Piloting Food Waste Collection in Grand Teton National Park 2019

A collaborative step toward municipal food waste composting in Teton County, Wyoming and Zero Landfill National Parks

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Figure 1. A boater in Oxbow Bend, Grand Teton National Park.

Executive Summary

The final year of the food waste collection pilot was once again a collaborative endeavor of the Subaru of America-sponsored Zero Landfill Initiative in Grand Teton National Park and the Road to Zero Waste in Teton County, Wyoming. These programs share the goal of reducing the amount of waste deposited into landfills. In continued pursuit of this goal, both programs still identify food waste composting as a critical strategy by which to achieve waste reduction targets. The 2019 pilot project met and exceeded the goal of 200 tons to be collected. The final tonnage collected topped out at 247 tons of food waste.

Teton County will implement a commercial food waste composting program by summer 2020, upon completion of a landfill closure and retrofit of existing structures at the county facility. Currently, no large-scale food waste composting services exist in the vicinity. WyoFarm Composting in Thayne, Wyoming, has expanded the capacity of its commercial and residential food waste collection. This expansion allowed the third season of the pilot to use a single compost facility, resolving strategic planning issues when splitting the compost between two composting facilities.

The last three seasons of the composting collection pilot have been a hands-on learning experience for setting into motion the implementation of a successful collection and composting program at the Teton County Transfer Station. Every season has provided another opportunity to "dial in" further to ensure a smooth beginning to the program. The County's municipal composting program owes a debt of gratitude towards the pilot program and all its lessons learned.

Food Waste Collection Pilot: 2019 Summary

- 5 months: May - October 2019
- 2 Concessionaires: Grand Teton Lodge Company and Signal Mountain Lodge
- 9 Collection Sites
- 0 complaints of food waste odor
- 5-10% contamination rate
- 247.12 total tons of food waste composted rather than landfilled
- Lessons learned that will inform the 2020 implementation of a regional food waste composting program in Teton County.

Thank you 2019 Sponsors and Partners

Grand Teton Lodge Company | Grand Teton National Park
National Parks Conservation Association | Recycle Across America
Signal Mountain Lodge/Forever Resorts | Subaru of America
Teton Conservation District | Teton County ISWR | WestBank Sanitation
Yellowstone National Park | WyoFarm Composting

Introduction and Background

Figure 2. WestBank Sanitation unloading food waste.

The third and final year for the pilot program to collect food waste from Grand Teton National Park (GTNP) and divert material from the landfill wrapped up in October of 2019. Food waste is targeted for landfill diversion by both GTNP and the surrounding community of Teton County, Wyoming, which has adopted a Road to Zero Waste Plan. The county's plan includes a goal of diverting 60% of waste from the landfill by the year 2030. Both Teton County and GTNP intend to capture organic waste material to compost and use as a nutrient rich soil amendment, rather than landfill waste.

The first year of the pilot program (2017) proved successful with the collection and composting of 73.3 total tons (146,620 pounds) of food waste. The second year continued the success of the first year by collecting and composting 149.53 tons (299,060 pounds). Challenges overcome during the pilot's inaugural year included the lack of space for bins, and optimization of bin sizes and bag types. These lessons created a strong foundation from which to set new goals and launch into a the final year. The 2019 goals aimed to capture 200 tons of material, expand certain aspects of the collection within the existing concessionaire networks and improve on program education and logistics. Year three is considered another significant advancement toward municipal-scale food waste compost collection in Teton County, Wyoming.

A Focus on Food Waste

Local efforts to minimize landfill-bound material continues to target food waste. Landfilling organics not only results in the loss of nutrients, but can also contribute to the production of leachate, as well as methane - one of the most potent greenhouse gases. The ability to compost food waste preserves nutrients and counteracts the potential for environmental harm.

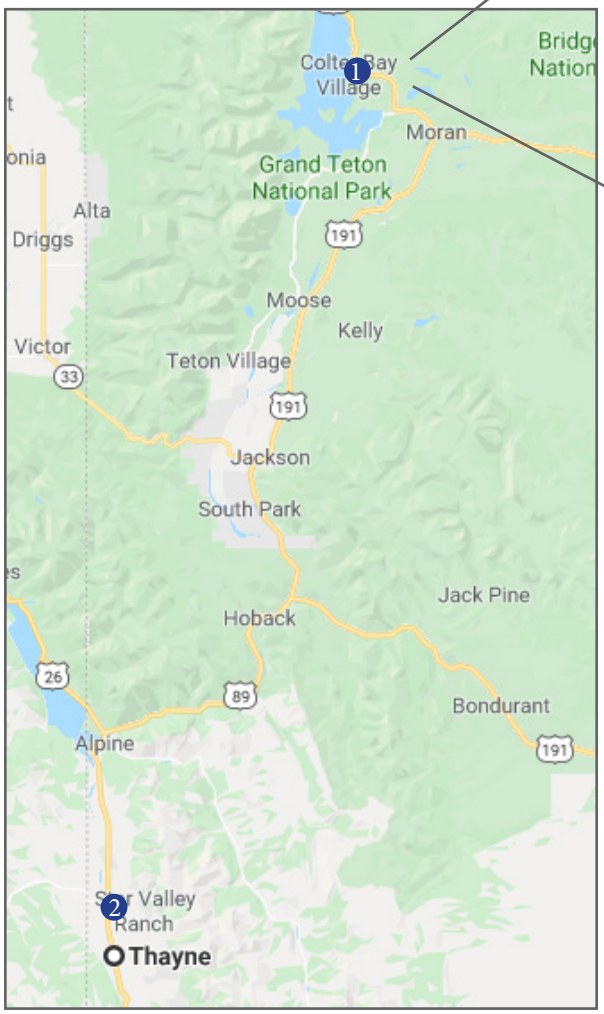
Another reason food waste is singled out when it comes to minimizing landfill deposits is that it constitutes a significant portion of the waste stream. According to the 2013 Wyoming Solid Waste Diversion Study, food constitutes approximately 20% of the state's waste stream. A 2014 waste characterization study in GTNP revealed that more than 40% (twice the state average) was attributed to food. Through its lodging, restaurants, retail, campgrounds and employee housing operations, GTNP generates more than 489 tons of food waste and 136 tons of non-recyclable/compostable paper per year. This number is in keeping with waste generation trends in hotels and hospitality operations.

Program Details for Year Three

Several changes were made in year three to accommodate increased volumes and an expansion of available composting services in the region. Food waste collection began May 9, 2019 at one site. All nine sites were fully operational by May 21.

Collection Sites

Eight sites were included in the 2019 collection. Material from Jenny Lake Lodge, Colter Bay Ranch House Restaurant, Colter Bay General Store, Headwaters Lodge/Flagg Ranch, Jackson Lake Lodge, Jackson Hole Golf and Tennis, Signal Mountain Lodge, and Leeks Pizzeria's materials were all delivered to WyoFarm Composting in Thayne, Wyoming.



10 miles

1. Grand Teton National Park
2. WyoFarm Composting, Thayne, Wyoming

5 miles

1. Flagg Ranch
2. Leek's Marina and Pizza
3. Colter Bay - Ranch House and General Store (2 collection sites)
4. Jackson Lake Lodge
5. Signal Mountain Lodge
6. Jenny Lake Lodge
7. Jackson Hole Golf and Tennis

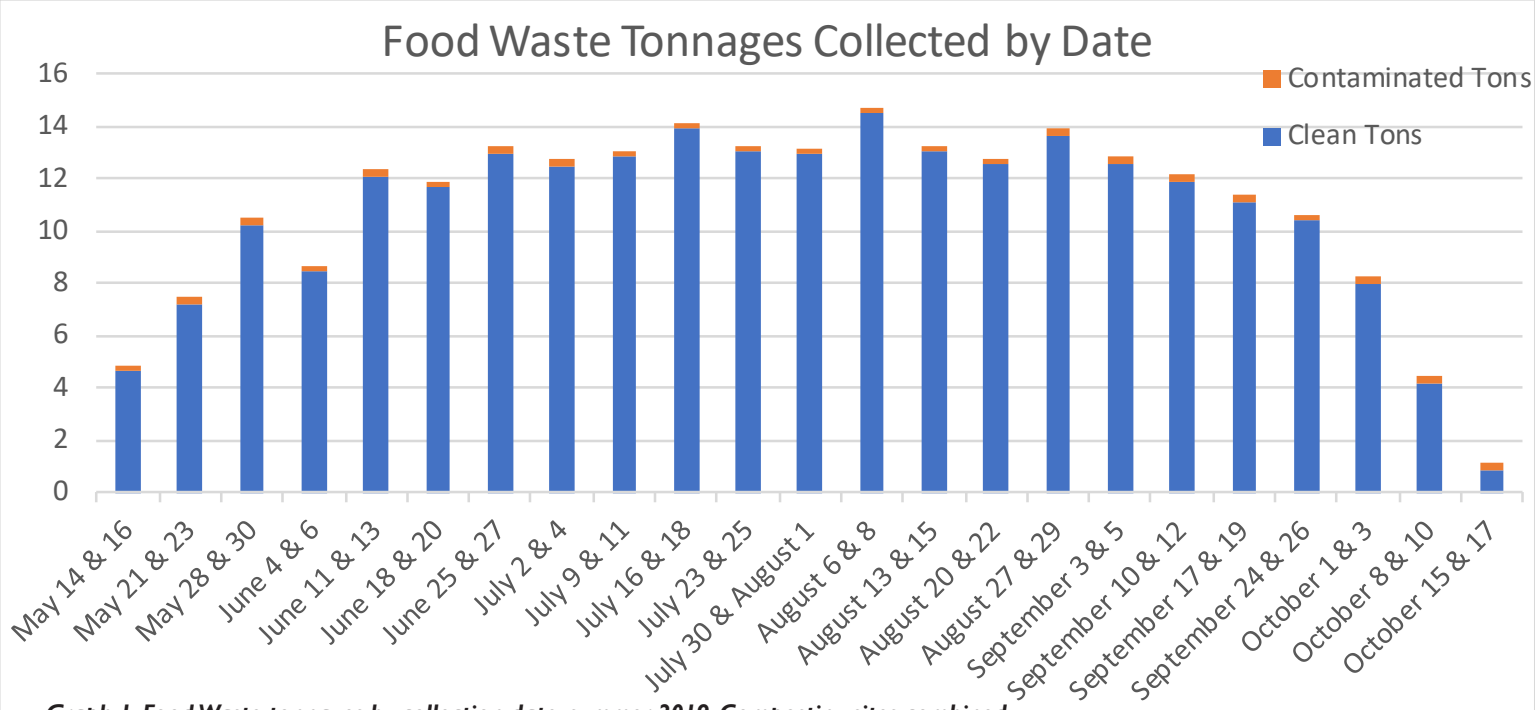
"2019 was a massive success because of the passion and dedication of our team. Achieving a contamination rate of less than 4% at our scale and complexity is no small feat and highlights the strength and importance of our zero waste culture, education, and training." Jon Dyer, Grand Teton Lodge Company

Tonnages and Contamination

A total of 247.12 tons (494,240 pounds) of food waste was sent to WyoFarm Composting in 2019. This is 100 tons more than the 2018 pilot, and nearly 50 tons more than the 2019 goal of 200 tons. Concessionaires increased capacity at many sites, specifically Jackson Lake Lodge, who tripled capacity in 2019 from 2018. Jackson Hole Golf and Tennis* was also brought on as a new site in 2019. Contamination rates fell from 11% in 2018 to 4% in 2019. Data regarding contamination is anecdotal this year because WyoFarm Composting did not weigh contamination removed from the food waste prior to landfilling. Weight of contamination was calculated to be 395 pounds per load, which is the average weight of a roller container used for collecting trash at WyoFarm Composting. WyoFarm Composting reported 395 pounds of trash were pulled from one load on June 25 and concessionaires were notified. WyoFarm Composting estimated that 395 pounds of contamination were pulled from every load delivered during the 2019 season. Wyofarm Composting did not report this contamination to ISWR, however did communicate with concessionaires to address contamination issues. Trash pulled from food waste sent to the landfill totaled around 11.04 tons, or 22,080 pounds, brining the pilot's contamination level to 4%.

While a lower contamination rate is room for celebration, the issue of contamination is an ever present challenge for composters. "I'd consider this major contamination," Curtis Haderlie of WyoFarm Composting commented, "all of which is removed by hand once the composting process has begun." Curtis explained that removing contamination is much easier to remove out of an active compost pile rather than when the food waste comes in fresh. Fresh food waste is wet and odorous, while an active compost pile dries out, is less odorous and contamination is much more obvious. Wyofarm Composting takes contamination and it's potential harm seriously. WyoFarm Composting's finished compost is used to fertilize the farm's vegetable and flower beds.

*Jackson Hole Golf and Tennis is owned by Vail Resorts and not located in Grand Teton National Park.



Graph 1. Food Waste tonnages by collection date, summer 2019. Composting sites combined.

Food Waste Only

Based on feedback gathered from other municipal composting operations and the overall success from the 2017 /18 pilot program, Teton County chose to continue to restrict collected materials to food waste, paper towels, and napkins. The introduction of other materials, such as compostable cups, plates and utensils, adds confusion and invites increased contamination.

The End of the Pilot and the Beginning of a New Program

A grand total of 469.8 tons (939,600 pounds) of food waste were diverted from the landfill and instead collected and composted over the last three seasons of the pilot. Each pound educated all involved on how to best manage a food waste collection and composting program. Most importantly, Teton County is walking away from the pilot and into it's own food waste collection and composting program with the tools and lessons learned to have a successful program from the beginning. Without the generous support of partners and sponsors, Teton County may have been entering into a food waste collection and composting program without the tools and experience gained from the pilot. The concessionaires also feel the positive impacts of the pilot."The pilot program continues to be a major improvement in our operations and waste diversion efforts, one that has allowed us to make our greatest diversion efforts in decades," Jason Ryan of Signal Mountain Lodge commented.

Figure 3. Steaming compost.

In spring of 2019, TerraFirma Organics was selected as the County's composting contractor. TerraFirma Organics is also the yard waste composting contractor at the Teton County Trash Transfer Station. WestBank Sanitation will be the food waste hauler through summer of 2020 via an extension on the current hauling agreement. Teton County's program is expected to begin in spring or summer of 2020. The Interim Transfer Station, constructed in 2017, is being retrofitted to meet the needs of food collection. Beginning in winter of 2020, education efforts will begin with early adopting municipal partners. Staff at these select locations will be thoroughly trained and educated to ensure a clean, viable product.

"The pilot program continues to be a major improvement in our operations and waste diversion efforts, one that has allowed us to make our greatest diversion efforts in decades," Jason Ryan of Signal Mountain Lodge.