsters

In the current set-up, we have scattered recycling roll-offs, and scattered trash dumpsters, known as front-loaders. These trash front-loaders are located in pairs near the Porta-Lets throughout the tailgate fields. Instead of having two trash front-loaders in each location, one of these should be a clearly labeled recycling front-loader. Since a substantial portion, if not a large majority, of the consumed items at the tailgate are recyclable, it is reasonable to at least have half of the containers as recycling. Also, this should not theoretically add extra costs since we already have two containers at each location. This location also makes the containers highly visible and easy to explain to tailgaters. The larger roll-offs should still be utilized in the locations we used for 2012, including at entrances and exits and in the Greek area, because the roll-offs may fill up, and these are convenient locations. A map of the locations is included in the appendix. It should also be investigated with Hoosier Disposal whether these roll-offs can be locked, which would cut down on litter due to scavenging after the games.

2. Install Additional Signage

At the tailgate, there is currently little encouragement or prompts to ask people to recycle and to prevent littering, besides the small signage installed this year on roll-offs, and volunteer engagement. While signs do not typically lead to behavior changes, they will at least inform people of the opportunity, which may prompt those already likely to engage in the practice, and it also demonstrates the Athletics Department cares about the issue and is working to improve it. A sign such as one below on the left could be placed above recycling roll-offs or bins to indicate their locations. The example to the right could replace the signs near the entrances that discourage litter, with this simple concept.

3. Additional Blue Bins for the Greek Area

From communications with the IFC leadership and observations, it would be beneficial to add more blue recycling bins to the Greek section. Since the area is so crowded, even bins separated by 30-40 feet may not be enough to prevent littering. If there are still extra blue bins not being utilized by the department, they could be useful in this area.
4. Create Check-in/Check-out System for Greek Section

As offered by the IFC/PHA advisor, a check-in and check-out system would create accountability for each house to clean their areas before they leave. An arrangement would need to be worked out between Athletics and IFC/PHA, but because there are designated property rights, there is strong potential for a solution. If a house fails to check-out, or if the spot is not cleaned up at that time, a determined penalty may be applied, as decided upon by the IFC/PHA. Additionally, a renting fee for each spot would help create an awareness that these are valuable properties, which are not free to be damaged. The fee could help fund additional recycling infrastructure in this section. It could also function as a deposit, so houses that continue to litter will lose the deposit, which would then provide funding for new materials.

5. Collect Recycling During Post-Game Cleanup

The pilot post-game separation experiment worked well in reducing the materials sent to the landfill. Though there is concern that collecting recycling during each game would add costs to the clean-up, this could be ameliorated by splitting up the normal crew into two crews. The first crew, similar to our experiment, would run through the stadium and tailgate fields first, collecting only recycling, while the second crew would collect the remaining trash. A more significant and possibly expensive change could involve bringing in a private company to clean the stadium and tailgate, perhaps at night, and ensure that they separate recycling.

6. Expand Tracking of Waste Numbers

Currently, we have only been receiving total numbers for recycling and trash about once or twice a season. It is difficult to gauge the state of recycling with only one game, and it is important to track the progress that is being made with new initiatives. However, it also may be inefficient for Hoosier Disposal to track every game, since it may require collecting and dumping large roll-offs that do not fill after one game. Yet, if we can have co-located recycling and trash dumpsters, we should be able to receive those numbers after each game, since these smaller front-loaders are emptied after each game. The larger roll-offs could perhaps be picked up and weighed every other game, or on a schedule that is determined to be efficient for them, and useful for Athletics. Additionally, we should start tracking the waste and recycling totals from Memorial Stadium. This will also require work in determining a schedule, though with Building Services, to find a solution that works well for both sides. Nevertheless, making progress towards waste reduction goals will necessitate having good data.

7. Expand Recycling Initiatives into Memorial Stadium

Tracking numbers in Memorial Stadium would allow us to have a more complete participation in the Game Day Challenge. Most schools that participate in this event use their numbers from the stadium, and this seems to be the predominant purpose of the event. Moreover, there is ample opportunity to provide greater encouragement for recycling in the stadium. All recycling and trash should be co-located where feasible and additional signage should be placed above waste stations to indicate which items are recyclable. The new posters designed for Assembly Hall could be utilized as is, or minor changes could made to apply it to Memorial Stadium. Also, to be the greenest department in the Big Ten, we will need to catch
up to other schools, such as Ohio State, that have implemented food waste collection for composting at the football stadium. The three steps involved would be:

- Ensuring that all concessions items are recyclable or compostable
- Purchasing bins for collecting food scraps, and creating signage
- Signing a commercial composting contract, or purchasing or utilizing a compost machine

Regarding step one, Indianapolis-based Greencycle has the ability to pick-up and compost food scraps, so further discussions could be continued with this company. There are also campus-wide discussions regarding a new waste contract that could include composting, so we should stay current with any updates. The other two steps will involve internal discussions within the department about the value of this type of initiative, and identifying possible sources of funding or matching from the university or other grants.

Assembly Hall Recycling

After interviews with Assembly Hall staff and studying the current recycling system, it appeared that there were two possible opportunities to explore: additional signage and experimenting with new recycling bins. These findings led to the creation of new posters and a pilot study with blue recycling bins.

New Recycling and Trash Posters

Before the season began, some posters that were created in 2010 were still above some waste stations. While these posters did indicate many of the recyclable items, it was not immediately clear which items should be recycled and which items should be trashed. These posters also utilized concessions items from the football games, which impacted the photos for popcorn boxes and soft drink cups, and did not include all major items, so it appeared beneficial to
update the design and pictured items. Current items were photographed and incorporated into a design that included a unique recycling fact on each recycling poster, for a total of six types. Each poster was then placed above their respective bin, with examples seen above.

Some of the items did not clearly fall into the recycling or trash category, and required making a decision based on potential contamination as well as information from Republic Services. Two debated items included whether wet paper and pizza boxes can be recycled. According to Republic, these are acceptable, so an updated poster included pizza boxes as a recyclable item, while the initial poster did not.

**Blue Bin Pilot Study**

Throughout Assembly Hall, the predominant recycling bin is a type provided to IU by Coca-Cola. These are large, round bins with four circular openings on the lid to collect bottles and cans. Three reasons sparked the experiment to test out a different type of recycling bin at Assembly Hall. First, the openings of the current recycling bins do not allow for the capture of many recyclable items sold at the concessions, including popcorn boxes, pizza boxes, and trays. Many fans may want to recycle these items, but the openings prevent it, and they may not want to or think to open the lid if a trash bin is next to it. Second, the Coca-Cola bins are not obviously marked as recycling bins. There is a symbol similar to the universal recycling chasing-arrows logo with a Coca-Cola bottle in the center of a circular arrow pattern, but its function as a recycling bin as not immediately apparent. Third, according to custodial staff members at Assembly Hall, the Coca-Cola bins are troublesome, because the bags tear when they remove them, which often then requires taking the entire bin downstairs and outside to empty.

With these factors in mind, a pilot study testing out the blue bins, which were utilized at the tailgate, was proposed for Assembly Hall. Because Assembly Hall has a symmetrical design with similar East and West sections at the balcony concessions level, an experiment was possible to compare blue bins with Coca-Cola bins. Six blue bins were placed on the West side, and six Coca-Cola bins were left on the East side. Additionally, two different types of openings for the blue bins were tested: a large rectangular opening, which would accept trays and boxes, and the standard opening containing two circular shapes. Three of each opening type for these blue bins were compared. To measure the results, two recycling audits were undertaken, in which all items in recycling bins were counted. Then, with the assistance of three undergraduate students as part of a service learning class, and the No-Waste Coordinator, Mark Milby, a larger waste audit was completed, which allowed for a comprehensive study of the number of items and weights of all items in recycling and trash bins in multiple areas of Assembly Hall.

The results confirmed the hypothesis that blue bins would capture more recycling. Plastic bottles and soft drink cups comprised the majority of

![Average Totals over 3 Games](image)
recycled materials, and for both items, the blue bins captured substantially more of them. The reverse held true for items in the trash, as the trash bins next to Coca-Cola bins contained higher amount of bottles and cups than the trash bins next to the blue bins. Regarding the openings for the blue bins, the square openings did collect more types of items, including pizza boxes, but at the expense of more contamination, meaning that they also contained higher levels of trash items. Finally, the trash bins that were not co-located contained very high levels of recyclable items. Additional charts and results can be found in the Appendix.

Based on this study and other research, four recommendations follow:

1. Where feasible, replace Coca-Cola bins with blue bins.
2. Utilize square openings near concessions, and circular openings elsewhere.
3. Co-locate the remaining bins, including the trash bins near the entrances.
4. Conduct a pilot program next season to collect and recycle cups from seats during the post-game clean-up.

While the items from the seats were not included in the waste audit, discussions with staff members indicated that many cups are left behind, and that attempting to recycle all items left behind may be too time-consuming considering the short window they have to clean the facility. Collecting only cups would cut down on the required time, and since the liquid in the cups is first emptied into buckets before the rest of the seats are cleaned, they could be collected and recycled at this time without extra effort.

Utilities and Resource Use Data

In order to provide information to the department regarding electricity and water consumption, complete utilities data was gathered from the Physical Plant and analyzed. These spreadsheets were organized in a useful way for the department to be able to see trends in usage and create a baseline for future conservation initiatives, as well as to provide a master document that can be updated as new metered data arrives.

Electricity

In December 2009, the first Athletics facility became metered when Memorial Stadium’s North Endzone came online. It was followed by Cook Hall, Assembly Hall in the fall of 2010, the Tennis Center, the rest of
Memorial Stadium in the fall of 2011, and Mellencamp Pavilion and the Gladstein Fieldhouse in 2012. The graph above illustrates this process and the relative and absolute data regarding electricity usage from current meters.

Unsurprisingly, Memorial Stadium and Assembly Hall account for the highest relative electricity consumption. Data from both the separate North Endzone meter, and the total Stadium data do not reveal any trends. On the other hand, the Assembly Hall data shows an upward trend in usage. Over the past two years there has been both an increase in the number of men’s basketball games played at the Hall, and an increase in attendance, so it seemed plausible that these factors could help explain the rise in usage. To investigate the idea, a correlation and linear regression plotted monthly men’s basketball game attendance versus monthly electricity use. The result did find a statistically significant relationship between these two factors. The additional games and higher attendance seems to account for about 30% of electricity usage, so there may be other factors at play as well.

In addition to painting a picture of current usage and providing a baseline, this data can be utilized to understand costs, including environmental and financial costs. Environmentally, the metered data can be used to calculate a carbon footprint. While current data does not yet represent total usage, it can be used to create a first estimate, since some of the larger buildings are included. Financial costs can also be calculated by utilizing estimated unit costs per kilowatt hour.

<table>
<thead>
<tr>
<th>Partial Annual Electricity Use¹</th>
<th>Associated Economic Cost²</th>
<th>Annual CO2 Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>11,465,419 kwh</td>
<td>$779,648</td>
<td>8,370 tons (or 1,641 cars)</td>
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</tbody>
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1. Includes only Assembly Hall, Memorial Stadium, Cook Hall, and the Tennis Center, from January to December 2012.
2. Based on unit cost of $0.068 per kwh, as provided by Charlie Matson from IU Engineering Services.

As more meter information arrives, more accurate estimates of these costs can be obtained. Additionally, electricity costs are expected to rise about 5% per year (Matson). After an audit as part of the recently completed Integrated Energy Master Plan, some Athletics facilities have been identified for potential projects for energy efficiency upgrades. Projects are listed by return on investment in the Appendix. As this process moves forward, the sustainability initiative and staff members should stay up to date with developments and play a role, where possible, in advocating for efficiency projects. Beyond these larger projects, there is an opportunity to encourage behavior-based, or end-user, campaigns to reduce electricity usage, such as unnecessary lighting and heating. These campaigns can be tracked utilizing this data.
Water

Water has been metered at Athletics buildings for longer time period than electricity, which allows us to see a longer-term trend for its consumption. The drought of 2012 brought water conservation to the forefront, and climate change will continue to make it a critical issue moving forward, so understanding current usage and trends is highly important. As was the case with electricity, water consumption at Memorial Stadium appears to be constant, while Assembly Hall reveals a positive trend. A regression did not reveal any strong correlation between attendance and usage, however.

Golf course irrigation numbers also illustrate a positive trend, with a strong spike during the summer of 2012, when the meter reached a record high level in June. This led to an annual high in 2012 for irrigation totals. An analysis (Appendix 5) did find a strong relationship between precipitation during the golf season and total irrigation numbers. These numbers are in light of water conservation practices undertaken at the golf course during the 2012 summer, partly as a result of Bloomington’s ban on unnecessary watering during the drought. Finding ways to consistently implement these and other practices can help to reverse this increasing trend, in order to help preserve a sustainable supply of water into the future.

Department-wide, from 2005 to 2012, Athletics’ facilities consumed an average of 69.6 million gallons of water per year. As a point of comparison, Griffy Lake holds approximately 417 million gallons of water (Griffy Master Plan). Additionally, this is approximately 10% of the total water consumption at IU (aashe.org). For a cost estimate, this average amount would cost $185,062 per year, according to the unit cost for water utilized in the 2011 budget (Matson). Water costs are expected to rise 20% each year over the next two years, so higher prices and
increasing usage will lead to higher costs in the near future. Reversing this trend also has the benefit of making the Athletics Department more financially self-sustaining.

Recommendations for Utilities Conservation

During the next year, the department could benefit from establishing an initiative to uncover opportunities to reduce unnecessary electricity and water consumption. A task force set out by the Green Team could be responsible for overseeing the stages of this plan, which may include the following steps:

1. Compile information from staff regarding observations of non-essential lighting, heating, cooling, and water consumption.
   • The process may include creating a survey, gathering first-hand accounts, and collecting observations provided to IUOS.
   • Additionally, an accessible online document or form could allow any person to upload observations.
2. Identify potential solutions and costs.
   • Including motion-sensing lights, timers, low-flow materials, new thermostats, signage, and new policies or guidelines.
3. Choose priority areas with greatest return on investment.
4. Install new items and communicate guidelines.
5. Track progress using metered data and communicate success.

Paper and Printing

In the summer of 2012, an initial study on paper use revealed the primary office paper to be Boise X-2 paper, with 682 cases ordered in the past year. Economic and environmental costs were calculated and compared with different types of paper. Current prices make it difficult to financially justify purchasing recycled paper, but prices should continue to be monitored to see when it makes economic and environmental sense.

Recycled paper purchasing, however, can be coupled with an initiative to reduce printing, where cost savings from decreased paper and toner consumption could be applied in part to recycled paper. According to interviews with staff members, printing is a major issue with the department, and it has risen substantially in recent years as it has become more decentralized by adding individual printers to offices. This trend has therefore led to higher paper consumption, and significantly higher costs in toner.

The estimated 2012 budget for toner is $140,000 with over 30% over the budget dedicated to printing for football. Certainly, printing playbooks and other information is required for athletics, but there may be an opportunity to conserve by printing only essential pages. One
strategy involves centralizing printing, which requires taking a second thought about whether printing is necessary by creating distance between the computer and the printer, as well as a deliberate release at the printing station. UITS is currently working on an initiative that could help set up centralized printing within the department. Working with UITS on this program, along with educational prompts such as the one to the above, could have strong financial and environmental benefits, making it a win-win for the department.

Additionally, the use of iPads by coaches and administrators is an ongoing discussion in the department, and this initiative would also have important environmental benefits. Financially, while iPads do add new costs, savings would be realized from reduced paper and toner purchasing. Also, the ability to quickly pull up plays and schedules may save time and improve performance on the field, and new apps may be able to provide additional benefits. Finding or developing these apps which coaches can utilize that provide greater benefits than paper will be a significant component to incentivizing the switch.

**Concluding Notes**

In 2012-2013, important progress has been made in this program, and useful information has been uncovered to allow for this initiative to continue to move forward. The standard of excellence that IU Athletics sets for its teams and student athletes should also provide inspiration to its sustainability initiative, which is already reflected in the goal of Director Fred Glass in aiming to be the greenest department in the Big Ten. Using the information in this report and previous efforts as a springboard, the Green Team, with leadership from the intern and mentor, should help to set a direction for the next several years by setting goals and laying out a roadmap to achieving these goals. The Green Team should meet two to three times per year to provide updates and create dialogue as these initiatives press ahead. As we do so, we will be helping to reach not only the goal of being the greenest Athletics department in the conference, but we will be partnering with the university in meeting broader sustainability goals for the campus, and helping to sustain our water, climate, food, and energy resources, without which athletics would not be possible.

**Sources**

