



Surprise Recycling Policy Brief

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Introduction:

The City of Surprise is striving to become a sustainability leader in its community, pushing toward a better, more sustainable future for its citizens. However, despite the efforts of the city, there seems to be growing concerns involving recycling and waste management. After consistently failing recycling audits by as much as fifteen percent, Surprise has set out to find new ways to revitalize and improve its recycling and waste management procedures. To do so, the City of Surprise has been working with the School of Sustainability at Arizona State University with a goal of increasing waste diversion and recycling tonnages as well as reducing recycle contamination rates. While Surprise does have an obvious economic incentive to improve their recycling and waste management systems, they have also made it clear that they intend to provide a clean, vibrant and sustainable city that can still be enjoyed many years down the road. This paper discusses the research process the group underwent, the current problems Surprise faces, and finally the solutions and recommendations by the group as well as further areas to research.

Research Process:

After contacting Christina Betz about initial possibilities and concerns she may have, the group decided to first analyze various branches of waste management and possibilities within each branch. Traditional waste, zero waste, recycling and composting were each analyzed by the four members with an emphasis on how each may benefit or hurt Surprise on a city-wide scale. After learning more about each of the waste management practices the group found that some practices were not feasible due to cost or scale capabilities. While Surprise had mentioned wanting to improve their waste management system as a whole, it was determined that expanding the recycling program would yield the most benefit. While many of the findings from

the research were already presented in the Problem Analysis reports and during the Group Presentation with members of the Surprise team, there were two key points that helped shape the final group recommendations: the importance of education, and the power of perception.

It was immediately clear in the research that education was paramount to the success of the program. In terms of solid waste management, it was found that “a large majority of the contamination found in solid waste [was] due to easily recyclable items. The most common types of contaminations came in the form of bottles, cups, and snack wrappers persist as well as overflowing recycling bins” (Bailey et al., 2015). Educating the population on the differences between recyclables and true solid waste would be key to creating a sustainable waste management program. It will also be important to educate citizens on the real benefits of sustainable waste management. As Mohammad Taherzadeh put it in his work, “when possible, waste should be seen as a resource that can generate economic wealth” (Taherzadeh, 2015). When people understand the real economic benefits to sustainable waste management, it will make it much easier for them to develop sustainable habits. In an interview with the Wall Street Journal, David P. Steiner, the CEO of Waste Management spoke about new recycling and zero waste programs the company was implementing. When speaking of recycled goods, he said that “[they] actually get us better margins and a higher return on capital, because there's a lot less capital than managing a big landfill network” (Forsyth, 2012). In addition, he stated that “our total revenue right now is about \$13 billion, \$14 billion. If we could take all that garbage you're giving us... and separate it... we could double our revenue if we sold it for its commodity value” (Forsyth, 2012). It is clear that pursuing sustainable waste programs will be monetarily beneficial to the city and Waste Management, who they contract through, so the key will be getting citizens to understand that point.

The second major point that the research presented the group was that perception surrounding sustainable waste management plays a significant role in the outcome of waste management policies. In general, people assume that waste management practices are difficult or overly tedious. When comparing different recycling methods, a group of researchers headed by Benjamin Campbell and Bridget Behe found that “perception of ease of use provided significantly higher recycling rates than when recycling was perceived to be not easy” (Behe, 2015, pg. 9). In other words, when citizens felt that the recycling process was easy, they were far more likely to recycle, than when they felt the process was difficult. Perception doesn’t only affect recycling habits, but waste management policies as well. People don’t like to feel like part of the problem, but rather part of the solution. “Policies that increase a feeling of empowerment may also have a positive effect on consumers’ motivation to make an effort, thus amplifying its efforts,” according to Dr. John Thogersen of the Aarhus University in Denmark (Thogersen, 2005). Therefore, if citizens feel that they are empowered and actively involved in the recycling process, they will be far more likely to be a part of the program. Overall, it was clear that the revitalized recycling program will need to be easily acceptable and empowering to the citizens of Surprise if it is to survive.

Current Problems:

Implementing a city wide recycling initiative is a difficult task regardless of externalities such as a population of drastically different values, ages, and demographics, as well as seasonal residents, lack of previous successful comparable examples, and difficulty to track and present factual figures to present for the city and its residents to progress from. An ever increasing population as well as the population dynamics in the city of Surprise is a very unique challenge when attempting to apply policy. Nearly half of the city’s 117,517 population is occupied by

residents in the age brackets of 18 and younger as well as 65 and over (otherwise known as children and seniors) (City of Surprise). In addition, America as a culture is still only slowly adopting recycling policies. According to the EPA, in 2013 Americans only recycled 34.3 percent of their trash (Municipal Solid Waste). That means the majority of our population still does not understand the importance of sustainable waste management. Accompanying this issue is the lack of a blueprint to tailor the perfect recycling program for a semi-large sized city in a heavily conservative policy state, making Surprise's recycling challenge even more complex and dynamic. One of the key questions the members of the Surprise team had for the group during the Group Presentation was whether there was a good example of a sustainable desert city for Surprise to base its program off of. Unfortunately, even with additional research, the group could not find any shining examples of desert city sustainability programs.

Presenting the largest challenge of unifying the city in a progressive recycling program is the mix of citizen demographics. Prominent in this is the presence of "snowbirds" – older residents from Northern U.S. or Canada who bring in an assortment of recycling habits and tendencies. It is important to take into account that this group of the city may not be the largest, but may play a seismic role in getting everyone on board. It is extremely difficult to have every last citizen buy into the premise of new policy when they are not there year-round. With this understood, a majority of the initiative could be placed on preventing excessive consumption habits that lead to the contamination of recycling. There is lack of concise figures on just how much each demographic and area of Surprise recycles and throws away. In the high consumption lifestyle of a first world country, often lost is the thought that items can be recycled instead of thrown away in the garbage. According to a University of Michigan study on Municipal Solid Waste (MSW) over 50 percent of garbage or trash thrown away has the potential to be recycled

item. Items often contaminated include: paper (27% of all MSW), plastics (12.8%), metals (9.1%), and glass (4.5%) (UM Center for Sustainable Systems, 2015). Though it is obvious that not all of these items are in perfect condition to be recycled at the time; however, this illustrates the point that over half of so called trash has the potential to be diverted if awareness were greater on the benefits of recycling. This paired with the drastic increase of consumption (68% increase in MSW since 1980) is hindering the benefits that could be put forth to the city and into creating a more sustainable lifestyle for Surprise citizens (UM Center for Sustainable Systems, 2015). It is not as easy as to say that these numbers can be changed. By changing the statistics, all citizens must believe that it is necessary to recycle and be ok with not always seeing tangible benefits immediately. That is the pinpoint on why this topic is so complex.

Deciding on the scale to further efforts at the project is also a problematic task. Beginning at a municipal level makes the most sense and will have the largest impact on the city and residents. Engaging stakeholders locally makes pioneering municipal recycling easier for others to see the impact in their community. However, the program would benefit greatly if it eventually received benefits from a wider county or state incentive program. Encouraging this type of paradigm shift in Arizona will be extremely difficult though, and Surprise will most likely have to act as a leader in this movement, rather than waiting for the State to make the executive decision. Understanding the financial aspects of recycling programs can also be very difficult. Financial resources are often times the most restricting and limiting factor for progress. For all the benefits that a new recycling program would provide, if it also involves an initial tax raise or levy to the citizens of the city it will be very hard to enact. There are many reasons finding solutions to the complex problem of recycling are difficult; however, finding the things that Surprise can control are critical.

Final Solutions and Recommendations:

After analyzing the research and situation, the group came up with several solutions built around our two key points. Each of the solutions is designed to work together in a multi-faceted approach that will help educate the citizens of Surprise on sustainable recycling practices, as well as change their perceptions on the difficulty of recycling and the importance of being part of the community. The solutions are organized from the least resource intensive to the most in order to give an idea of the best course of implementation. The solutions are as follows:

1. Host events to raise awareness about programs and zero waste.
2. Sponsor the “Wisest in Surprise” recycling competition.
3. Create a mobile app to increase ease of use and education regarding recycling.
4. Turn the Surprise Stadium into a Zero Waste Stadium.

The easiest solution for the City of Surprise to implement is to have small community events that educate citizens on recycling practices and increase awareness. These events can promote a variety of ideas. For example, the City could have an Earth Day recycling event where community awareness is increased while still having fun in the community. The beauty of such an event is that it is already a national holiday and a day that most people recognize. This will make it easier for citizens to remember the event and will help promote a higher turnout, without tedious amounts of advertising on the part of the City. At these events, the City could distribute informational packets like adherable recycling cheat sheets. The cheat sheet will give citizens a quick reference list of recyclable materials on an adhesive-backed sheet that they can apply to their recycling bin. This will give them a way to quickly double check to see which goods are recyclable at the decision point. Additionally, small recycling bins or composters could be handed out during these event to encourage initial starting of recycling or composting.

A very successful example of this type of giveaway can be found in the GreenOrlando program titled “Get Dirty for Valentine's Day,” where the City of Orlando handed out free composters to couples on Valentine's Day of 2015. The program was hugely successful, and over 2700 free composters have been given away to date (Jurgensen, 2015, pg. 25). These events are also a great way to incorporate Zero Waste directly into the community. The costs of these events vary based on what the activities are and what is being distributed.

The friendly recycling competition, “Wisest in Surprise,” is based off of the current recycling education program “Recycle Wise in Surprise.” In Surprise's initial project description there seemed to be an emphasis on the newly revitalized recycling campaign that focuses on educating the people of Surprise of the do's and don'ts of recycling in the community and the benefits of participating. The campaign was featured in the *Surprise Progress Magazine* as well as public service announcements, social media posts, media releases and informational magnets. Because Surprise has done such a good job in improving their educational campaign, the group thought the next logical step was to implement and utilize the educational information. The competition will allow residents to apply what they learned from “Recycle Wise in Surprise” to their own daily practices. The residents will be placed into groups based on their recycling zones. These groups are based off the collection zones each neighborhood is currently placed in by the City of Surprise. These zones (Green, Blue, Yellow, and Red) will compete against each other, with the recycling zone that has the highest recycling percentage with the lowest contamination levels receiving a prize, possibly in the form of funds to improve their sustainable development. This may include community gardens, composting programs, public space, bike lanes, farmers' markets or solar technology. Competitions could be performed on a quarterly, semi-annually, or

annually basis, depending on the level of funding and the way the City receives data on the zones' recycling habits.

This competition will help to mitigate the age gap in Surprise by allowing everyone to work together. Additionally, recycling will become more of a community habit which allows the community to grow together. This enforces the idea that they can be apart of the solution rather than the problem. The competition will also provide a way to test the current educational program and improve it. Finally, the competition will produce initiatives to better other aspects of Surprise and improve stakeholder experiences.

The start up costs for competition for the city would be put into marketing material and advertising. The competition could be sustained from the incentives that Waste Management gives the City of Surprise for having low contamination rates in their recycling. The majority of the cost for this program will depend on the choice of incentive. Composting programs are not going to be as expensive as implementing solar technology. However, these programs can add value to the community and may potentially help attract new people to the community.

The most ambitious of the group's solutions is to create a mobile app which will help educate citizens on acceptable recycling practices, as well as make the recycling process easier for them. The main feature of the app is a barcode scanner which can quickly inform the resident of a product's recyclability. If there is not a barcode, the app would also have a search bar so that the user can search for an item by name. The app will be based on the recycling guidelines of the city. This would be hugely beneficial to citizens, as many municipalities can only recycle certain types of materials. The app will also benefit people who just moved to Surprise or only stay for part of the year by informing them about what can and cannot be recycled in the City of Surprise. Additionally, the app can provide tips for recycling and composting as well as inform the

resident about news and updates regarding upcoming recycling events. Overall, the app will help to lower the contamination rate of recycling and help change the perception of users regarding the difficulty of recycling.

The main costs for the app are in designing the app and maintaining the database. It would be a ridiculously difficult task to create a database with every available product in it if the City were to choose to build from scratch. However, there are a multitude of free barcode and QR code scanners available on both the Android and Apple Stores. Although the group did not personally reach out to any of the producers of these apps, it could be possible to create a partnership with one of them in order to inherit their database so that the City doesn't have to start from scratch. In addition, the app could also be created to allow for item creation and entry by the user, that way if an item doesn't appear when scanned, the user can add the item in themselves. That would save the City the time and cost of paying someone to manually enter every item they can find. While the monetary costs of this project would most likely be fairly great either way, the potential payoff would be well worth it. Creating an easily understood and intuitive way for people to recycle would be incredible in encouraging new recyclers to pick up the process. Also, once the app is complete, or at least stable, it could be scaled up and marketed to other cities who are also looking to improve their recycling programs as well. Selling the app to other cities could help mitigate the costs of creating the app and eventually become a cash-positive endeavor.

Another suggestion that was arrived upon during the Group Presentation was to make the Surprise Stadium a Zero Waste stadium. Starting a Zero Waste Program can be daunting but the key is to lead by example. If the city buildings become Zero Waste, the residents will be exposed to Zero Waste and will see that it is relatively easy to implement. Having a Zero Waste stadium

can be a great marketing tool and can also expose the residents to the concept. Often times, people need a symbol of pride in order for them to feel invested into a project or program. The Surprise Stadium would provide residents a tangible example of what a Zero Waste program looks like. The stadium could house exhibits on the programs they've implemented, as well as a running tally of how much waste and money the City is saving every day by running the stadium as a Zero Waste facility. By seeing the City putting the effort in, the citizens will be far more likely to adopt their own Zero Waste practices as well. Zero Waste will require the city to completely change the way they think about waste. The initial start-up costs for Zero Waste are expensive. However, over time, Zero Waste will improve efficiency and reduce costs by preventing excess buying, reduce use, and using what the City already has available.

Future Questions and Concerns:

Though there is not hard data, at the time of this report, on Surprise's availability to public funding in terms of sustainability projects, as well as a lack of allotment to get city awareness kicked off via the recycling app and the "Wisest in Surprise" competition, there are encouraging signs nationally of diversion to recycling. "The percentage of MSW recycling has increased from 6.4% to 32.5% in 2006 (Bohme et al., 2010, EPA, 2006)." It is shown through curbside recycling as well as city programs such as drop off sites and composting programs that citizen initiative is increased when the tools are in the hands of the residents. We do not know how Surprise's resident base, with such varied values and habits, will respond to our goals; however, we are optimistic. With immense lack of data creating funding concerns, many cities do not have the expendable income to implement city-wide initiatives, nor do they desire to take the risk associated. Typically, the easiest way to fund such programs is via tax increases or donations. However, much of the city will react negatively to this, and thus fight against any

involved programs. The problem becomes too complex for most citizens, because they may not see the tangible benefits of their work or their prior habits do not align with that type of thought. In addition to the lack of tangible benefits, there will always be a size of the population unwilling to participate, and this must be accounted for.

Conclusion:

Every individual city is different and variables are unpredictable when it comes to sustainability practices. It will be up to the City of Surprise and their sustainability team to be vigilant and responsive to the changes that will be required to usher the city into the sustainable future that it desires. There certainly is room for optimism for the City of Surprise as over the past fifty years there has been a national increase in recycling and sustainable waste management techniques. The current trend upwards in recycling shows a willingness of residents in the United States to at least become more cognizant of sustainable behavior. These are the points that Surprise must illustrate to their citizens to ensure an outcome for their efforts. By revitalizing their recycling program through the use of varied educational tools designed to change the perceptions of its residents, the outline is there for Surprise to progress and make their recycling uniquely interactive and successful.

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