

# PILOTING FOOD WASTE COLLECTION

in

## GRAND TETON NATIONAL PARK

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



## Executive Summary

The 2017 food waste collection pilot came together at what could be called the intersection of the Road to Zero Waste in Teton County, Wyoming and the Subaru of America sponsored Zero Landfill Initiative (ZLI) in the National Parks. These programs share the goal of reducing the amount of waste deposited into landfills. In pursuit of this goal, both programs identified food waste composting as a critical strategy by which to achieve waste reduction targets.

Initially, however, targeting food waste for diversion proved difficult. Food waste composting services in Teton County are not planned for implementation until 2021, awaiting the completion of a landfill closure process at the County facility. No other opportunities for large scale food waste composting services exist in the vicinity. Refusing to give up, program organizers pursued a number of alternative technologies. One option, in particular, focused on the installation of in-vessel composting systems within Grand Teton National Park (GTNP), but these types of systems in the National Park raised concerns with wildlife managers. With continued persistence, organizers eventually expanded their search area and identified an opportunity at the West Yellowstone Composting Facility in West Yellowstone, Montana. Although a significant distance away, this facility was willing to accept food waste from Grand Teton National Park and, in fact, welcomed the opportunity for their own testing of increased volumes of food waste. Organizers worked quickly to gauge feasibility, plan logistics and compile the necessary project proposals and agreements within a quick, two-month time period. This innovative solution and rapid coordination were critical to the progress that was made in this first year of the pilot program.

This five-month effort resulted in the collection of over seventy-three tons of food waste from seven concessioner managed locations within GTNP. Achievements included the successful mastery of the transportation, permitting, special permissions, loading dock schedules, storage space limitations, wildlife considerations and all other logistics required of a large-scale operation within the sensitive natural landscape of the Greater Yellowstone Ecosystem.

The 2017 project is considered a success based on its mobilization of area resources toward a common goal; as well as its identification and analysis of lessons learned. This effort generated invaluable data and discoveries that will inform the 2018 pilot process and carry the region into full implementation of food waste composting services by 2021.



## Food Waste Collection Pilot: 2017 Summary

- ▶ 5 months: May - October 2017
- ▶ 2 Concessioners: Grand Teton Lodge Company and Signal Mountain Lodge
- ▶ 7 Collection Sites
- ▶ 1 pickup per week
- ▶ 0 wildlife impacts
- ▶ 0 complaints of food waste odor
- ▶ 1% contamination rate = 99% material recovery
- ▶ 73.3 total tons of food waste composted rather than landfilled
- ▶ Countless lessons learned that will inform the 2021 implementation of a regional food waste composting program in Teton County



# Thank You 2017 Sponsors and Partners

Grand Teton Lodge Company

Grand Teton National Park

National Parks Conservation Association

Signal Mountain Lodge/Forever Resorts

Subaru of America

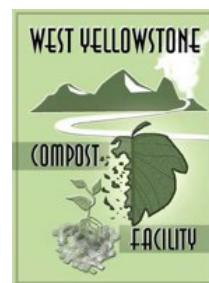
Teton Conservation District

Teton County ISWR

West Yellowstone Composting Facility

Westbank Sanitation

Yellowstone National Park



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Photo Credit: National Park Service

# Piloting Food Waste Collection in Grand Teton National Park

## Introduction and Background

Capturing and composting non-edible food waste is a priority in the waste diversion strategies of both Teton County, Wyoming and Grand Teton National Park (GTNP). This summer's pilot project offered an opportunity for both entities, and their supporting partners, to investigate the feasibility of a large-scale commercial food waste collection. No parameter was too small or too large. Collaborators worked together to consider everything from internal kitchen operations to wildlife concerns and multi-state transportation negotiations. The information gathered will serve as the foundation for the implementation, by 2021, of food waste composting in Teton County to service GTNP as well as the surrounding Jackson Hole community.

The National Parks Zero Landfill Initiative (ZLI) is a collaboration between Subaru of America, Inc., the National Parks Conservation Association (NPCA), the National Park Service (NPS) and park concessioners. It is an effort to reduce the amount of visitor- and employee-generated waste that national parks send to landfills. As part of this initiative, GTNP collaborators spent the 2017 summer targeting the one material that is believed to comprise upwards of 40 percent of Grand Teton National Park's waste stream - food.

In parallel, Teton County has adopted a Road to Zero Waste strategy that includes a goal of diverting 60% of waste from the landfill by the year 2030. The County has also identified food as a primary component of the municipal waste stream and plans to implement municipal-scale food waste composting services by the year 2021.

For the 2017 food waste pilot program, food discards were gathered from a total of seven collection sites at Grand Teton Lodge Company and Signal Mountain Lodge facilities – the two primary concessioners in Grand Teton National Park operating lodging, food and beverage and retail operations. County-contracted waste hauler, Westbank Sanitation, provided collection and hauling services for the material from these sites to the West Yellowstone Composting Facility in West Yellowstone, Montana (Gallatin County). Organizers worked at all levels, from training and engaging staff to managing loading dock space and schedules, in an effort to identify and optimize the systems and processes necessary to separate, collect, transport and process food waste in a new way.



Fig 2. Erik Kimball, from Signal Mountain Lodge, gives the thumbs up from the inside of a food waste dumpster.



Fig 1. Signage on the side of a truck at the West Yellowstone Compost Facility in West Yellowstone, Montana.

A total of 73.3 tons (146,620 pounds) of food waste were collected and composted during this first season, at an average of 3.4 tons per week (6,800 pounds). While early estimates called for a season total closer to 150 tons, several of the sites were unable to participate for portions of the season due to lack of space for bins, wildlife concerns and other logistical challenges. These issues were exactly the kinds of lessons that organizers hoped to discover during this initial phase of collection. Thanks to a commitment from all the project partners, the pilot program will continue in 2018, providing added opportunities to further optimize procedures and take additional steps toward the implementation of municipal scale food waste composting services in Teton County, Wyoming.

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

### Why Food Waste?

Food waste is at the top of the list of materials targeted by efforts to minimize landfill-bound material. 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 this material 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 Grand Teton National Park revealed that more than 40%, twice the State average, is 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, a number in keeping with waste generation trends in hotels and hospitality operations.

### Why Here and Why Now?

In 2014, Teton County Commissioners adopted a Zero Waste Resolution with an initial goal of diverting 60% of waste from the landfill by 2030. From there, Teton County Integrated Solid Waste and Recycling (ISWR) staff, along with community partners, identified a fifteen-year compilation of strategies to achieve the next level of waste minimization. Food waste composting was given a high priority among these initial strategies, and the information gathered from this pilot represents a critical step toward realizing the County's food waste diversion goals.

Independently, but during a similar time frame, Subaru of America was working to identify three national parks in which to introduce and impart their success; having reached 99% diversion of waste from landfill in their Lafayette, Indiana automobile manufacturing plant. Grand Teton National Park, located in Teton County, Wyoming, was chosen as one of the pilot parks, along with Denali and Yosemite. Project coordinators quickly identified food waste as a high priority for diversion in the Park as well. With the understanding that food waste composting services would not be available through Teton County ISWR for several years, organizers explored alternatives for an interim solution.



Fig 4. Pilot project organizers tour the West Yellowstone Compost Facility.



Fig 3. Signal Mountain Lodge staff members developed a process to separate food waste from landfill bound discards.

An opportunity came about with the West Yellowstone Compost Facility, located in Montana. This facility welcomed the chance to test the processing of a greater volume of material over a short-term trial period. Early challenges arose, however, in considering the West Yellowstone destination for Teton County users. It is located over 100 miles away, it would require permits and permission to cross two national park boundaries, and the high tip fees, at \$350/ton, were three times the landfill tip fees that concessioners were paying. Through much negotiation and persistence, a plan came together.

# Piloting Food Waste Collection in Grand Teton National Park

## What Was the Process for the Pilot?

The 2017 pilot focused on areas that generated large volumes of food waste and where collection and education were easy to control. While there is significant food waste in campgrounds, as well as other National Park Service outlets, material from these locations is difficult to capture. For this reason, collection for the first year of this pilot involved the systems operated by the two concessioners mentioned previously - Grand Teton Lodge Company and Signal Mountain Lodge. Yellowstone concessioners, Xanterra Parks and Resorts and Delaware North, were helpful in providing operational insight to the Grand Teton concessioners based upon their experience in the neighboring National Park with the collection of food waste for composting.

The two concessioners, along with Teton County ISWR, NPCA and the Park Service, worked together to formulate a plan for the pilot, including writing a Request for Proposals for the hauling service, determining collection sites and projecting food waste volumes. Through a formal procurement process, led by Teton County ISWR, Westbank Sanitation was selected to be the designated hauler for the pilot project. Many meetings and discussions of the partners ensued; through which decisions were made regarding the timeline, collection sites, materials allowed and other hauling logistics.

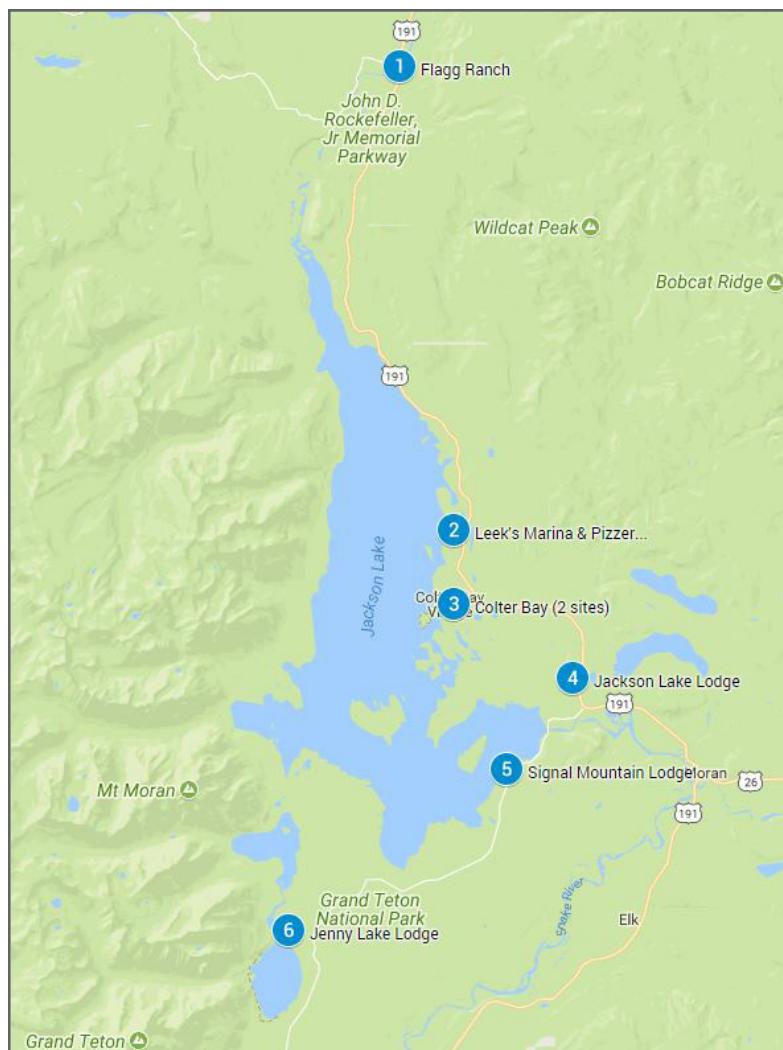


Figure 5. Food waste pilot collection sites, summer 2017.

## Timeline

Food waste collection began in May 2017, just as Park concessioners were opening for the season. Initial inefficiencies and confusion were resolved within the first two weeks, and full operations were in place by early June. The final collection took place on October 12.

## Collection Sites

Collection was planned for a total of seven sites – five at Grand Teton Lodge Company and two at Signal Mountain Lodge locations. See Figure 5. For various reasons, a number of sites were not in operation for the full duration of the season.

- 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

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

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## Food Waste Only

Based on feedback gathered from other municipal composting operations, Teton County chose to restrict materials collected to food waste, paper towels and napkins only. The introduction of other materials, such as compostable cups, plates and utensils, adds confusion and invites increased contamination. Although concessioners were anxious to include all compostable waste materials, they were open to and successful in adopting the food-only procedures. The resulting low levels of contamination are considered to be a direct result of this practice.

## Hauling

Westbank Sanitation of Jackson, Wyoming was contracted through Teton County to provide collection services to transport the material from each of the collection sites, once per week, to the composting facility in West Yellowstone, Montana.

## Tonnages

Collection continued through the summer and early fall with the final pick up on October 12th. As stated previously, a total of 73.3 tons of food waste, or roughly half of the anticipated amount, were sent to the West Yellowstone Compost Facility. Adjustments made as the project began quickly altered tonnage expectations. In several locations, this included the decision to collect back of the house food waste only. Concessioners chose to focus on training staff and optimizing internal operations.

Other adjustments were made in response to the lack of space for additional food waste bins, as well as for wildlife protection. At times, certain collection bins were taken out of service due to wildlife concerns, storage space and access conflicts. The Colter Bay Ranch House, for example, was removed from the collection due to a lack of space and the need for loading dock modifications. At Jenny Lake Lodge, there was a disruption in collection mid-season while awaiting completion of an enclosure for the food bins to guard against wildlife impacts. This site remained inoperable for the duration of the program.

## End Product

Finished compost from the West Yellowstone facility is made available to the public and utilized in mine reclamation, as well as in excavation and road projects within Yellowstone National Park.

## Funding

Funding for continuation of the food waste collection pilot in Grand Teton National Park in 2018 has been approved by Subaru of America. The concessioners have also agreed to allocate additional funding to offset program costs.

This funding structure is unique to the pilot project. Once Teton County institutes municipal food waste composting services at its Horsethief Canyon compost site, the cost of composting food waste from the Park is expected to decrease significantly. The distance to the composting facility will be less, as will the expected tip fees for organic material.



Figure 6. Finished compost from the West Yellowstone Facility is utilized in mine reclamation and excavation and road projects.

## Piloting Food Waste Collection in Grand Teton National Park

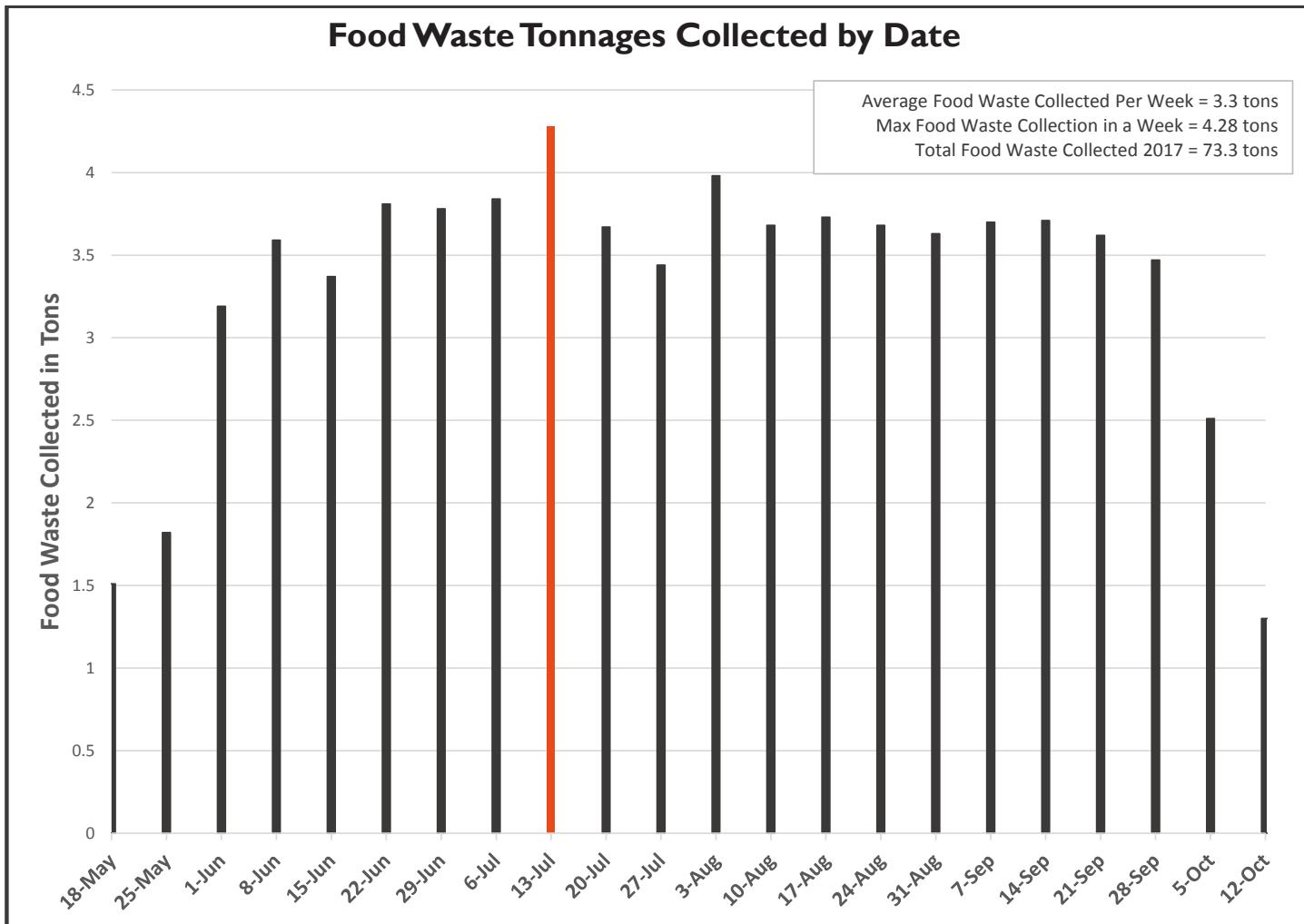


Figure 7. Food waste tonnages by collection date, summer 2017.

## What Did the Pilot Process Reveal?

### A Successful Collaboration

Arguably the most significant achievement of 2017's food waste collection pilot was the establishment of an efficient and effective partnership among the nine entities who worked together to develop and implement this first year of collaborative study. Together, these organizations measured successes and challenges at every step and worked constructively to optimize systems and identify the solutions and opportunities to make the most of this experience.

### Hauling Permissions, Timing and Logistics

Early obstacles faced in the collection of food waste from national park sites included travel restrictions through Yellowstone National Park, which does not allow commercial traffic through unless trips are related to business in

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

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Yellowstone. Because the once-a-week haul of food waste through the Park was of benefit to another national park and also provided the possibility of expanded opportunity at the West Yellowstone facility, Yellowstone agreed to issue permits. The travel days and times were negotiated between the two national parks.

In order to cross from Wyoming into Montana and return through Idaho, haulers were required to license their trucks to travel through both states and file multiple, specific fuel tax forms. In addition, the long distances, over 100 miles, drivers were required to keep a continual seven-day log for the duration of the pilot. Westbank Sanitation drivers now have an established format for this log that could be used again for future collections.

Finally, the concessioners themselves had restrictions about the time of day at which collection could take place. Early morning collection, for example, would possibly negatively impact resort guests. Within these hours, haulers found themselves competing with other delivery vehicles and garbage collectors at the loading docks. Westbank Sanitation drivers reported starting their route at 6:30am at Jackson Lake Lodge, as there was little dock activity. They would then back-track to Signal Mountain and Jenny Lake Lodge, as these sites requested that pick up not occur before 8am. This route sequence added an extra 40 minutes in drive time but proved successful in accommodating the time requirements and other loading dock traffic at each of the collection sites.



Figure 8. Pilot project organizers pose in front of the rear-load collection truck that was specially modified to accommodate a water pump and tanks for washing and collecting rinsate from food waste bins.

## Piloting Food Waste Collection in Grand Teton National Park

### Contamination Levels of only 1%

There was early pressure from partners to accept more than just food waste, including compostable cups, flatware, and plates. Acting on the advice ISWR received from a number of municipal food waste collection programs, the procedures for this pilot restricted materials to food waste and paper towels only.

These restrictions proved successful. Contamination remained at a minimum - a significant achievement. West Yellowstone personnel calculated a 1% contamination rate, meaning that 99% of the material collected from Grand Teton National Park was recovered through composting. In comparison, food waste delivered to the West Yellowstone Facility from Yellowstone National Park, where additional materials are accepted in the food waste collection, has a contamination level of approximately 25%.

Contaminants were identified and recorded by Westbank Sanitation drivers at each pick up and at each location. This information was communicated to site managers and personnel who prioritized staff training and worked diligently to minimize incorrect disposal.

*...calculated a 1% contamination rate, meaning that 99% of the material collected from Grand Teton National Park was recovered through composting.*



Figure 9. Common contaminants included yogurt cups, dust masks and rubber gloves.

### Early Concerns Included Odor and Negative Wildlife Impacts

Odor was a serious concern at the outset. Organizers anticipated that odor from the food waste bins would have an unpleasant impact on staff and lodging guests. There were also fears that rotting food odor would attract and endanger wildlife. Plans were in place to add a second weekly collection during the hottest summer months in order to minimize odor issues and accommodate increased volume.

As the season progressed, however, these concerns were not realized. There were no issues reported regarding odor at any time during the season. The measures taken to combat odor were deemed successful. They included the bagging of food waste to lessen leakage, the rinsing of collection bins and the use of a neutralizing spray. This spray contains a neutralizing enzyme that cancels odors and dissolves remaining food particles into water and carbon dioxide. It is EPA-approved, commonly used in the food industry and received approval from the West Yellowstone Compost Facility. Hauling operators sprayed every bin with this enzyme following each collection.

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Figure 10. Bins were washed, rinsed and sprayed with a neutralizing enzyme in an effort to minimize odor and prevent wildlife incidents.

project awareness from the very beginning. This was followed up with on-site staff training at each location and individualized training from team managers. Posters and container labels specific to the Grand Teton program were created in partnership with non-profit educational partner Recycle Across America.

Reports indicated that the most difficult locations at which to change disposal habits were employee dining rooms. Jon Dyer, Sustainability Coordinator for Grand Teton Lodge Company, describes sitting at the waste bins and pulling a trash bin away from employees who were on the verge of putting food waste into the trash, in order to get their attention. Concessioner managers further explained that the initial confusion among employees gave way to enthusiastic compliance and avid engagement as the project advanced. They attribute this success to a culture of sustainability, clear communication and signage, continuing education, and positive reinforcement.

*“Their food waste program is exceptional.*

*They should be VERY proud of their managers for communicating the standards....*

*they are as close to perfect as I could imagine.*

*No broken bags, no contamination, just beautiful to see....*

*Like synchronized swimming without the nose plugs and  
funny-looking shower caps.” -Dan Webb, Westbank Sanitation*

Westbank Sanitation took measures early on to allow for the washing and rinsing of bins as a means of dealing with odor abatement. Two water tanks were installed on the rear-load garbage truck – one to hold clean water and one to capture the gray, or used, water. The clean water tank allowed operators to rinse the food waste containers at every pick up. The truck also included an RV pump that, when paired with the gray water tank, enabled the operator to collect the rinse water from the bins and separate this additional liquid from the food waste.

### Education Was Key

Consistency in communication, training, and education were another measure that contributed to low contamination levels and overall program success. All concessioner staff members were trained in general

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## Collection Containers and Bags

When selecting bags for food waste collection, concessioners preferred compostable bags in a color other than black or clear – to distinguish them from the bags used for landfill bound trash and with the hope that they could also be composted. They chose light green, compostable bags to be used at all sites, apart from a short period at Colter Bay. In this case, there was an issue with a supplier, and this site temporarily switched to using thicker, 2-millimeter weight, non-compostable bags.

Even this brief variance made an impact on the hauler's experience. Reports from Westbank Sanitation indicated that the non-compostable bags saved a significant amount of time. They were resistant to breakage, keeping the food waste containers much cleaner and reducing the amount of rinsing required. These observations, coupled with feedback from the West Yellowstone understanding of the advantages of bags.

The compostable bags, as completely and disappear from the these bags, however, is that they in messier collection bins. They waste shredding equipment at the report that the compostable bags get so tightly tangled that they have to be cut out of the machinery by hand, which slows down the process considerably.

*“It all ties together...If you have good bags, it positively impacts the process for the hauler...and eventually the composter.”*

– Jenny Boysen, Westbank Sanitation

expected, are found to compost final product. The problem with are easily torn open, resulting also become tangled in the food composting facility. Operators



Figure 11. When food was discarded, either without being bagged or having fallen out of a broken bag, it resulted in additional work to clean containers and control insect infestation.

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



Figure 12. All concessioners will use 19 micron, non-compostable, green bags during the 2018 collection.

The non-compostable bags do not break as easily, keeping collection bins cleaner, and also shred easily when opened at the compost facility. The difficulty, however, as explained by West Yellowstone Facility staff, is that these bags do not break down in the composting process. Food waste from Yellowstone National Park is delivered in non-compostable bags, and these plastic pieces are present in the finished compost. This bit of contamination in the end product is acceptable at the West Yellowstone facility because the compost generated is not intended to be sold as high-grade gardening material. In operations such as those planned for Teton County, in which the finished compost is expected to be of high quality for use in gardening and landscaping, additional measures to screen the plastic residue out of the finished product may be necessary. Other considerations may involve different bag shredding mechanisms at the Teton County facility.

No mid-season changes to bag types were made by concessioners during the 2017 season. In planning for the 2018 collection, however, all sites will use the same type of non-compostable bags with a minimum thickness of 19 microns.

The type suggested by the West Yellowstone Facility to meet these requirements is available through Sysco™, see package details in Figure 12. [Note: With the use of the thicker plastic bags for collection in 2018, it is expected that the food waste collection bins will be much cleaner and require less rinsing. This shift will enable a no-rinse collection in 2018, which will mean that a front-load collection truck can be used for the food waste route. More information on this topic is provided in the Looking Forward section.]

### Bin size

As explained in previous sections, the allocation of bin space at the various sites was a challenge. During the 2017 collection, a combination of bin sizes were used in order to maximize available space. Bin sizes ranged from 95-gallon carts to 2, 4, and 6-yard dumpsters.

The loading dock at Jackson Lake Lodge (JLL), for example, exhibited one of the more complicated bin arrangements. As mentioned previously, the collection vehicle was rear-loading in order to accommodate the water tanks used for rinsing bins. Because JLL's trash dumpsters were emptied with a front-load truck and because the dumpster location required the two dumpsters to be stacked one in front of the other, a larger dumpster for food waste was out of the question. Instead, six 95-gallon carts were used for food waste, so that they could be maneuvered by hand. At each collection, every bin had to be individually lifted, dumped, washed, dumped again, sprayed and returned to the storage closet. This was a viable solution to the space and logistical constraints at the JLL loading dock, but it proved to be a time consuming and inefficient.

Food waste in the 95-gallon carts made them twice as heavy as compared to loads of mixed garbage. Many kitchen staff members could not maneuver them.

Employees relied on a few of the stronger staff members to rotate the bins throughout the week so that there was always an empty bin accessible. At times, this rotation did not occur, and the food waste was instead discarded with landfill-bound trash.

**Note:** Food waste is twice as heavy as mixed garbage.

- Mixed garbage = 300 lbs/yard
- Food waste = 595 lbs/yard

## Piloting Food Waste Collection in Grand Teton National Park

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Both drivers and concessioner staff members prefer to replace the 95-gallon containers with larger dumpsters in next year's pilot program. Plans for these arrangements are underway [see Looking Forward section]. Use of a front-load truck in 2018 will allow for easier maneuvering at facility loading docks and increase efficiency in the collection process.

It should be noted that, even with the difficulty and inefficiency of maneuvering the 95-gallon carts, all bins utilized in the collection were recorded at 75-100% capacity at nearly every tip.

### Available Bin dimensions for 2018 and Bear-Proof Containers

Concessioners provided bin size requests for 2018 by January 2018 so that orders could be placed in time for May delivery. The National Park Service specifies that all outdoor bins be forest green in color. Bear-proof bins larger than 4-yard must be special ordered. Prior to the 2017 collection, when the plan was reviewed by wildlife biologists, bear-proof containers were specified by the Interagency Grizzly Bear Committee. As GTNP is home to both black and grizzly bears, the pilot coordinators were sensitive to ensuring the safety of these animals.

	LENGTH (wide)	DEPTH	FRONT HEIGHT	REAR HEIGHT	CASTOR
2-YARD STEEL	83"	35"	36"	45"	8"
3-YARD STEEL	83"	42"	42"	51"	8"
4-YARD PLASTIC	83"	59"		66"	8"
4 YARD STEEL	83"	51"	45"	55"	8"
6-YARD PLASTIC*	81"	81 1/8"	50"	60"	n/a for this size

\*The 6-yard steel containers are too heavy for use with front-load trucks that will be utilized during the 2018 collection.

## A Summary of Lessons Learned

*that will inform the future of food waste composting in Teton County, Wyoming*

- ▶ Initial and ongoing education and training are critical.
- ▶ Start small and simple, with food waste only, to limit contamination. Optimize basic operations before introducing additional parameters.
- ▶ Early adopters should include a limited number of high volume commercial food waste producers.
- ▶ Write a precise scope of work for the hauling request for proposals (RFP).
- ▶ Get creative about finding space for containers.
- ▶ Interagency Grizzly Bear Committee (IGBC)-approved bear-proof containers are recommended for food waste within the Greater Yellowstone Ecosystem.
- ▶ Bag type is an important factor in reducing bin contamination and controlling odor.
- ▶ Composting of residential food waste will be considered following substantial optimization of commercial operations.

## *Goal for 2018 = 150 tons*

*Participants are confident that the system optimized in 2017 will result in twice the amount of food waste collected next season.*

## **Looking Forward**

Looking forward to 2018, the goal is to maintain similar project parameters but optimize them in a way that will result in the diversion of twice as much material, or 150 tons. Collaborators are eager to implement the modifications identified during the first season and are confident that these adjustments will result in double the success.

### **Looking Forward: Collection**

- The collection schedule for 2018 will be May 11-October 14.
- Once-a-week collection is expected to continue, even with the goal of increased tonnage. A single collection truck has the capacity for 8.5 tons of material. The largest load in 2017 was just over 4 tons.
- An effort will be made to focus on maximizing bin space on cramped loading docks and in storage areas at the concessioners' facilities.
- Non-compostable bags will be utilized and tested by all participants.
- 19 micron bags are recommended [see Figure 12 on page 15 of this report].
- Stronger bags tear less and better contain food waste and odor. This will result in less rinsing of dumpsters but will require greater reliance on an odor neutralizing enzyme spray.
- This no-rinse system will allow the use of front-loading trucks that will potentially increase collection efficiency, as well as better accommodate the varied bin arrangements at collection locations.
- Note: Front-load trucks cannot lift as much as the rear-load trucks. The maximum dumpster size for front-load vehicles will be a 4-yard bear proof or 6-yard plastic non-bear proof container.

### **Looking Forward: Materials**

- Collection will continue with food waste, napkins, and paper towels only in order to minimize contamination and simplify training and instruction. No compostable cups, plates, utensils or other materials will be included.

### **Looking Forward: Outreach and Education**

- For 2018, enhanced employee training plans are underway at concessioners' facilities.
- Concessioners are planning individualized, small visitor-facing expansions of the food waste program (i.e. among housekeeping staff), but, for the most part, year two will still focus on back of the house kitchen operations.

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- Organizers will consider a centralized website, possibly hosted by NPCA, to explain the food waste collection pilot project. Collaborators requested this tool in order to easily provide information to staff and guests and, possibly, as a location to post project announcements and updates.
- Once a local food waste composting facility is in place, Teton County may consider a pre-certification program for commercial composting participants based upon the staff training initiatives undertaken by Park concessioners.

### Looking Forward: Permitting

- An amendment to Teton County's Wyoming Department of Environmental Quality (WDEQ) Chapter 6 permit will be required to incorporate food waste into existing yard and construction composting operations. Initial conversations between County staff and WDEQ have already begun.

## How Has the Pilot Impacted the Region?

### Grand Teton National Park

As part of the Subaru, NPCA and NPS-led Zero-Landfill Initiative, Grand Teton National Park and its concessioners, Grand Teton Lodge Company and Signal Mountain Lodge/Forever Resorts, have improved their waste infrastructure and operations, raised public awareness around trash volumes in national parks and surrounding communities, and educated employees and visitors on how to lessen their environmental footprint.

### Teton County

Building upon this year's successes, including the minuscule contamination rate of only one percent and the identification of numerous efficiencies in food waste collection and transport, Teton County is further empowered to optimize food waste diversion as a means to significantly reduce its landfill bound discards. This progress moves Teton County closer to its initial Road to Zero Waste goal of 60% waste diversion from the landfill by 2030.

In summarizing the first year of the pilot collection, Heather Overholser, Superintendent of Solid Waste and Recycling for Teton County commented, "As is the nature of a pilot project, we didn't know what we were getting into. What we found was a dedicated team that persevered through many challenges to develop a successful program. We look forward to continuing this program next year and further establishing the foundation for food waste composting in Teton County."

*"As is the nature of a pilot project, we didn't know what we were getting into. What we found was a dedicated team that persevered through many challenges to develop a successful program. We look forward to continuing this program next year and further establishing the foundation for food waste composting in Teton County."*

*-Heather Overholser, Teton County Superintendent of Solid Waste and Recycling*