

RIVERDALE PARK



Composting - University of Maryland Capstone

After fruitful discussions between the Green Teams of the Town of Riverdale Park (TRP or Town) and University Park, TRP may finally have a chance to make composting in TRP a reality! The proximity of TRP to the University of Maryland (UMD) often leads to symbiotic relationships between the two entities. In one beneficial example, students from UMD's Environmental Science and Policy Program, since June 2017, conducted a capstone project that included a survey to support their feasibility study for the adoption of a Town composting program. Although the Town has yet to choose a plan for implementation, TRP's Green Team is hopeful that the Town will have a program in place soon to turn food scraps into nutrient-rich soil to sustainably grow our fruits, vegetables, and flowers.


Two recommendations were given based on the results of the survey. The first recommendation was to use [The Compost Crew](#) which is an "all-in-one" service. This service is easily implemented and fulfills the needs of those surveyed for weekly pick-up and bin maintenance. This recommendation comes with the annual cost per household of \$112.20 for the first year and \$92.64 after the first year. The second recommendation was a lower-cost option, the "at-home" composting technique which has very low cost after the first year and utilizes a "hands-off" approach for TRP. An additional benefit is that residents can use the generated nutrient-rich soil. This option would provide equipment to residents and inform the public how to start and maintain their compost. The annual cost would be \$70.63 per household.

The UMD survey had 43 respondents - 69% of whom responded favorably towards a TRP Composting Program. The results of the survey found that the citizens of TRP are interested in a composting program and that the Town could offset costs by charging some fee, preferably a monthly fee of less than \$10. They also determined that the Town could reduce costs by having a central location set aside for composting drop off, but this would only work if it is a relatively convenient location. If the Town were to pursue a pickup plan instead of a drop-off plan, a weekly pickup was preferred. The students also offered several different plans that varied based on acceptable materials and associated costs. The options from the attached CAPSTONE project presentation are summarized in the table below. TRP's Green Team hopes to further the development of the Town's composting program in collaboration with other municipalities along the Route 1 corridor, since a lot of interest has been expressed by several neighboring municipalities in this area, including neighboring University Park. Additionally, College Park has implemented a "[Food Scraps](#)" program and Hyattsville recently began a [curbside composting](#) program that TRP may be interested in collaborating with.

RIVERDALE PARK

Composting Program	Program 1: RP owned Service (Leaf Litter Only)	Program 2: RP owned Service (Leaf Litter & Food Waste)	Program 3: Private Company "Compost Crew"	Program 4: At-home Composting	Program 5: Composting at the Community Garden
Participants	1300	1300	1300	1300	130
Tipping Fee (Estimated Annual Cost)	\$576	\$55,030.68	All-in-one fee	-	-
Curbside Equipment Cost (Annual)	-	\$22,810.23	-	\$91,466.92	\$5,971.16
Other Equipment Cost (Annual)	-	-	-	-	\$2,373.80
Labor (Annual)	\$10,584	\$13,104	-	-	-
Transportation (Annual)	\$19,752.66	\$65,539.46	-	-	-
Gross Estimated Cost (Annual)	\$30,912.66	\$162,014.14	\$120,432	\$91,466.92	\$8,344.96
Estimated Benefit (Annual)	\$23,400	\$192,720.22	\$192,720.22	\$192,720.22	\$19,272.02
Net Cost (Annual)	\$7,512.66	-\$30,706.08	-\$72,288.22	-\$101,253.30	-\$10,927.06

Annual Composting Costs and Benefits by Program

A decorative graphic on the left side of the slide. It features a large, light green circle at the top left, a smaller dark green circle at the top center, and four green leaves of various sizes and shades (from light to dark green) arranged in a cluster. The leaves have visible veins.

Riverdale Park Composting Project

Alexis Gueco, Benjamin Lee, Cherisse
Mathis, Emma Ericksen, Liz Johnson,
and Sofia Perkins



Objectives

- Objective 1: Survey residents of Riverdale Park to gauge interest in different types of composting programs, willingness to pay for composting, as well as other relevant information.
- Objective 2: Conduct a cost-benefit analysis of different methods for collecting, transporting and composting the organic waste of Town residents.
- Objective 3: Create an educational pamphlet about composting.



Background

Composting



- Composting is nature's way of recycling organic waste such as food scraps, lawn trimmings, paper, etc. through natural biological processes.
- Environmental Benefits:
 - Reduces methane emissions in landfills
 - Minimizes need for chemical fertilizers
 - Improves soil quality
 - Increases microbial biodiversity

Current Food Waste/Landfill Use

A decorative graphic on the left side of the slide features several green leaves of different sizes and shades, some with detailed vein patterns. Interspersed among the leaves are light blue circles of varying diameters, creating a modern, organic aesthetic.

- MD residents generate 30% more per capita solid waste than the national average
- About 24% of the waste produced in the US could be composted
- About 3.5 lbs of food is wasted per person every week
- Waste from residents end up:
 - Being burned in incinerators
 - Going to landfills (which are nearing capacity within the next 30 years)

Sustainable MD Certification



- Recognition as a certified sustainable community allows Riverdale Park to promote environmentally favorable practices and lower service costs
- Required to recertify every 3 years or sooner
 - Last recertified in 2017; recertification due 2020
- Composting program would be an added benefit for the recertification
 - Opportunity to be included as an Innovative Demonstration Project or Green Team initiative



Examples of Composting

- University Park - curbside compost pick-up
- College Park - food waste drop-off program
- Chevy Chase - Compost Crew pick-up service



Many municipalities in Prince George's County take compost to the County's Organics Composting Facility in Upper Marlboro



Options to be Considered

1. Prince George's Organics Composting Facility program to compost leaf litter only
2. Prince George's Organics Composting Facility program to compost leaf litter and food waste
3. Private company ("The Compost Crew" as an example) to compost leaf litter and food waste
4. Backyard composting program
5. Compost at the community garden site



Results

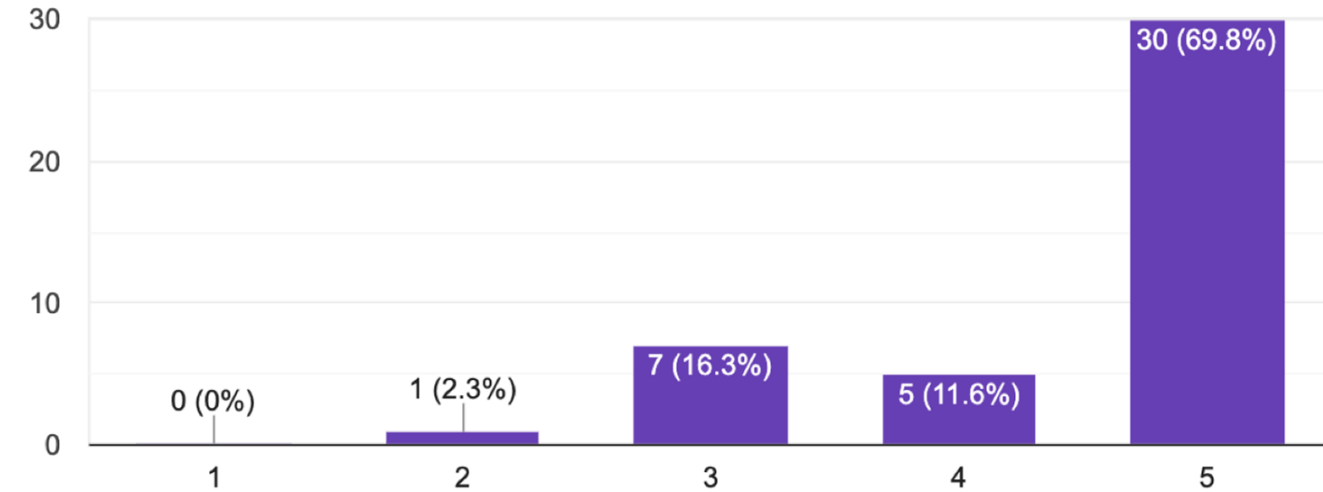
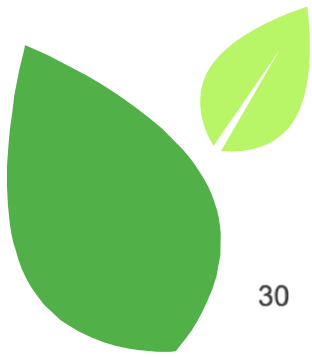
The background is a solid light green color. On the left side, there are several decorative elements: a large, detailed green leaf with visible veins, a smaller solid green leaf, and several overlapping circles in various shades of green (light, medium, and dark).

Objective 1: Survey

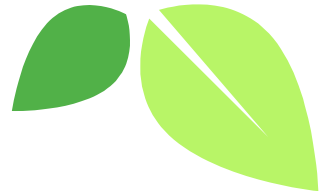


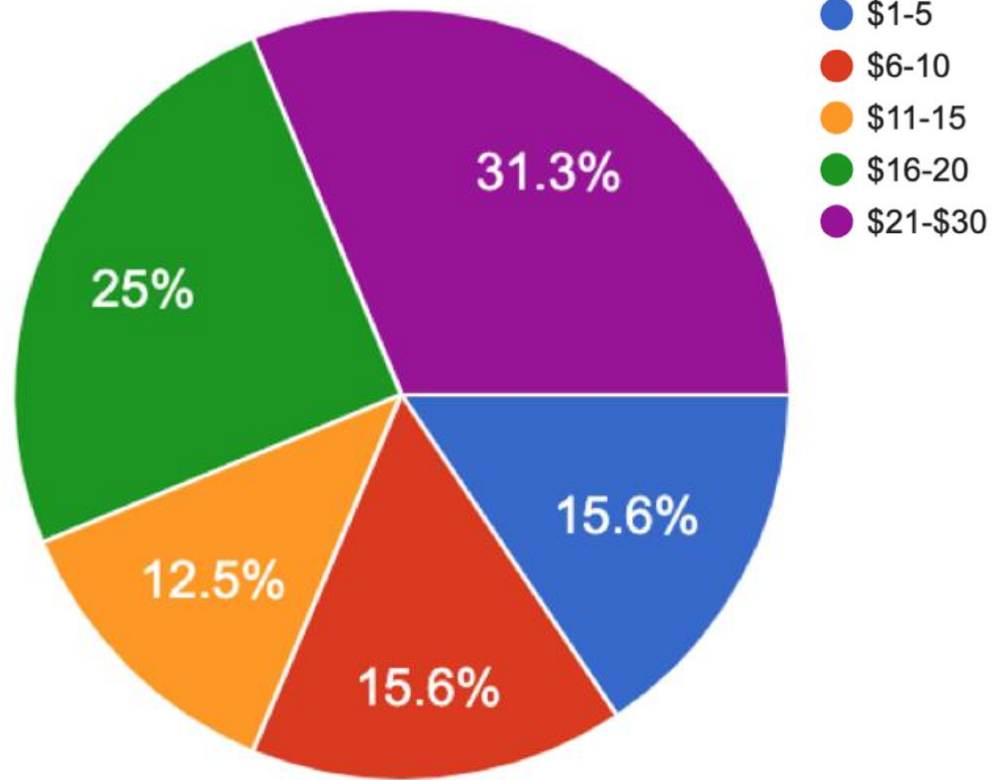
Survey

- The goal of the survey was to determine residents' interest in a composting program and their willingness to pay for the program.
- Survey had 15 questions and it took about 10 minutes to complete
- Survey had 43 respondents
- Survey took place via Riverdale Park's Facebook, Riverdale Park Elementary's listserv, Whole Foods, Megamart, the Riverdale Park Farmer's Market, and Riverdale Park's Dog Park

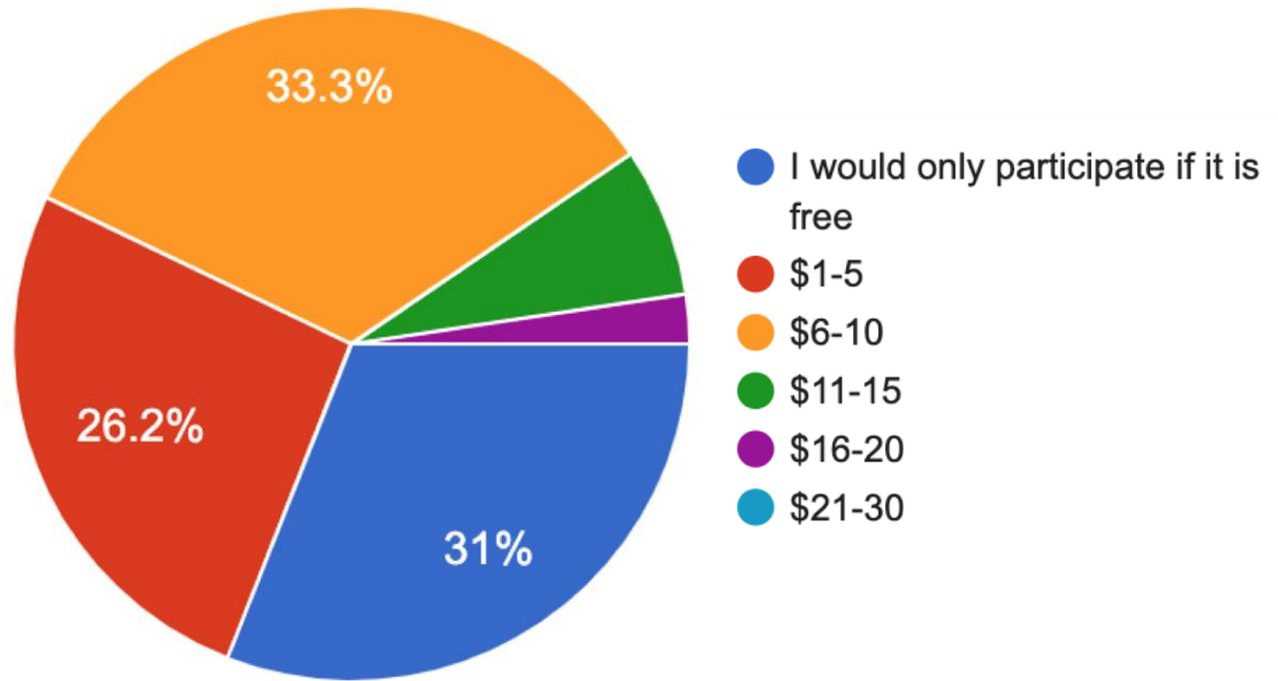


Responses to “How interested would you be in a Riverdale
Park composting program?” n=43

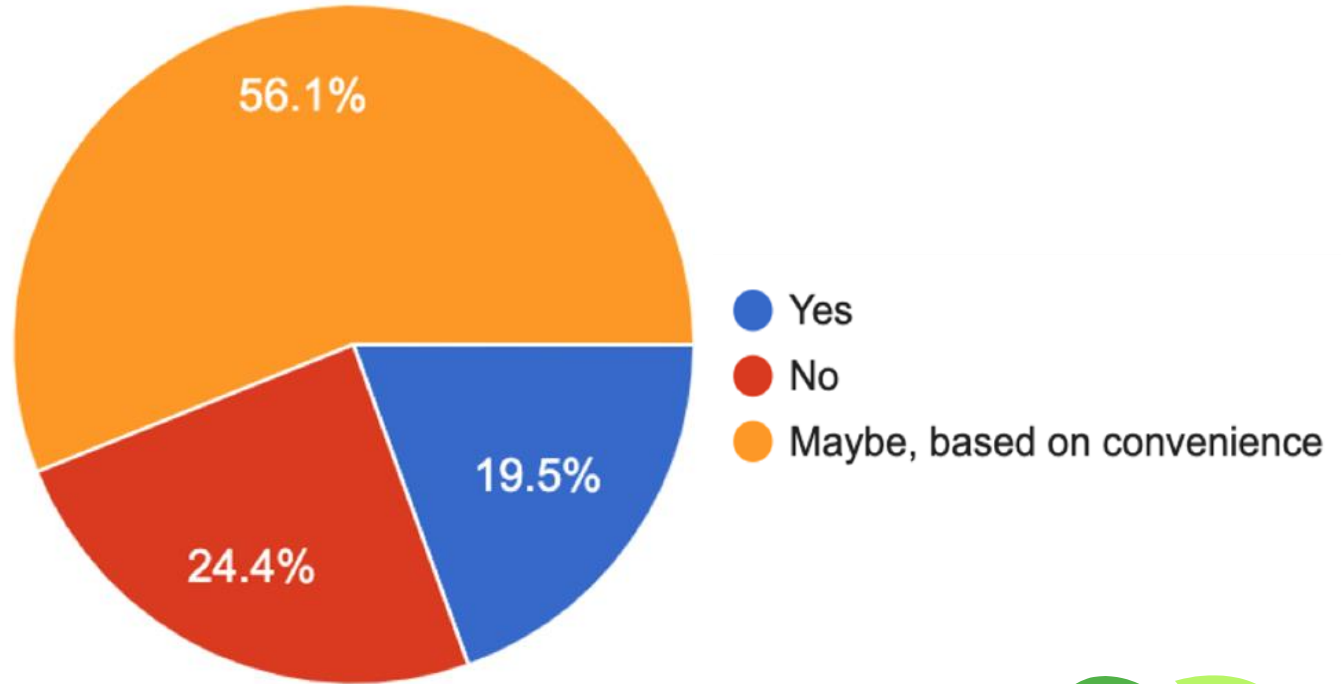




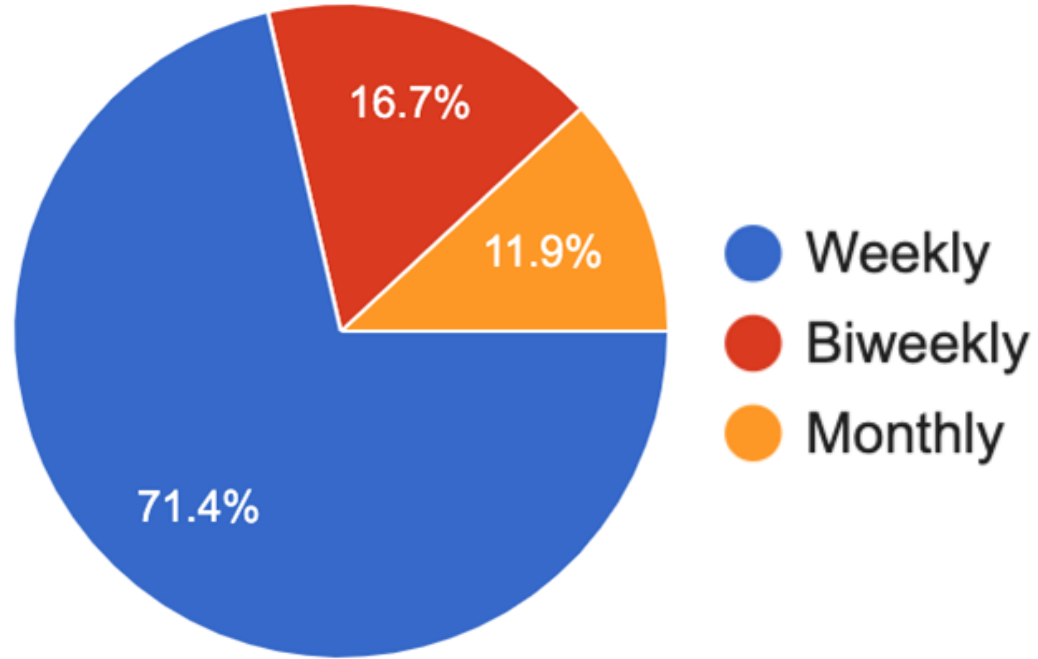
Willingness to pay for composting starting materials. n=32



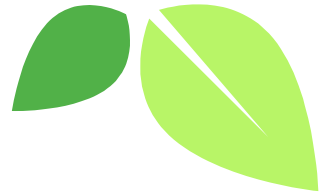
Responses to “How much would you be willing to pay monthly for composting collection?” n=42



Responses to “Would you be willing to drop off compost at a designated location.” n= 41




Responses to “How often would you want compost to be picked up from your house?” n=42





Survey Overall Conclusion

- Residents of Riverdale Park are interested in a composting program.
- The Town could offset costs by charging some fee so long as the monthly fee is less than ten dollars.
- The Town could reduce costs by having a central location set aside for composting drop off, but this would only work if it is a relatively convenient location.
- Composting pickup should be scheduled weekly if pickups are occurring from individual households rather than a central drop off location

The background is a solid light green color. On the left side, there are several decorative elements: a large, detailed green leaf with visible veins, a smaller solid green leaf, and several overlapping circles in different shades of green (light, medium, and dark).

Objective 2: Cost-Benefit Analysis



CBA Methodology

- Project the community's food waste (including meat & dairy) and non-food waste
- Obtain the Town's financial information
- Calculate the direct economic and environmental benefits of each composting service
- Compile the information into a cost-benefit table for the final report



CBA: PG Organics (Leaf Litter only)

- Hands-on approach to town-wide composting
 - August-January
 - Weekly curbside pickup
- Cost to Riverdale Park:
 - One 2020 Kenworth Rear Loader Truck & maintenance
 - Labor (3 people)
 - Diesel costs
 - 13-gallon bins for all residents
 - Tipping fees
- Annual cost per household → **\$23.78**



CBA: PG Organics (Leaf Litter & Food waste)

- Hands-on approach to town-wide composting
 - Weekly curbside pickup
- Cost to Riverdale Park:
 - Two 2018 Heil Side Loader Trucks & maintenance
 - Labor (2 people)
 - Diesel costs
 - 13-gallon bin & biobags for all residents
 - Tipping fees
- Annual cost per household → **\$124.63**



CBA: Compost Crew

- A private company collects town-wide compost
- Used by Chevy Chase
- All-in-one pricing system including:
 - Weekly pickup
 - 5-gallon bins for all residents
 - Bin liners & replacement service
 - Free website
- Annual cost per household →
\$112.2 (first year)
\$92.64 (after the first year)



CBA: At-Home Composting

- Hands-off approach to town-wide composting
 - Provide equipment
 - Inform the public
- Providing equipment for households
- Annual cost per household → **\$70.63**



CBA: Composting at the Community Garden

- Smaller scale option
- Estimated 10% voluntary participation rate (The Compost Crew) → 130 households
- Providing equipment for households → \$45.93 per household
- Purchasing community composting equipment for the space → \$18.26 per household
- Annual cost per household → **\$64.19**




CBA: Environmental Benefits

- 0.46263 tons of compostable waste is produced per capita
 - 24% of landfilled waste that is compostable
 - 1.8505 tons of landfilled waste
- 0.67 metric tons of carbon equivalent emissions saved
 - Average household size of 3.66
 - 1.42 tons of carbon equivalents emissions saved per HH
- EPA's social cost of carbon → \$42 per metric ton
- 1.42 tons = 1.288202 metric tons
- Estimated savings associated with GHG reduction as a result of composting → **\$54.05** per household per year



CBA: Economic Benefits

- An estimated 0.46263 tons of compostable waste is produced per capita in the County
 - 1.6932258 tons per household
- \$45 garbage tipping fee per ton of waste landfilled
- Estimated savings in garbage tipping fees → **\$76.20** per household per year



Composting Program	Program 1: RP owned Service (Leaf Litter Only)	Program 2: RP owned Service (Leaf Litter & Food Waste)	Program 3: Private Company "Compost Crew"	Program 4: At-home Composting	Program 5: Composting at the Community Garden
Participants	1300	1300	1300	1300	130
Tipping Fee (Estimated Annual Cost)	\$576	\$55,030.68	All-in-one fee	-	-
Curbside Equipment Cost (Annual)	-	\$22,810.23	-	\$91,466.92	\$5,971.16
Other Equipment Cost (Annual)	-	-	-	-	\$2,373.80
Labor (Annual)	\$10,584	\$13,104	-	-	-
Transportation (Annual)	\$19,752.66	\$65,539.46	-	-	-
Gross Estimated Cost (Annual)	\$30,912.66	\$162,014.14	\$120,432	\$91,466.92	\$8,344.96
Estimated Benefit (Annual)	\$23,400	\$192,720.22	\$192,720.22	\$192,720.22	\$19,272.02
Net Cost (Annual)	\$7,512.66	-\$30,706.08	-\$72,288.22	-\$101,253.30	-\$10,927.06

Annual Composting Costs and Benefits by Program

The background is a solid light green color. On the left side, there are several decorative elements: a large, semi-transparent light green circle in the upper left; a smaller, solid medium green circle below it; a dark green leaf shape with a white vein pattern in the lower left; and a bright lime green leaf shape at the bottom center. A large, detailed green leaf with prominent veins is positioned in the upper center, partially overlapping the other elements.

Recommendations



**COMPOST
CREW**

good to grow

Primary Recommendation: The Compost Crew

- "All-in-one" service
- Easy implementation
- Weekly pick-up and bin maintenance
- Meets most of the resident's needs



Second Recommendation: “At-home” composting

- Very low cost after the first year
- “Hands-off” approach
- Residents can use the soil that is generated



Objective 3: Pamphlet

COMPOSTING IN RIVERDALE PARK



Composting is the process of recycling organic materials like food scraps and yard waste into a nutrient-rich soil.

Why should I compost?

- Reduces organic waste in landfills
- Creates nutrient-rich soil
- Boosts plant health in gardens
- Lowers greenhouse gas emissions
- Makes the town more eco-friendly
- Improves community involvement
- Sets a sustainable example for children

How to compost in Riverdale Park?

- Riverdale Park is teaming up with the Compost Crew -
- Sign up and receive your compost bin and liners
 - Collect food scraps in your home
 - Compost is collected from your curb weekly!

What can I compost?



Fruits and Veggies



Meat and Bones



Egg Shells



Dairy, Cheese, Butter



Breads and Pastas



Leaf Litter and Yard Waste

FAQ's

What is the Compost Crew?

The Compost Crew is a local compost pick-up service that serves towns and cities in Maryland and the DC area. Once the program is set up in Riverdale Park, you can sign up on the Compost Crew website. They will provide you with a compost bin and liner. You will fill up your compost bin with food scraps and organic waste. The Compost Crew will collect the waste from your bin each week (on a select date) from your curb. To find out more, visit <http://compostcrew.com/>

Where is the compost going?

All compost is taken to the Prince George's County Organics Compost Facility in Upper Marlboro, MD.

Can I compost even if I live in an apartment?

Yes! Compost bins can be placed inside or outside the apartment complex for you to use.

Will composting make my house smell bad?

It shouldn't! If you keep a lid on your compost and regularly move it outside for pick up, there should be no odor. If it begins to smell, try moving it outside or into a cooler, drier space in your living space.

Can I compost pet waste?

No. While you can compost pet waste in a specific way, the town of Riverdale Park will not be composting pet waste with their program.

What are all the things I can compost?

Egg shells, fruit peels, vegetable scraps, coffee grounds, tea bags, breads, pastas, meat, bones, fish, dairy, yogurt, cheese, butter, leaf litter, yard clippings, dryer lint paper towels, napkins, soiled paper products, compostable products ("compostable" forks, straws, etc.)

What can I definitely NOT compost?

Pet or human waste, aquarium waste, plastics, aluminum foil, , candles, wax, glass, cigarette butts, cosmetics, diapers, wood ash

If you have any questions, please contact Kevin Simpson at ksimpson@riverdaleparkmd.gov

The background is a solid light green color. On the left side, there are several stylized green leaves of different sizes and shades of green. Some are solid green, while others have a detailed vein pattern. There are also several light green circles of different sizes scattered around the leaves.

Limitations and Future Recommendations



Limitations

- Small survey size
- Slight difficulty in collecting CBA data
- CBA based on leaf litter collection from residents



Future Recommendations

- Small scale start-up compost service to gauge resident input and interest
- Circulate pamphlet and do a more thorough survey to reach a larger audience



Thank You!