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## Surprise Policy Proposal

Today, recycling has become an instinctive process for many people and something that is almost innate for the millennial and younger generations; it is just a part of our everyday lives. Education programs promoting recycling have been successful over the past two decades through creating awareness about recycling and the need for the programs. In recent years, the campaign has even expanded from recycling only, to the 3 R's- Reduce, Reuse, Recycle, being prioritized in that order as well. In recent years, the 3 R's have coincided with the rise for our insatiable demand with consumer products. Rising consumerism is not only increasing the amount of natural resources being extracted for products, but it is also leading to record amounts of waste being generated per household.

Recycling programs are a way of attempting to manage these waste products which can be reused or repurposed into other products. Ultimately, the goal is to keep these materials out of our landfills, which are rapidly filling up and potentially leading to negative environmental impacts. At the same time, recycling has many positives aspects and is important because “you save energy, you save water, you use less toxic chemical, you create less air and water pollution and you create jobs; it's ecologically, across the board, a gain” (Laskow, 2015). Despite all the success of establishing community recycling programs and taking the benefits into consideration,

recycling programs also have a cost which is creating problems for many municipalities, waste/recycling companies and for the many community's participating in these programs.

### **Municipality**

Currently, as it stands, our municipalities are the responsible stakeholder with the decision making and determining how to manage their waste & recycling programs. This is a fairly common practice in the United States. Typically, big decisions, with regards to waste management, occur at the state levels. On the other hand, most of the work and the costs of dealing with the detritus of our consumptive habits fall on local governments- villages, townships, cities and counties, with limited budgets, who will rarely prioritize recycling over other core programs like roads and other infrastructure programs (Laskow, 2015). Many early adopters/advocates of community recycling have been fortunate to realize the financial value and benefits of participating in such programs. It used to be that municipalities were able to generate revenues from the separation and selling of the recyclable materials to waste management companies; this created the "pay its own way" incentive. In recent years however, this is no longer the case for many municipalities, who are now having to pay for their recycling programs, losing money and missing an opportunity for financial gains. The biggest factors contributing to these problems for municipalities are the costs of recycling materials along with high levels of contamination within recycling stream. High contamination rates have been a problem in recent years due to more complex plastics- product packaging, containers and plastic bags. These contaminants have become more predominate within municipal waste streams and has cost governments \$1.56 billion to deal with (Laskow, 2015). The high contamination is not only forcing municipalities to have to pay for recycling, but is also causing them to miss out on a

potential revenue source which could be used to help cover the cost of the recycling programs themselves. These contamination problems for municipalities are passed on to the waste management/recycling companies who are having to deal with the increased costs for the processing of these materials.

### **Waste/Recycling Companies**

Increasing amounts of contamination and the necessary costs for processing the materials are a cause of concern for waste management/recycling companies and for the municipalities who are involved with the recycling programs. Just as education and awareness surrounding which materials can and cannot be placed into recycling bins is a key factor with the success of a program, so is the way in which the materials are being collected. The most widely used approaches being used by recycling companies are the single-stream and dual-stream methods. Single stream, or commingled collection, is the approach where all paper materials, cardboard, plastics and glass are collected in a single bin and not source separated (Solid & Hazardous Waste Education Center). For recycling companies, single stream recycling is beneficial because it allow them to collect a greater variety of materials more easily and with less resources than dual stream recycling (glass, plastics and aluminum in one bin; paper materials in another) (Solid & Hazardous Waste Education Center).

With the interest of increasing recycling rates and keeping costs down, recycling companies transitioned from a dual-stream methods of collection to a single-stream approach (Olivo, 2015). A process which was supposed to be more effective and less costly is turning out to not be the case. The single stream processes in conjunction with the increasing amounts of contamination is increasing the labor costs for recyclers who must now sort through a multitude

of materials entering their facilities in a single truck. According to Tommy Wells, director of the D.C. Department of the Environment, “it is undeniable with single-stream, you get more recycled materials than you do with a dual-stream, but the downside is, you get waste that can’t be recycled” (Olivo, 2015). While the intent of single stream recycling was to collect more materials and save money in the process, it actually increases the processing costs and contributes to the high contamination rates at the same time (Solid & Hazardous Waste Education Center). This single stream process which was initially supposed increase overall rates and encourage more recycling has come with unintended consequences and made matters worse. Single-stream collection by increasing bin sizes and barely demanding any type of sorting from people, has allowed the recycling stream to become increasingly polluted and less valuable (Davis, 2015). Adding to the problem, the “throw everything in one bin” approach has made residents/people lazy and unsure of what can be recycled.

## **Residents**

One of the bigger causes of the increasing rates of contamination in the recycling streams is coming from community residents not properly sorting materials (if required) and/or the placing of non-recyclable materials into bins. The misplacement of materials may have been put in the bin with good intentions, but in recent years, residents have started experimenting with the materials being put into recycling bins. Materials such as rubber, metal or plastic: garden hoses, clothes hangers, shopping bags, shoes, and even Christmas lights are making their way into bins (Davis, 2015). A big reason why these undesirable materials are making their way into recycling bins is from the overall lack of clarity with which materials are recyclable or not. Education and awareness programs have been implemented by many municipalities around the U.S., but

according to some websites and depending on the city, nearly anything can be recycled.

According to Washington DC's Public Works Web site, any glass, plastic lawn furniture and dozens of other objects, big and small, are items that should go in the recycling bin; the only items stated which cannot go in the bin are plastic, foam and pizza boxes (Olivo, 2015). The inconsistencies with which materials are recyclable and which are not, is becoming confusing for citizens. In a 2014 online pole by the Institute of Scrap Recycling Industries, 65% of respondents claimed they do not understand what is considered acceptable for recycling (Tufano, 2015). The result of all this confusion is higher contamination rates; when people do not know if items are recyclable or not, they just throw it in the bin (Tufano, 2015).

Significantly adding to the confusion, and quite possibly the root cause of the problem, is the fact that recycling programs are local to the city or regional level and there can be stark differences between private recycling companies and municipal programs (Tufano, 2015). For example, certain programs will accept all types of plastics while other will not, sometimes even within the same metro areas. In an interview with Christina Betz, Solid Waste Manager for the City of Surprise, she reiterated the plastic bag issue and spoke to a unique situation she is forced to deal with. The City of Surprise has been consistently above the allowable contamination rates and is missing an opportunity to be paid for their materials. A big problem for the city is plastic bags filled with bottles and other recyclable materials. Even though a majority of the content is recyclable, their recycling servicer counts it as contamination. The issue here for Surprise is that many of the people who reside in Surprise are considered to be "snow-birds" and may only be in town a few months out of the year. According to Betz, she says many people are recycling the way they know how from their previous hometowns and do not know that the recycling programs/materials accepted in Surprise are not the same. Similar problems like these are being

voiced by many municipalities which is making the case towards a national recycling program where all accepted materials are consistent across the board. For this type of program to be possible, the federal government may have to intervene in the creation of the standards or even consider taking over part of the process to encourage investment and ensure that profits remain a public benefit (Davis, 2015).

## **Solutions**

The biggest take away after analyzing the recycling problems for the City of Surprise was realizing that waste management & recycling is very much a business that revolves around money and profit margins for the servicing companies. Also, municipalities are extremely limited with their capabilities to improve and build upon their existing programs based on the budgets they are working with. Especially when they are not receiving help with appropriate policies from the state or federal level. For the residents, there is a financial aspect on their part (in the City of Surprise) to participating in recycling program; but for the people who participate and recycle, the importance of educating and creating awareness as to which materials are allowed specifically in their city or with their servicer is the key to a having successful program. The problems that have arisen between these three stakeholders (business, budgets and people) are very complex, which is not surprising because it come down to business and each has their own perspectives and concerns. Fortunately, there are an array of short-term and long-term solutions which can be implemented that can benefit all stakeholders involved.

## **Short Term**

The low hanging fruit and possibly the easiest solutions to implement involve improving the education & awareness efforts. Education can be a quick fix approach which requires a minimum financial commitment on the part of the municipality. One of the biggest issues for the City of Surprise is contamination from residents placing materials which are not accepted in bins. Educating and training residents, school children, college students, businesses, visitors (Snow-birds) and creating awareness should be a top priority. Educational programs help keep citizens up-to-date and informed about guidelines related to the program, but also help to keep the residents properly engaged (Stearns). Creating effective educational outreach programs promotes participation in recycling and thus increases participation (Stearns). The City of Surprise has already implemented their “Recycle Wise in Surprise” program and has seen some improvements. However, even with their program and their flyers distributed to residents, the city is still above the allowable contamination rates.

Improving the flyer is a possible solution that is easy to implement. As mentioned, one of the bigger issues for Surprise is the high amount of plastic bag contamination. On the current flyer distributed to residents, this problem was highlighted, but it was very small and not positioned well on the flyer. Redesigning the flyer to focus on this information and making it stand out with an image can be a simple solution. Similarly, another approach would be to educate and create awareness through placing stickers or signage on the recycling bins with pictures showing people which materials are allowed and which are not. Stickers can be easily retrofitted on existing bins which are already out in the community. At the same time, passing the sticker/sign suggestion along to Waste Management (Surprise’s recycling servicer) to put on any new bins distributed in the community could be an effective way to manage this process.

Another way the City of Surprise can try and find the right solution for them is to take a polycentric governance approach, which was discussed throughout the course. Implementing alternative small-scale pilot programs within different neighborhoods within the city would be a better approach to test a program to see which might work the best. Taking this smaller neighborhood approach would be quicker and easier to implement. The one concern voiced with this solution is the inability to collect data from the neighborhoods separately. Taking the adaptive management thought process, it would be easier and more cost effective to pull a program from a single neighborhood to implement a more effective one, as opposed to the entire City of Surprise. For this reason, taking a neighborhood approach could be a best approach. Because the problem with single use plastic bags is so severe for the city, two pilot projects could be implemented: 1) a plastic bag collections program and 2) a ban on plastics bag which will incorporate a “BYOB-Bring Your Own Bag campaign. Here, the city can provide alternative convenient ways for residents to recycle their plastic bags at both their residences and at nearby stores. For the BYOB, reusable bags can be distributed out within a neighborhood which could encourage their use.

Another potential pilot project could be targeted towards the elderly population living in Surprise. Research has shown participation is often reduced in communities and cities with a higher population of elderly people. According to the City of Surprise’s website, 22,327 of the 117,517 residents are over the age of 65. Considering the current age of the population, an even greater number of elderly residents is anticipated in the City of Surprise over the next few years. The study by Domina & Koch (2001) stated, “waste management strategies may need to be reformed to accommodate the physical limitations of older people.” This indicates that the elderly population is less likely to take their recycling bins to the curb because they are



physically unable or view the task as too daunting. Taking this into consideration, there are two strategies which can be implemented to help encourage recycling with the older populations. First, a provided recycling service for those 65+ years old and/or disabled persons. This service would go to households that qualify and bring their recycling bins to curb for them. The drawback with this option is time and money; however, it would ensure participation within the older community. An alternative option would be to create a more ergonomic and easy-to-use recycling container which would make bringing the recycling bin to the curb less tedious and dangerous for an elderly or disabled person. In a research paper by California Polytechnic State University, usability was improved by making the bins smaller and less cumbersome through the creation of a trolley-like lever with wheels attached to a rectangular bin/receptacle (Boisclair). These two approaches could be good ways to get the elderly/disabled populations more involved with the recycling programs.

These approaches can be tied in with another suggested short-term approach. The City of Surprise is in a long-term contract with Waste Management. A renegotiation of the contract should be strongly considered. This renegotiation would be to receive better terms which would be more beneficial for the City of Surprise, but also allow them to implement these pilot projects to find the best approaches to more effective recycling- which ultimately benefits both stakeholders. This renegotiation discussion should also include the stickers/signage on new bins and any proposed pilot project which Waste Management can help facilitate to increase the likeliness of success. One such project which Waste Management can assist with is a “recycle-mania” program. A healthy competition between neighborhoods could be a good way to reduce contamination while also increasing recycling participation. There have been numerous projects which provide communities, schools, and workplaces with different incentives for recycling

more, but also with less contamination. An example of this is a Pepsico recycling competition implemented in several schools. These schools received points based on quantity of recycled materials and their efforts at community outreach and education. They are incentivized to receive more points because the schools highest on the leaderboards receive money for their efforts. More local to Arizona, Glendale Community College participates in a “recycle-mania” event which typically lasts up to a week; with the idea behind to promote awareness and outreach (Glendale CC Recycle Program).

The City of Surprise can stick with this general idea, but increase the length of time in which the campaigns are evaluated. Instead of a week-long campaign, recycling tonnages and contamination rates can be measured on a monthly or quarterly basis. At the end of every evaluation period, the results will be made public and whichever community has the best results gets a “prize”. For these purposes, the prize is an economic incentive which can be used for a project that benefits their specific neighborhood. The project will be selected from a list of community projects and voted on by the neighborhood based on which project they want to implement. The projects should be community improvement oriented and also be based around sustainability initiatives. Possible projects include improvements with more bike and walking paths, community gardens, shade structures, parks, or towards paying for their recycling/waste fees. In a sense, this would create a type of positive feedback loop. The winning community is granted money for their sustainable efforts, then the money goes to creating another sustainable initiative which raises more awareness, and the cycle goes on. To get the program started, an initial tracking of the neighborhoods contamination rates needs to occur. This would allow for the creation of a baseline metric in order to track progress and overall effectiveness. Tracking this would be too difficult and illogical by individual neighborhoods’ via service trucks. The City

of Surprise is already separated into different recycling zones consisting of multiple communities along the same truck routes. Using these existing routes and infrastructure should make it easier and more effective to implement this program.

Ideally, the City of Surprise wants to achieve a forty percent waste diversion rate for their recycling program. Today, when other municipalities, small communities, universities, organizations are striving to implement zero waste programs, aiming for forty percent may be selling themselves short on their goals. One of the easiest things the City of Surprise can do and have the most control of, is setting the goal of zero waste and creating a mindset within the City and with their employees, and ultimately establishing a strategic plan to achieve it. Zero waste is becoming more and more achievable, but it has to be a top down approach and the City themselves have to lead the way.

### **Long Term**

The challenges faced by the City of Surprise are very complex, especially when the necessary support on the state or federal level are not being provided. When some of the most successful zero waste programs are looked at in comparison, the biggest difference is the support coming from higher up authorities. There are certainly significant hurdles in front of the City of Surprise with trying to implement a Zero waste program, but it is still a possibility. Creating the mindset and setting zero waste target and strategies is the quick and easy part, but the actual implementation of the program will take a little longer. The high contamination is an indication of the difficulties and lack of control with getting residents to properly sort their materials for recycling. However, the city does have the ability to control their own staff, facilities, schools,

public areas & parks, and special events. This would be the best place to begin implementing change within the city and showing residents the commitment through leading by example.

One approach the City of Surprise can take which can have long term impacts is creating a recycling education program in their K-12 schools. Teaching students is a viable option in both encouraging recycling but also teaching the right procedures. Research has shown students who have participated in recycling education programs ended up with increased recycling behaviors (Smith). There is of course a cost to this, but the benefit is that students would be instilled with recycling behaviors and lessons learned will be taken home and carried with them throughout life.

Fortunately, for the City of Surprise, the early adopters of the Zero Waste movement in the U.S- Seattle, San Francisco and Oakland, have paved the way for much of the success today in the U.S with zero waste (Bailey, 2015). A tool which can be useful with helping the City of Surprise attain zero waste come from Eco-Cycle, called the Eco-Cycle Solutions Hub. This platform helps communities in the U.S. learn how to use the tools and lessons learned by other municipalities quickly attain Zero Waste within a 10-year time frame (Bailey, 2015). It is a continuously evolving platform created for communities who are wanting to take action without having to reinvent the wheel. With the help of this platform, implementing a zero waste program is possible given the proper commitment. There are four key elements which are needed to bring a community towards zero waste-an inspiring and well-communicated vision; a pragmatic strategy; Tools and resources to take action; and Community engagement to energize and sustain the vision over time (Bailey, 2015).

Another long term approach the City of Surprise can look into is establishing community partnerships. A local example is from The City of Phoenix. They have partnered with an organization called RecycleBank and have had much success. RecycleBank is a company who encourages recycling and environmentally-friendly habits. They bring people, businesses, and communities together to achieve real world impacts through household recycling and education (solidwaste.com). This program has successfully enticed more residents to recycle because residents are able to earn gift cards, groceries and merchandise by earning points for recycling their household materials (solidwaste.com). The EPA's WasteWise is another possible option for a partnership. WasteWise is a program that helps to minimize the waste stream through a baseline tool to evaluate their current state as well as ways that they can improve (epa.gov).

Below is a list of resources to some of the programs referenced:

<http://ecocyclesolutionshub.org/>

<https://www.biocycle.net/2015/11/16/how-your-community-can-be-zero-waste-in-10-years/>

<https://www.recyclebank.com/>

<https://www.epa.gov/smm/wastewise>

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