

Developing a Roadmap Toward Zero-Waste Operations for an 18,000-Person Capacity Amphitheater

Written by Anna Bridges
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Live Nation is a global entertainment industry specializing in live music production, ticket sales, and sponsorship. They are considered the world's largest producer of live entertainment hosting over 44,000 concerts and festivals every year to over 121 million fans in 45 countries (Biz at Live Nation, n.d.). Corporate transparency is wanted more and more from consumers, especially in regard to sustainability efforts. In 2019 Live Nation released an Environmental charter stating their company-wide sustainability goals for 2030. While Live Nation can pledge efforts towards their established goals in sustainability and implement nationwide changes like phasing out plastic water bottles, the reality of getting a venue to zero waste takes much more specific solutions that may or may not be transferable to other venues.

RV Inn Style Amphitheater (RVISA) is one of Live Nation's larger venues as it is an 18,000-capacity amphitheater located in Ridgefield, WA. Prior to 2023, RV Inn Style Amphitheater (RVISA) was operating with little to no sustainability programming in place. All waste accumulated was landfilled even though much of this waste could be diverted to recycling, compost, or donation. The goal for my internship as RVISA's 2023 Sustainability Coordinator (SC) was to create a venue-specific sustainability roadmap with detailed guidance on how implement strategies and programs to achieve national targets. To accomplish this goal, I was required to observe all venue systems in full operation, interview team leads, identify areas for improvement, research and collaborate with local green resources, and collect data for benchmarking and budgeting.

In my report I discuss and analyze the roles and behaviors of back-of-house (BOH), front-of-house (FOH) fan behavior towards waste diversion in this large-scale entertainment environment. This included an analysis of RVISA’s 2023 waste stream along with a roadmap with recommended actions. Finally, this report expanded on the challenges of regional recycling programs, diversion costs, stakeholder engagement, corporate communications, and expectations vs. venue operations and show day realities.

For the 2023 season, May 15th - September 30th, RVISA accumulated an estimated 89.9 tons of waste from 21 shows with a total of 173,802 attendees. This averages to approximately 4.28 tons of waste per show. Of the 89.9 tons, an estimated 8.1 tons were diverted as mixed recycling, compost, or scrap metal. The remaining 81.82 tons of waste were landfilled giving RVISA a 9% diversion rate for the 2023 season. The total cost for waste services came to \$17,883.38, which averages to \$198.93 per ton. Figure 1 and 2 offer a visual of the waste stream contents.

Figure 1. Percentage of Concession Vessel Materials Based on Sales Data

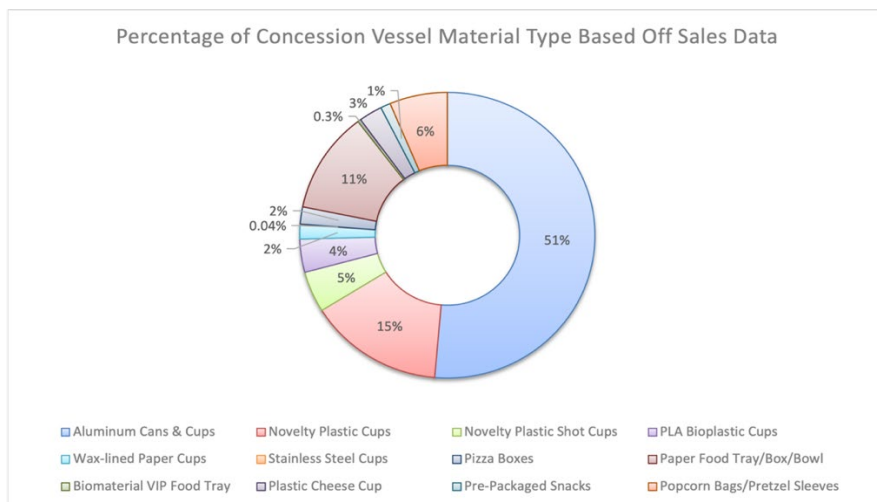
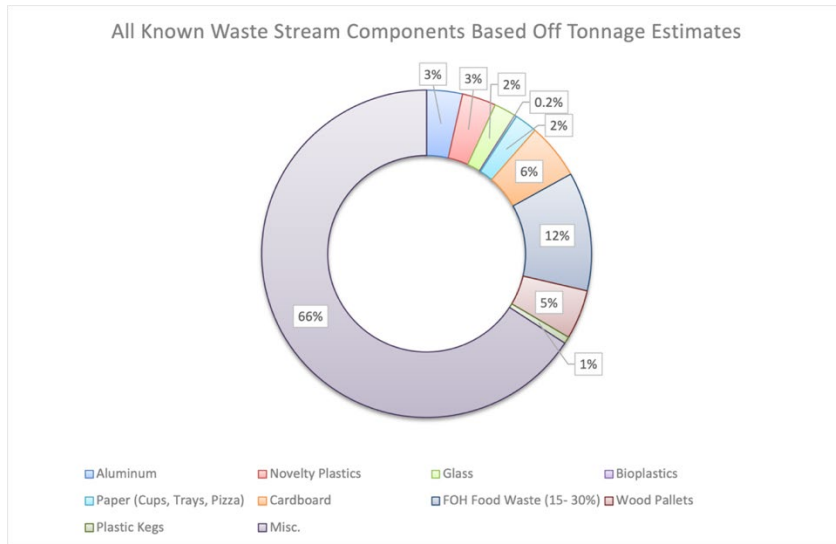


Figure 2. All Known Waste Stream Components Based on Tonnage Estimates



In general, RVISA’s three largest waste impacts are the continued use of single-use Novelty plastics, the accumulation of miscellaneous operation materials, and the improper allocation of renewable commodities such as food waste, metals, glass, and cardboard. Novelty plastic vessel buildup from each show is not well represented when using tonnage for the standard method of waste tracking as plastic is much lighter than other waste. While it only accounts for 3% of RVISA’s total waste stream, the large quantity and volume of space these plastics take up is crucial to understand when planning how to divert them, how much receptacle space is needed, the frequency of servicing, how long it will take to sort through them, and how much additional packaging is associated with their purchase.

There were four notable issues when analyzing venue systems and waste diversion methods: non-accepted materials, material buildup/accessibility, receptacle contamination, and lack of oversight/training/engagement. All of which contribute to each other meaning they are of equal importance when finding a strategic solution.

The Mixed Recycling program of Waste Connections Clark County accepts aluminum cans, cardboard, paper, plastic bottles, tubs, jugs and jars larger than 4 ounces (About WC Northwest, n.d.). Accepted plastics are based on shape and size rather than plastic type. The

reasoning behind this is based off the plastic market where plastic reprocessing facilities who purchase plastics from haulers prefer the easy to recycle commodity plastics like bottles, tubs, jugs, etc. It has also been shown to improve efficiency at the sorting center as limiting to specific shape can reduce non-recyclable plastics which often contaminate and slow down processing. However, this prevents potentially recyclable plastics of different shapes, like the #1 PET wine carafes, from being diverted.

RVISA accumulates a significant amount of those non-accepted plastics despite committing to the plastic free venue policy stated in the Environmental Charter. These plastics are allowed as they are intended to be souvenirs fans can take home and reuse. The reality is most fans do not take home their drink cups and the plastic are now treated as single use. Of those novelty plastics only mason jars are accepted which represents 43% of novelty drink vessel sales. The remaining 57% of novelty plastic estimated to be 1.54 tons is sent to the landfill.

Bioplastics and paper products in compost are also not accepted. Bioplastics can cause several problems for composting facilities which has resulted in a lot of pushback where haulers will no longer accept biobased materials. For one, in aerobic conditions they degrade at a much slower rate than organics which delay compost resell opportunities. In addition, they do not provide additional nutrients crucial to agriculture which are the primary industries who purchase industrial compost.

Receptacle contamination was another common challenge observed. Contamination can be caused by a multitude of reasons like poor signage on waste bins, lack of training, fan intoxication, etc. Not only will contamination ruin already-sorted materials but it also requires more time to retroactively sort therefore increasing the expense of labor and hauling. FOH and BOH receptacles vary in accessibility and location which determine how easy or hard it is for

employees to dispose of waste. Additionally, the sheer volume of waste buildup tends to overwhelm staff on hectic show days and further increased the chance of contamination.

A common argument and challenge for sustainability programs is they typically require additional budgeting for recycling or composting servicing and labor hours for sorting. Through the waste audit I was able to identify how waste trends at RVISA and inefficiencies in waste management can influence its overall expense. For example, with large volumes of lightweight materials, like cardboard, aluminum cans, and plastics it is difficult to maximize receptacle capacity therefore increasing the number of pickups or receptacle size needed. As most haulers charge by tonnage, diverting heavy commodity materials like metals, food waste, and wooden pallets would significantly lower per tonnage costs. As RVISA produces large volumes of these materials there are rebate opportunities available for scrap metal, cardboard bales, and wooden pallets.

Prioritizing a shift to reusable concession vessels would be an ideal solution for RVISA as it offers significant benefits across all venue systems and simplifies resources required to achieve zero-waste operations. In a single season, RVISA could prevent more than 5.20 tons of single-use plating and drink vessels from being landfilled which would reduce waste hauling and recycling servicing costs. Reusables would help decrease the volume and buildup of shipping pallets, cardboard boxes, film plastics, and other packaging materials. In addition, it would also considerably reduce additional labor costs and effort required for sorting and diverting FOH waste which make up one of the highest expenses associated to zero-waste efforts. While the initial cost is higher than disposables, it is found businesses will break even after a few uses and will save a significant amount of money long term (A Guide to the New Packaging Reuse Economy) Reusable concession vessels also provide another marketable space for sponsorships.

Since the mission of Live Nation is to maximize live entertainment experiences, this can also be applied to how we create waste stations. Live Nation has a unique opportunity to incorporate entertainment into this area. Stations could have arcade-like games with rewards or can-crushers to entertain fans. By incorporating rewarding and engaging attributes to waste we can create positive associations with sustainability efforts. We can also build a work community/culture through creative projects which incorporate waste materials. Projects like building benches, tables, or a garden bed from pallets would increase material circularity while serving as a team building exercise. Utilizing unrecyclable novelty plastics or other scrap materials to build an art installation or sculpture would bring attention to material resourcefulness and stimulate thought around creative ways to reuse single use vessels.

In general, new programming in this industry tends to have a slow implementation period as there are constant, more urgent problems for managers and employees to tend to. To increase motivation and engagement in our environmental efforts, finding easy ways to reduce current expenses through waste management inefficiencies may help to provoke urgent action. Diverting heavy, bulky, and high-valued materials like food waste, glass, metal appliances or infrastructure, cardboard, and cans will deliver prevalent effects. Improving circularity practices like implementing reusable concession vessels will offer a long-term, proactive, and streamlined solution to single-use waste that is not always recyclable or compostable.

To increase engagement and action it is advised to hone in on the culture and experience Live Nation strives to emulate at their venues. The idea is that waste management should also reflect those qualities. We know fans are gathered for a pleasurable, unique, worry-free, live entertainment experience. Likewise with venue employees who are working in a hectic environment but alongside corporate ethos of providing self-empowering flexibility, being a part

of and building workplace community all while being able to enjoy their time at work as much as possible. This environment is designed for positive, upbeat, and enriching experiences and should therefore be implemented into all systems including waste management. The idea is not to burden employees and fans with the consequences of not recycling or composting properly but to design a sustainability program that engages, excites, and captures their attention and provides a new perspective on how to improve our environmental footprint more easily and effectively than the current standard.

From the knowledge of waste management processes and workplace realities acquired from the 2023 season at RVISA and Live Nation, I am hopeful these findings will stimulate participation and thought on how to improve the entertainment industry’s environmental impacts. To summarize all that I have learned from this experience, my degree, and the value I hope to have brought to RVISA, Live Nation, and the entertainment industry please review Table 2 below.

Table 2: A Summary of Value Gained from this Project

<p>Value this project added to Live Nation and RVISA</p>	<p>To Live Nation: A new perspective on sustainability solutions from both an environmental science academic and graphic design professional</p> <p>Helping another of their large-scale venues to begin diverting waste and building out a sustainability team getting them closer to their goals</p> <p>To RVISA: An applied and tailored framework for their new sustainability program</p> <p>Cost-saving waste management solutions to help improve environmental footprint</p> <p>Baseline data for continued waste tonnage and material tracking</p> <p>Program manual with SOPs, resources, roadmap, and budget for their future SC to jump off from</p>
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<p>Value added to me because of my project and degree</p>	<p>A more applied and comprehensive understanding of the challenges corporations face when implementing sustainability efforts</p> <p>New knowledge of waste management systems, standard practices, and challenges</p> <p>Regional waste management resources and capabilities of southern Washington compared to other regions across the U.S.</p> <p>Quickly learned about the difference in communicating environmental topics within my program at university vs my project with a business</p> <p>A clearer understanding of the vast spectrum of employee and fan beliefs, opinions, and actions towards sustainability topics</p> <p>A more solid conceptualization of the volume of waste associated with tonnage reports</p> <p>New ideas of integrating my professional graphic design and marketing experience with environmentalism to redesign the identity/branding of waste management to make it more relatable to all stakeholders “Giving Garbage a Glow-Up”</p>
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