

Waste Less, Save More
Food Waste Reduction Solutions for Skagit County

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Table of Contents

Executive Summary	2
Statement of Need	3
Project Description	3
Project Timeline	6
Budget	8
Project Sustainability	9
Conclusion	9

Executive Summary

Food waste is a massive, widespread problem. Annually, global food waste produces 4.4 trillion tons of methane gas, the 3rd largest producer of greenhouse gas, just behind China and the U.S. Additionally, America spends an average of \$218 billion per year on wasted food. Within Washington state, organics account for 42.5% of the the residential waste sector. Skagit County produced 278,000 tons of waste in 2016 and 42.9% of the total waste was organic. Out of the organic waste, 10.9% were edible vegetables and 2.9% edible meats and oils.

The problem in Skagit County is two-fold. Residents are unaware the County offers curbside compost pick up, and residents lack education of what can go into the compost bins. For instance, some residents are not aware food waste can go in the same curbside bin as yard waste.

The County could benefit from better promotion of Waste Management's organics collection service, general compost education, and food waste reduction tips for the public. We propose several solutions to Skagit County, with the overarching goal of improving outreach and education across the County.

First, we propose Skagit take better advantage of the County's existing social media presence. Social media has the potential to be an easy and cost-efficient way to quickly reach the community with food waste reduction tips, basic compost education, and curbside collection awareness.

Second, we propose Skagit County partner with Skagit Transit to implement interior bus ads in order to reach a wider demographic, and people who may not be on social media.

Third, we propose better widespread implementation of compost and food waste reduction education throughout Skagit County schools.

In the long term, we suggest Skagit County consider and further explore policy development towards mandated compost in the County.

Skagit County quoted the budget to implement food waste reduction solutions for the County between \$5,000 to \$8,000. Increased social media outreach will only require the additional cost of staff hours for upkeep. Bus ads, although free to implement, will require design and printing costs, as well as staff hours spent on the project. Enhanced school involvement is expected to require the most money to fund because of its long-term, large-scale nature and greatest change to the current system.

Statement of Need

The need to reduce food waste is a global problem that is making huge impacts economically and environmentally. Skagit County is currently over producing organic wastes. In Skagit County, there is a need for education and outreach to the community to enhance composting involvement and food waste reduction. Without increased outreach and education, the County will likely continue to throw away organic waste, which will continue to cost the County economically and environmentally.

Project Description

Education and Outreach in Public Schools:

Our team spent a majority of our time researching solutions through elementary school education, in the public school districts. Education can play a critical role in reducing food waste in the long term. As a team, we looked into various case studies of schools and organizations who were already partnering with schools to work towards food waste reduction. We were able to gather that information through Callie Martin, Priscilla Brotherson from REsources, an organization that promotes sustainable communities in Bellingham, Boulder Valley School District, Ecocycle, who is partnered with BVSD, Bayview Elementary, and La Conner School District. In the end we decided to further explore Resources and La Conner as our main case study examples to relate to Skagit.

Priscilla Brotherson is the Sustainable Schools Program Manager at REsources. We were able to contact her to conduct an interview and acquire information about this program. The program is specifically focused on elementary schools and introduces composting within the cafeteria, covering all seven districts. Currently REsources is working with Geneva Elementary, and the next pilot school they will cover is in Ferndale, which currently has no recycling or compost. This is an example of how you can start from ground zero with no structure at all in place, and continue to work you way up. Here's how it works: REsources first go into conduct a waste audit, whether it be with the whole school or just one classroom. If it is with the whole school, assembly style, two educators go in. If it is just one classroom there is one educator with student help to conduct the audit. This is done in hopes to teach the students what items go into the various bins. Students will sort out waste to proper bins: recycling, compost and landfill. Priscilla mentioned that waste audits are beneficial, used as a tool to provide incentive for schools to want to initiate these programs showing the schools what is

garbage and what is not, as well as how much waste they are collecting overall. With that, an educator will have the students partner up with one other person, to be in charge for about 2 days during the remainder of the year to monitor lunch for the rest of the students. There are usually about 90 students, and 180 days in school, therefore, two days out of the year seems to work nicely. They monitor lunch and explain to other students what goes where when it is time to clean up. Priscilla said, Reducing waste at school instills a culture of environmental responsibility in students. With some creativity and a simple change of habit, schools can watch their dumpster size and waste bill shrink.

For another case study, we looked into La Conner School District, and their food services, located in Skagit County. Georgia Johnson, who is the director of conducting a majority of their programs, provided us with some statistics and information regarding their services. Today they compost all of their food waste, and have been doing so since 2012. They have composting, paper recycling, glass/metal/plastic recycling, and landfill. They offer composting classes in the kindergarten and first grades each year. As well as an after school enrichment garden class where students are taught how to garden, compost, seed harvest and cook. The school district services three facilities, one middle, one elementary and one high school. Amongst each facility, the landfill per building is only about 4-8 pounds per day. To put that into perspective, that is roughly 2.7-5.4 pounds per students per year. In comparison, studies show an average elementary school student disposes of 45-90 pounds of waste per year. Georgia is extremely interested and excited about spreading this work around Skagit County.

We recommend Skagit County implement these programs in the elementary school sector. After speaking with Bayview Elementary, La Conner School District, and REsources, they have demonstrated success and that this is an important step in food waste reduction. We choose to focus on elementary schools for two reasons, one is, because there are more elementary schools than any other school in Skagit. Secondly, kids are offered the least amount of choices for the lunch hour, than in middle school and high school. Priscilla informed us that the training on proper waste disposal becomes much more complicated as you move up the grade school system. Although this program focuses on elementary schools rather than direct outreach in the community, research has shown that students developing these practices at a young age will implement the same behavior throughout their lives. In addition, students who become excited about this work, can bring information home to teach their families what they are doing in school, and bring food waste reduction and composting into the single-family household.

It is important however, to consider certain challenges that have arisen, following start up of the project. The challenges that REsources have run into is getting the custodian and food service workers within the school on board. At times, the custodian and cafeteria staff are under the impression that these programs will create more work for them, when in reality it can be less work. Before staff can turn down the programs it is critical to ensure that the staff understand exactly what the program entails. Another challenge, is making sure the school has all the resources available. This is where budget may come into play as each school will require different resources upon what structures are currently in place or not.

Public Outreach Through Social Media:

Social media use can be highly effective due to the low costs and the vast audience it can affect. Skagit County currently has social media accounts for Facebook and Twitter, with about 1,700 and 2,300 followers, respectively. Current posts are PSA's related to local news, traffic, and weather conditions. We propose Skagit County include posts with information on promoting compost practices and overall food waste reduction. Focused and timely posts include: the benefits of reducing waste, general food waste reduction tips, composting basics, and curbside compost collection service promotion.

King County as a case study is a great example of social media outreach. King County's posts have graphics to make them engaging, are short and easy to read, and often include links to more extensive information. Their facebook page features many food waste reduction videos that cover various creative uses for food that is often thrown away like stale bread and broccoli stems. Since these videos are free domain, Skagit County could directly use any of King County's videos in their own social media campaigns.

Unfortunately there is no measurable data that directly links social media outreach to an increase in single family composting or waste reduction. That said there is a strong correlation between King County's thriving social media pages and their very successful composting program.

Skagit Transit PSAs:

Along with social media, implementing bus advertisements is an effective way to increase awareness to the public. Sustainable Connections in Bellingham recently started running ads on Whatcom Transportation Agency (WTA) buses. Sustainable Connections believe this to be effective and easily accessible way to get information to the general public. This is due to bus ads reaching multiple demographics and is less wasteful, and more effective, than sending newsletters/fliers to each individual

residence. Skagit Transit has an agreement that PSA's and non-profit ads are posted for free on the bus interior. As Skagit Transit offers this service for free, this is an easy solution that the county can benefit from. We propose Skagit County to include advertisements with eye catching slogans like "Love your leftovers" and offer tips on reducing food waste with links to the County website and/or social media.

Policy Development:

Throughout our research, we have seen that the most effective way to reach Skagit County's goals on food waste reduction is by mandating compost. We propose that throughout the coming decade, Skagit County adopt certain strategies, using King County as an example, in policy development toward bans on organics in the garbage stream. We suggest Mt. Vernon as a pilot city to begin with, as they are the largest populated area in Skagit County, with a population of 34,590 residents.

We used King County as a case study, where compost is currently mandated in Seattle. Although composting is not required in the County outside of the city of Seattle, that may not always be true. In the future we may see bans on organics in the garbage stream in the County at large. Our main contact persons in King County, was Karen May, who is the project manager for King County Solid Waste Division. She was able to provide us with the Hauler Dashboard, that is attached below in the appendix, up to date as of July 2017. The data represents a general trend that has been increasing since 2014, on organics being hauled county wide. It is clear that since the ban occurred in Seattle, in 2015, single family household composting has increased dramatically. One key point to consider that Karen brought to our attention is that although bans do increase diversion, it can also increase contamination, resulting in non-usable organic waste. If you look further into the latest reports in the Hauler Dashboard, you can see varying numbers when comparing city to city participation. This is influenced by how much promotion is done within those cities. Therefore, education, promotion and outreach are critical to the premises of this entire project, education being essential to decreases contamination.

Project Timeline

Prior to these proposed solutions' implementation, the county should gauge their starting place to mark success and areas that need improvement as time goes on with these projects. We suggest the county collect the following information prior to project start up:

- Gather information on current social media popularity and use

- Facebook and Twitter stats (e.g. number of followers, post types, posts per week)
- The number of residential compost bins and subscribers throughout the county and in each city
- The number of Skagit County schools that are already involved in some level of environmental sustainability education or programs
- The number of schools with cafeteria waste stations that offer composting
- The number of school presentations given per academic year
- Expenditures and revenue the county currently experiences when it comes to waste collection and disposal

Post-startup there should be frequent checks on the project's progress, comparing them to the prior numbers to measure success. From 1-6 month after start-up, we suggest Skagit do the following:

- Find and contact pilot schools
 - Perform waste audits and presentations at pilot schools
- Increase social media usage
- Create and implement bus ads

After 6-12 months, Skagit should continue to collect project statistics to track success, as well as the following:

- Waste audits and presentations should be complete at pilot schools
- Continued social media usage
- Find new schools to add to the program
- prepare for the upcoming academic year for school programs

After one year and beyond, successful tactics should be focused upon and strengthened while ineffective ones should be improved or removed entirely. We suggest to focus on these goals:

- Further outreach, aim for different demographics
- Continual addition of schools for this program
- Begin process of County mandated composting

Budget

Skagit County's budget for food waste reduction, education and outreach is within the range off \$5,000-\$8,000. Keeping that in mind, we have delegated certain areas of need where the money will be allocated.

The most costly item will be education within elementary schools. These costs will include staff time per class visit, training volunteers, and materials and resources needed to implement the program to schools. Social media campaigns will require staff time for both the county's Twitter and Facebook accounts but no other foreseeable costs. Bus advertisements for Skagit Transit are free to run but will require staff hours to create postings and possible printing costs.

1. Cost of materials/resources needed for schools, costs spent per class visit and per school per year, taking into account resources already available
2. Social Media
 - Costs for staff hours
3. Bus Ads
 - Skagit County bus transportation has an agreement that they cannot post advertisements on the exterior of buses but they can post PSA's and non-profit advertisements within the bus for free.
 - Costs for staff hours to create ad
 - Costs for printing ads

Project Sustainability

A major foundation for this project will be involvement of the community, county, and public schools within Skagit. The more schools that begin this program, the more students and local residents will become aware and educated on food waste reduction and disposal. The more education and outreach there is, the more successful the project will be thus saving the County money that can be focused on areas that may need improvement.

The sustainability of this project will be dependent on these factors:

- Expenditure for start-up of the project will be minimal
- Bus ads within Skagit County will be free
- Bus ads will reach multiple demographics and certain bus routes pass through multiple cities, increasing the range of viewership
- Social media platforms will have little impact on budget, besides staff hours
- Increased compost bin subscriber will increase revenue to continue and grow the project
- Decrease of overall waste will lower landfill transportation costs

- Individual projects by schools or communities will ensure continuation of food waste reduction in the long term
- Lessons taught at schools should carry on through students schooling and lives

Conclusion

In sum, our team is suggesting two short term and two long term solutions for food waste reduction in Skagit County. In the near future, as suggested within our timeline, we propose for Skagit to increase outreach through social media. We have provided tips and tools from King County, for Skagit to utilize as a starting base, mirroring similar strategies. Although there is no data to support the premise that social media is a beneficial tool to reach audiences, the overall instinct is composting is increasing county wide. For our second short term solution, we have proposed the idea of implementing bus ads on Skagit County Transit, using a catch phrase or picture, and links to social media or other sites to find more information on this topic. Our long term solutions include an increase of education in public schools, and over the next decade, putting efforts toward policy development. Our research has suggested that these are the most effective strategies in meeting Skagit County's food waste reduction goals. Overtime it will be necessary to study what is working and what needs to be improved to ensure success.

Appendices:

King County waste hauler charts:

https://docs.google.com/document/d/1_o-4YgYFW9fNtSYbN4xmchVsuaYr230w2d67pLNhx8k/edit?usp=sharing

Food Waste Statistics:

https://foodforward.org/2017/09/how-much-food-is-wasted-in-america/?gclid=CjwKCAiAu4nRBRBKEiwANms5W3jRQns9BAk_FkaMypL87IIL_Mfjm_ZjfqsMkmRoT7eXCai5aWL3VBoCyngQAvD_BwE

2015-2016 WASHINGTON STATEWIDE Waste Characterization Study, State of Washington Department of Ecology

Case Studies/Contacts:

<http://www.re-sources.org/> - Priscilla Brotherson

<http://www.bvsd.org/Pages/default.aspx> - Ghita Carroll

<https://ecocycle.org/>

<http://www.be.wednet.edu/bayview> - Jeannie Dodd, Tiffanee Brown

<https://www.lcsd.wednet.edu/> - Georgia Johnson

<https://sustainableconnections.org/> - Mark Peterson

<http://kingcounty.gov/depts/dnrp/solid-waste/programs/climate/contacts.aspx> - Karen

May

<http://www.seattle.gov/util/MyServices/FoodYard/HouseResidents/PreventFoodWaste/index.htm> - Veronica Fincher

<https://twitter.com/KingCountyWA?lang=en>

<https://www.facebook.com/KingCountyWA/>

<http://www.skagittransit.org/>

<https://sustainableconnections.org/> -

<https://www.wm.com/us> - Joel Kohlstedt

<http://www.ssc-inc.com/index.php>

<https://bouldercolorado.gov/> - Kate Bailey

<https://www.longmontcolorado.gov/> - Holly Milne

Longmont CO promotionals examples:

https://docs.google.com/document/d/1g7qTB-tdW9_hY0bOPbRAxXOAtwqKj-6gVqfswD5ZyXl/edit?usp=sharing

La Conner School District Food Services:

https://docs.google.com/document/d/1hCGcq-ggW6lhFgsD5JhkRddXhTk_jSUBrUIRCw0xPmg/edit?usp=sharing

Research on Students in Schools:

<https://greenteacher.com/turning-rotten-into-right-a-kindergarten-study-of-decomposition/>