

Project Proposal: Chicago Rakes Up Initiative

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Summary

The purpose of this proposal is to suggest to the City of Chicago an improved method of yard waste removal for the 600,000 residents that live there. Parallel to its modern image, Chicago aims to be a sustainable and environmentally-friendly city. It cannot easily achieve this goal with its current yard waste/composting program, which is utilized by only 1% of the city's residents, and whose annual collection rates pale in comparison to other big cities in the United States and the world. Thus, our suggestion is to initiate a PPP (Public-Private Partnership) which will ensure that yard waste is being collected and disposed of in an environmentally friendly and safe manner.

Project Description

Introduction

In order to improve the yard-waste collection rates for the city of Chicago, our suggested plan will cost the city minimal expenses, yet improve its landfill diversion rates. Chicago trails behind when compared to other well-known cities around the United States like Los Angeles, California and Portland, Oregon. The crux of the suggested plan is a PPP with a private yard waste disposal company. There are many in Chicago, but we will use Republic Services which is known for its reliable yard waste removal and efficient methods as our suggested option throughout this proposal. Republic Services will provide a seasonal yard waste pick-up service for the residents of Chicago during the peak collection times of the year, while implementing a simplified on-request pick-up system for the remaining months. We believe that this method caters to the needs and concerns of Chicago's residents and will encourage them to dispose of their yard waste more properly in the future.

Rationale and significance

Improper yard waste disposal is not a light issue. Its effects range from increased potential for flooding from clogged storm sewers to excess nutrients from fertilizer, which may cause algae blooms. Chicago is facing a huge decline in the rate of yard waste recycling, and their only known recycling program, *Blue Cart Recycling* has proven unsuccessful in helping increase the yard collection rate. The issue keeps getting worse with a decrease in the ratio of yard waste production to yard waste recycling in the city of Chicago. If the problem is not addressed properly and soon, the city may be headed towards large scale effects of uncollected yard waste, such as flooding or the release of methane gas- a very deadly greenhouse gas.

Plan of the Work

Scope

This proposal is limited in scope; it tackles the lack of yard of waste collection problem, without doing detailed research. Furthermore, this proposal overlooks the details and cost to repeal the current program. We also do not consider the potential legal issues or conflicts that may arise with the public-private partnership nor with the implementation of our proposal. We do not extensively cover the benefits a company might have to form this partnership nor do we insist on a particular company (Republic Services) to be the right fit. The purpose of this proposal is not to focus on the specifics of the implementation but outline a possible approach.

Task breakdown

Phase 1: Set-up of the website, ticketing system, and phone line

Set up of these three parts of the program are essential to a smooth start of the program.

Phase 2: Coordinating sponsoring companies

Companies should be contacted to either assist with the collection of yard waste or simply sponsor the program, with the incentive being that their company will be advertised on the bins and brochures that will be distributed and the paper bags that will be sold. In addition to that, a company with environment friendly and sustainable goals can benefit from the PR.

Phase 3: Registering residents into the new system

This step in the process is essential so that the Streets and Sanitation Department knows the needs of each resident. This way, the department will not be sending out trucks unnecessarily. Chicago is divided into six different zones for garbage pickup. Registration should be spread across the time span of one week, so that each zone has one day to sign up for the service. This will help the website not crash because of too many people trying to sign up at once (additional sign up weeks can be added as needed). Once registered, residents should be given a digital version of the brochure, which will have information about when the new program will go into effect, yard waste pickup schedules, how to request a pickup through the website and by phone, and items that can and cannot be put in the new bins.

Phase 4: Distributing yard waste bins

During this phase of the process, the new bins dedicated to collecting yard waste should be sent out to each resident or property.

Problem Analysis

Chicago has been trailing behind in terms of the amount of yard waste that has been collected for the past decade, having recycled at its best only 17% over the past decade. Whereas other cities' recycling rates continue to rise with every passing year, Chicago is the only city whose rates are constantly in decline, as seen in Chart 1. Chicago's line is flat; this is because although the other three cities' collection amounts are in the hundred-thousand tons, Chicago's highest collection of yard waste barely passes 5,500 tons (Chart 2). A separate chart just for Chicago gives us a scaled look at how much it has collected (Chart 2).



Chart 1. Amount of yard waste collected by each city's sanitation programs from 2007 to 2016.



Chart 2. An in-depth look at Chicago's yard waste collection over the past decade.

Table 1 below gives comparisons of Chicago's average yard waste collection over the past 10 years. Controlling for population, Chicago still has the worst rate among all cities listed, recycling only 1.2 lbs of yard waste per year. This pales in comparison to Singapore residents, who pick up 134 lbs of yard waste per year, and even more to Portland residents, who recycle 726 lbs per person per year.

Measure	Chicago	Singapore	Los Angeles	Portland
Population	2,705,000	5,500,000	3,970,000	639,863
Average yard waste recycled (tons)	1,586.64	368,810.00	372,961.41	232,242.08
Average yard waste recycled per person (tons)	0.00059	0.06706	0.09394	0.36296
Average (lbs) recycled per person	1.17	134.11	187.89	725.91

Table 1. This chart shows the population of each comparative city and how much yard waste it recycles per person.

Why is Chicago doing so poorly?

The issues with Chicago's yard waste collection program are twofold: 1) there is confusion as to what happens with Chicago's yard waste and 2) collection of yard waste is a completely on-request, time consuming process.

In a recent article by WBEZ, reporters went in depth to figure out why Chicago's recycling and yard waste collection program was doing so terribly; especially considering that suburban cities' programs in Illinois were doing great. For example, in 2015, Oak Park, whose population is only 4% of Chicago's, collected over 3,000 tons of yard waste (and compost combined) while Chicago collected a measly 346 tons. When exploring the reasons as to why this is the case, deputy commissioner of the Streets and Sanitation Department of Chicago, Chris Sauve, noted that Oak Park's service is privatized, where residents pay for the type of yard waste removal they want (Oak Park has three different types). Sauve immediately dismissed ideas of implementing the same ideas in Chicago, saying that the street-sweeping method of yard waste would cause too much clutter in Chicago's narrow roadways and stickers that need to be paid for are not desirable for residents (Green, 2016).

A report in 2015, however, painted a different story. A WBEZ article published an article with the heading "Is Chicago Breaking a State Yard Waste Law?", opening speculation into the real destination of Chicago residents' yard waste. According to the article, residents are instructed to keep their yard waste next to their black garbage bins for pick up. Chicago has trucks meant for yard waste that it sends out. After a local resident kept his organic waste in a bag at the curbside for pick-up, however, he was disappointed to see his compost dumped into a garbage truck, ultimately destined for a landfill (Heffernan, 2015). This is where the distrust in the system stems from.

Chicago's current system coordinates dedicated bagged leaf and other yard waste collection trucks for the pickup of yard waste. For a resident to request a pickup, they are instructed to call 311, Chicago's non-emergency city services line. The yard waste should then be left in the alley or at the curb for collection, and bagged separately from other waste in the black cart and/or blue cart. The Streets and Sanitation Department then sends out a truck to collect the yard waste once it receives the request. The city's online website directs residents to Chicago's Recycle by City page to find out what is and isn't allowed to be recycled as yard waste. According to the website, yard waste consists of leaves, grass clippings, branches, brush, clippings from shrubbery, and garden waste, but does not include dirt, rocks, or gravel.

In terms of its on-demand disposal system, Chicago seems to be in the minority. For the purpose of this proposal, we examined the recycling and yard waste disposal methods of three other cities around the world-- Los Angeles, California, Portland, Oregon, and Singapore City, Singapore. All three of these cities have an established weekly pick-up process for yard waste along with their regular garbage and recycling. For example, Portland's composting program *Portland Composts!* has been very effective in diverting household compost items *and* yard waste from landfills. Under the program, all residents in Portland have three bins: a black one for

landfill garbage, a blue one for recycling and a green one for organic material and yard waste (City of Portland, Oregon, 2017). The same multiple multiple bin system is used in Los Angeles, California as well, as a part of their Blue Bin Recycling Program (LA Sanitation, 2017). In the past decade, Portland and Los Angeles have each recycled an average of 232,242 tons and 372,961. 41 tons of yard waste and compost respectively (State of Oregon, 2017; LA County Department of Public Works, 2017). Both Portland and Los Angeles boast landfill diversion rates of 60% or higher.

Singapore is also a great example of a recycling program done right. The city-state is actually more densely populated than Chicago, yet its landfill diversion rate is 61% compared to Chicago's 10%. Yard waste collection in Singapore is done through plastic or paper bags, much like Chicago. Residents leave their yard waste outside of their house next to their recycling bins for pick up.

Chicago Rake Up Program

The main suggestion that we propose is a system that incorporates Chicago's old system with its new system. Mimicking the *Portland Composts!* program, a new yard waste bin will be distributed to all of the households in Chicago. For the peak yard waste season, which we have defined as October through December, a truck sponsored by Republic Services will be sent out to collect all the yard waste on a weekly basis, like the garbage trucks do. These trucks that are used will be the same as the ones that will be used on an on-request basis. For the rest of the months of the year, the yard waste truck will be sent out on an on-request basis, much like the current system.

Requesting a Yard Waste Pickup

The method for requesting yard waste pick-up will also be improved. The current system instructs residents have to call 311 or fill out a tedious online form to have their yard waste picked up. Our suggested method aims to simplify this process. Instead having to call 311 and wait to be serviced by a representative, residents call our number and respond to an automated voice and requires one word commands to place a request. In addition, the website form to be filled out is simplified as well. When the program first rolls out, residents will register in our system and indicate whether they would like only on-demand service of yard waste disposal or, in addition to on-demand service, a weekly pickup service during the peak yard waste season as well.

Yard Waste Disposal Education

Along with the implementation of a new system, additional steps will be taken to make sure that residents know the benefits of recycling and composting, with special emphasis on the fact that it is illegal in the state of Illinois to dispose of yard waste with municipal waste. With the distribution of the bins, brochures will also be handed out, instructing residents on how to register for the service ticket and what you can and cannot put in the yard waste bins. In order to encourage residents to collect their yard waste, residents will be billed if their yard waste becomes excessive.

Facilities and Equipment

Trucks. Trucks meant for collection and disposal of yard waste. It will run every week during peak seasons and on-demand for the rest of the year.

Yard Waste Bins. To be used by residents to hold yard waste. Will be given out once to all initial residents of the program and any other request will be charged for the new bin.

Bags. To be used to carry extra yard waste when bin is full. It will be sold at a low cost in stores. Bags will be labeled with sponsoring companies' logos for advertisement. Residents must use paper bags, therefore any other yard waste bags used by residents must be bags that have been approved for holding yard waste.

Phone Line. In order for the pickup request to be simplified, a new phone line different from Chicago's 311 line will be started. It will be mainly automated, allowing residents to quickly set up tickets for their yard waste to be picked up or find out more information about the program.

Website Servers. A server will hold the website which will be responsible for ticket managing and scheduling request.

Personnel

Software Engineers. Software engineers are essential for the maintenance of this system, since the program is mainly run by automated systems. Maintenance also includes the website, automated phone line and social media.

Truck Drivers. Responsible for the pickup of yard waste. Will be hired according to seasonal needs.

Sales personnel. These persons will be responsible for distribution of black bins to residents and yard waste bags to shops for sales.

Yard Waste Disposal Company - The company responsible for recycling the collected yard waste safely and reliably.

Sponsoring Companies - Sponsoring companies will help finance the program. Their sponsorship will involve purchasing of bins, and initial setup of the system program and website.

Budget

In this section we compare budgets of other cities' recycling programs to Chicago's Blue Cart Recycling Budget, and to *Chicago Rake Up* program and break down.

Singapore(2013/2014): \$700,000

Portland (2016): \$3,500,000

Los Angeles (2014/2015): \$170,269,832

Chicago (2016): \$113,671,498

Chicago Rakes Up: First year total budget - Approximately \$116,659,200

Following year's total budget - Approximately \$92,659,200

The city of Chicago is responsible for collecting garbage from 600,000 households. The city supplies plastic 96-gallon garbage carts to single-family residences and apartment buildings of four units or less for free. No data was available on the cost or the vendor of these cans. The *Chicago Rakes Up* program plans to distribute similar sized garbage cans for yard waste collection its first year to establish a system and following years work from such system lowering costs.

Breakdown of costs for facilities and equipment:

Trucks - The trucks used for the program would be the ones Republic Services already use

Yard Waste Bins - \$40 each, \$24 million total (Initial phase cost)

Bags - \$3 each, \$2 million total for each household plus additional needed

Phone Line - Approximately \$100 per month, \$1,200 per year

Website servers - Approximately \$3,000

Software Engineers - \$50,000 per year, 3 or 4 needed total of \$200,000

Truck Drivers - \$35,000 per year, 5 or 6 needed total of \$210,000

Sales Personnel - \$40,000 per year, 5 or 6 needed total of \$240,000

Yard Waste Disposal Company - National average of \$150 per unit, \$90 million total

Sponsoring Companies - National Average of \$5,000

Conclusion

Through the implementation of the *Chicago Rakes Up* program, we are confident that Chicago will see an increase in the amount of yard waste being collected by its residents. The program that we are proposing implements the the aspects of Chicago's Blue Cart Recycling Program that works, with some additions to increase the overall collection of yard waste greatly. In addition, residents can now be sure that they are actually recycling their yard waste, since the company that we suggest partnering with, Republic Services, has been shown in the past to consistently and safely discard of yard waste.

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