

Theme parks and  
solid waste  
generation  
environmental  
sciences essay



**ASSIGN  
BUSTER**

[Type the document title][Type the document subtitle]

**Soh Yee Vonn**

**[Pick the date]**

## **Executive Summary**

This report analyzes current practices and potential improvements in solid waste management of theme parks\* in the region of United States. It evaluates the interrelationship between theme parks and solid waste generation, and understudies how solid waste pollution impacted the environment. In United States, it is evident that improper solid waste disposal in theme parks contributed to environmental damages, which will be conducted based on two case studies, (1) Six Flags Magic Mountain and (2) Walt Disney Company. The two case studies will mainly present the implications of improper solid waste disposal, giving rise to solid waste pollution. The research paper subsequently discusses two theme park models which constantly take part in green initiatives. The two theme park models that would be addressed for their good solid waste management practices are Walt Disney Company, and Santa Cruz Beach Boardwalk. Consequently, it is followed by a series of actions these theme parks could take to reduce the amount of solid waste they generate and steps they should take to improve infrastructure and regulations. This report was prepared to improve the planning of solid waste flows in the operations of theme parks in United States and to provide recommendations based on the best solid waste management programs adopted by industry leaders. These models would be recommended to current and future theme park leaders to

reduce the amount of solid waste generation, and create awareness for its future guests in having a waste reduction philosophy. Table of Contents

## **Overview of Theme Parks and Solid Waste Generation Amusement Park and Attractions Industry Statistics in United States (U. S.)**

International Association of Amusement Parks and Attractions (IAAPA) estimated more than 400 amusement parks and attractions in the United States. In 2010, approximately 290 million people visited U. S. amusement parks (IAAPA).

### **Excess Waste Generation in Theme Parks**

In theme parks, large crowds of people were drawn in at extended periods of time, hence tend to create and collect more trash. Although some trash can be recycled, however these materials will still need to be sorted and taken to a recycling facility. This will increase energy consumption. Trash that cannot be recycled typically ends up in a landfill. It contributes to global warming by emitting methane, a greenhouse gas, as it decays. Human waste increases dramatically when there are large crowds of people in a contained area. In order for this issue to be addressed, a park must build its own sewage treatment facility, which requires energy and water to operate. Alternatively, the theme park can be connected to a nearby community sewage system to facilitate the overwhelming park needs (Ehow).

### **Solid Waste Pollution Impact towards the Environment**

While additional human activities and consumption contribute to accelerated global warming in the last two decades (UNEP), the accumulation of the non-

biodegradable waste in landfills also plays an important role. The discarded materials including chemical ingredients used in the manufacturing of these products, could also contribute to creating mountainous landfills. The concentration of solid wastes\* reacting to heat, moisture and air which were laid exposed to the environment, led to accumulated concentrations of greenhouse gas emissions. A 1997 survey of total global greenhouse gas emissions showed that about one-fifth of these emissions emanated from the United States (Brighthub). Thus, solid waste management solutions are important to reduce the greenhouse gas being added by solid wastes to global warming climate change. Environmentally sound waste management must go beyond safe disposal or recovery of wastes that are generated and seek to address the root cause of the problem by attempting to change unsustainable patterns of production and consumption. This implies the application of integrated life cycle management concept, which presents a unique opportunity to reconcile development with environmental protection (UNEP).

## **Territory-Wide Implications of Theme Park Waste Arisings**

### **Solid Waste Arisings**

Based on the operating experience of other international theme parks, the amount of Municipal Solid Waste (MSW)\* to be generated from the operation of the Theme Park is estimated to be increasing over the years, assuming that no waste reduction measures were done. Without waste reduction measures, such arisings would increase the demand for valuable landfill void space. In addition, without proper solid waste supervision and management, levels of pollutants may increase and fall out to nearby facilities.

## **Case Study 1: Six Flags Magic Mountain**

Environmental groups accused Six Flags Magic Mountain Theme Park of producing municipal and hazardous solid wastes\* into the Santa Clara River (LA Times, 2012). Trash with its logos had spill into the Southern California waterway and towards the ocean. Six Flags Magic Mountain had frequently contributed to high volume discharge carrying bacteria, metals, toxins, sediments and other pollutants into the Santa Clara River, its Estuary, and the Pacific Ocean. This solid waste pollution could be due to the park's irrigation system, parking lots or its backstage equipment areas, in which water used to wash its midway. Particulate metals were detected in the water as well, which resulted from the park's roller coasters and thrill rides as debris. The park has reported discharging hazardous solid waste pollutants with excessive levels of effluent, copper, lead, chlorine, bacteria, oil and grease into the river more than 400 times since 1995 (LA Times, 2012).

## **Case Study 2: Walt Disney Company**

From 2006 to 2010, the total waste generated by their theme parks & resorts increased by 27, 786 tons, a 10% increase since 2006 (The Walt Disney Company, 2010). The total solid waste generated was primarily due to significant construction projects at Disneyland Resort in California (The Walt Disney Company, 2010).

## **Discussions on Theme Parks taking Green Initiatives**

### **The Walt Disney Company**

#### **Environmental Footprint: Send zero waste to landfills**

As a leading diversified international family entertainment company, Walt Disney Company had set the goal of decreasing solid waste to landfill to 50% of waste generated in 2006 (The Walt Disney Company, 2010). With figures as shown in Appendix, solid waste to landfill had to be decreased to levels below 137, 556 tons per year. As per Case Study 2, there was a growth in construction-related waste from 2006 to 2010. However, despite this growth in construction-related waste, they exceeded their target level for waste sent to landfill in 2009 and 2010. Altogether, the percentage of waste diverted from landfill in 2009 and 2010 was 58% and 60% respectively. This was due to an increase in existing recycling programs and additional recycling programs at every park, leading to the vast improvement of waste diverted from landfills since 2006 (The Walt Disney Company, 2010). Achieving zero waste will require minimizing waste, increasing aggressive recycling, improving disposal mitigation programmes and sourcing for highly recyclable products. A continuous effort has to be contributed in order to sustain their targets of decreasing their solid waste to landfill to 50% of 2006 baseline by 2013, a milestone for working towards a goal of zero waste to landfills (The Walt Disney Company, 2012).

#### **Environmental Footprint: Minimize product footprint**

Walt Disney Company explored all aspects of the product lifecycle and is focusing their company-wide targets on two areas in particular: the sourcing of raw materials and manufacturing. These aspects of the product lifecycle

<https://assignbuster.com/theme-parks-and-solid-waste-generation-environmental-sciences-essay/>

are significant contributors to a product's overall environmental impact, and it is the best opportunity for Disney to minimize their product footprint. By 2011, strategic suppliers of key product lines will complete an Environmental Responsibility Index (ERI) survey. Strategic suppliers are suppliers that represent the top 50% of the supplier base for the key product lines. The "Environmental Responsibility Index survey" refers to a set of questions that are being used to query manufacturers on their environmental practices and policies (The Walt Disney Company, 2012).

### **Sourcing of Raw Materials**

Since Disney's immediate focus is on the direct sales of Disney products through Disney Stores and merchandise in their theme parks, their plush, apparels, accessories, toys has to be tracked regularly for improvement using the ERI as they represent a significant share of Disney's product volume. By 2014, it targets to demonstrate continued improvement in environmental performance for strategic suppliers in plush, apparel, accessories and toys (The Walt Disney Company, 2012).

### **Product Manufacturing**

By 2011, all paper used in paper-based books and magazines by Disney's non-licensed North American publishing businesses will fully meet the responsible paper target, meaning it will either contain recycled content, be sourced from certified forests, or be of known source origin. In pursuit of responsible paper use, Disney accepts documentation for recycled and virgin paper from the Forest Stewardship Council (FSC), Programme for

Endorsement of Forest Certification Claims (PEFC), Canadian Standards

Association (CSA), and the Sustainable Forestry Initiative (SFI). Additional <https://assignbuster.com/theme-parks-and-solid-waste-generation-environmental-sciences-essay/>

certifications systems may be evaluated by Disney on a case-by-case basis. Disney Stores North America will expand their commitment to organic cotton by making all Disney Baby apparel and sleepwear from 100% organic cotton. The Disney Store is committed to decreasing the environmental impacts of the products they produce in a way that brings higher quality and value to their guests. The Disney Store believes it is important to educate their guests on the benefits of organic cotton, which is done in a fun way through the online portal [www. disneystore. com/trackmyt](http://www.disneystore.com/trackmyt). The Disney Store is continually looking for ways to expand their commitment to organic cotton through other apparel lines where possible. In 2011, The Disney Store transitioned graphic t-shirts and baby apparel to 100% organic cotton (The Walt Disney Company, 2012).

## **Santa Cruz Beach Boardwalk**

The Santa Cruz Beach Boardwalk (SCBB) is the only major seaside amusement park remaining on the Pacific coast of the United States (Beachboardwalk). Being a theme park along the coast, it would be very prone for hazardous solid waste pollutants to contaminate the oceans, a scenario that occurred to Six Flags Magic Mountain in the above Case Study 1. With similar theme park characteristics, Six Flags Magic Mountain could implement measures made by SCBB to reduce production of municipal and hazardous solid wastes into the water. Located next to the Monterey Bay National Marine Sanctuary, SCBB is committed to environmental preservation. SCBB focuses mainly on its recycling efforts and since 1995 has won California's Waste Reduction Award (WRAP) for its commitment to environmental preservation (IAAPA).

<https://assignbuster.com/theme-parks-and-solid-waste-generation-environmental-sciences-essay/>



## **Santa Cruz Beach Boardwalk's Environmental Preservation Efforts**

Santa Cruz Beach Boardwalk (SCBB) award-winning recycling and reuse programs have been recognized by the State of California and the City of Santa Cruz. Their efforts include recycling or reusing approximately 180 tons of material annually, prohibiting the use of polystyrene (Styrofoam) at all Boardwalk food locations, installing the first solar powered trash compactors in Northern California, recycling green waste generated from landscaping, and electronic waste, cleaning the beach in front of the Boardwalk daily during the Spring & Summer, and participating in valued community programs such as Coastal Clean-Up Day. SCBB has adopted Ocean Lakes' implemented self-designed program called iCare, which involves the park to use its own garbage trucks for collecting and hauling garbage and recyclables to necessary dump and processing sites, thus circumventing the need for a private collection vendor. With its own on-site recycling stations, it can customize their own trash receptacles to fit the park's needs. SCBB now features a uniform roll-cart system that speeds trash collection. The Santa Cruz Beach Boardwalk (SCBB) built relationships and coordinates with several collectors in the area. On its own, the SCBB hauls its plastic and aluminium to a recycler; non-recyclable trash and construction materials like wood and steel to the city landfill; and makes old concrete available to local contractors for reuse. Santa Cruz Beach Boardwalk (SCBB) takes a multilevel approach, occasionally posting messages for its 45, 000 Facebook fans, adding an informational page to the website on eco-friendly measures and increasing on-site signage. SCBB understands the importance to develop

guest-targeted messaging; to promote recycling efforts and to get their guests involved (IAAPA).

## **Recommendations for Solid Waste Management**

### **Consider Bin Design & Placement**

There should be sufficient on-site signage as a rule of thumb, which should include a variety of visual clues and located on or close to trash receptacles. It would be best to include a combination of words, colours, restrictive openings and images. People make decisions in an eighth of a second. It is thus important to capture the guests' attention to think about what, where and how they should sort and deposit their respective waste. Trash receptacles should be eye-catching, and placed sufficiently around the park to drive guests towards the decision of recycling. Pairing a bin with every trash receptacle and using pictograms would solve language barriers among international guests. Additionally, a top design could be implemented; for instance, having round holes for bottles and cans to prevent other waste in the bin.

### **Partner with Beverage Provider**

Theme parks are bound to have binding contracts with their beverage suppliers. Beverage suppliers actively promote recycling and parks should reach out to their beverage suppliers to develop a recycling program cohesively. In 2007, Coca-Cola Recycling (a division of Coca-Colas Refreshments) was founded, which aims to recover 100 percent of the company's post-consumer material. The company has built the world's largest PET (polyethylene terephthalate)\* conversion plant in Spartanburg,

South Carolina (Hixon). The division took a three pronged approach: (1) consumer education, (2) access to recycling, and (3) recovery of the recycled material. In 2009, it began working with Six Flags to activate recycling in 12 theme parks. The programme includes the assessment of property to find out where guests are drinking and finishing their beverages. By collaborating with their beverage provider, " it would help to reduce your carbon footprint and goes against what you are purchasing from your supplier," says Jason Freeman, president of Six Flags New England and former corporate director of green sustainability (Hixon).

### **Involve Waste Collection Company**

Theme parks should involve their waste collection company to conduct a waste audit of their property. " Waste Collection Company specialises in the kinds of waste produced, able to tell you what may be high-volume commodities, and the resources available in your area to recycle the products," says Jennifer Berry, public and strategic relations manager for Earth911. com (Hixon). Engaging a Waste Collection Company enables theme parks to understand which materials to dispose off and to recycle. Having to recycle materials and locating a local outlet for these materials would save a huge cost on the landfill tipping fees.

### **Practice Precycling**

Practicing precycling involves prior planning on the theme park. Theme Parks are recommended to make decisions about materials to purchase that serve their parks well, based on what are recyclable. " Parks can control the containers that people have in their hands. Isolation of materials produces a purer, less contaminated waste stream. The quality of the material is an <https://assignbuster.com/theme-parks-and-solid-waste-generation-environmental-sciences-essay/>

issue and will bring a higher price," says Ed Skernolis, vice president for recycling at Keep America Beautiful in Washington, D. C (Hixon).

## **Educate & Publicize**

Theme parks involvement could extend further to their guests as well. " Recycling drives and events can increase recycling while bringing more guests to the park," says Berry (Hixon). Six Flags has initiated a program whereby guests who brings an empty Coke Can are entitled reduced ticket prices into the park. Besides Coke Cans, guests should be aware of the materials used for retail products as well. Guests can be educated on the benefits of organic cotton through an online portal in an interactive and fun way, which has already been implemented by Disney. Publicizing about their recyclable products would educate their guests about eco-friendly materials used within their stores. With awareness creation, it would increase the possibility that guests would make a wiser decision upon their product purchase.

## **Conclusions**

United States is a country highly populated with theme parks. Theme Parks, in its general nature would attract a huge number of people within a contained area. With its character, it would generate huge amounts of solid wastes ranging from municipal wastes such as bottles and cans to hazardous wastes such as particulate metals and oil. However, excessive levels of solid waste generated to landfills can be minimized in the above recommended strategies. Theme Parks should constantly be involved in the development of environmentally friendly programmes and associations, implementing these programmes within the park, educating their guests through interactive <https://assignbuster.com/theme-parks-and-solid-waste-generation-environmental-sciences-essay/>

methods, as well as evaluation their waste diverted from landfill. The solid waste disposal should be handled based on a 4-level hierarchal order. Level 1, the most preferable method of waste disposal would be source reduction, reducing waste and pollution generated by theme parks. Level 2, the next best approach would be recycling and composting, reusing as many materials as possible. Level 3, would be combustion and incineration, chemically or biologically treating waste that cannot be reduced, recycled or compost. Level 4, waste to landfills would be the least favourable method of waste disposal. An integrated solid waste management within a theme park would be critical to reduce the carbon footprint, which contributes to global warming by emitting methane, a greenhouse gas, as it decays.

## **Research Glossary (\*)**

### **Theme Parks**

Theme parks, for this report, will be defined as structures and settings based on a central theme, limiting to outdoor amusement parks such as those operated by Disney and Six Flags. Theme parks must have an annual attendance higher than one million or so to call themselves theme parks. Small Family Entertainment Centres, Marine Life parks, SeaWorld park zoos, and Water Parks would not be inclusive in the definition of theme parks for this report (Theme Park City).

### **Solid Waste Pollution**

Solid waste means any garbage, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded materials including solid, liquid, semi-solid, or contained gaseous

material, resulting from industrial, commercial, mining and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges (Department of Environmental Conservation). Examples of solid wastes includes: Waste tires, scrap metal, latex paints, furniture and toys, domestic refuse (garbage), discarded appliances and vehicles, uncontaminated used oil, empty aerosol cans, paint cans, compressed gas cylinders and construction & demolition debris (Department of Environmental Conservation).

## **Classification of Solid Waste**

In solid waste management (SWM), the segregation process is very important as it ensures proper disposal of solid wastes. Segregation at SWM units includes the classification of wastes into: (1) municipal solid wastes and (2) hazardous solid wastes.

## **Municipal Solid Waste (MSW)**

MSWs are mostly discards coming from human activities. Our trash, or municipal solid waste (MSW), is made up of the things we commonly use and then throw away. These materials include items such as product packaging, furniture (sofa), clothing, newspapers, paint and paint cans, bottles, batteries, electronic appliances and devices (computers & refrigerators), food scraps, grass clippings, tires, and other refuse (Brighthub). MSW does not include industrial, hazardous, or construction waste (United States Environmental Protection Agency, 2009).

## **Hazardous Solid Waste (HSW)**

Hazardous solid wastes contain nutrients and chemicals that contaminate the air and soil, often reaching groundwater levels. Hazardous wastes are carried by water run-offs to streams and bodies of water, which tend to contaminate drinking water sources. Examples include items such as discarded paint materials like brushes, rollers, trays and paint containers, cleaners in the forms of solvents, oils, batteries, pesticides and other leftover portions of materials (Brighthub).

## **PET (Polyethylene terephthalate)**

Polyethylene terephthalate is a plastic resin and the most common type of polyester. It is safe, strong, transparent and versatile. Up to 100% of a PET package can be made from recycled PET, and the material can be recycled again and again (National Association for PET Container Resources).

## **Works Cited**

Beachboardwalk. (n. d.). Retrieved April 8, 2013, from <https://beachboardwalk.com>: <https://beachboardwalk.com/eco/Brighthub>.  
(n. d.). Retrieved April 8, 2013, from <http://www.brighthub.com>: <http://www.brighthub.com/environment/science-environmental/articles/92943.aspx>  
Brighthub. (n. d.). Retrieved April 8, 2013, from <http://brighthub.com>: <http://www.brighthub.com/environment/science-environmental/articles/92943.aspx>  
Department of Environmental Conservation. (n. d.). Retrieved April 8, 2013, from <http://www.dec.ny.gov>: <http://www.dec.ny.gov/chemical/8732.html>  
Ehow. (n. d.). Retrieved April 8, 2013, from <http://www.ehow.com>: <http://www.ehow.com>.  
<https://assignbuster.com/theme-parks-and-solid-waste-generation-environmental-sciences-essay/>

ehow. com/info\_8483212\_environmental-come-making-theme-park.

htmlHixon, M. (n. d.). IAAPA. Retrieved April 8, 2013, from <http://www.iaapa.com>:

<http://www.iaapa.org/news/newsroom/news-articles/get-your-hands-dirty>

IAAPA. (n. d.). Retrieved April 8, 2013, from <http://www.iaapa.org>:

<http://www.iaapa.org/resources/by-park-type/amusement-parks-and-attractions/industry-statistics>

LA Times. (2012, April 26). Retrieved April 8, 2013, from <http://www.latimes.com>:

<http://articles.latimes.com/2012/apr/26/local/la-me-0426-magic-mountain-20120426>

National Association for PET Container Resources. (n. d.). Retrieved April 8, 2013, from <http://www.napcor.com>:

<http://www.napcor.com/PET/whatispet.html>

Salopek, J. J. (n. d.). IAAPA. Retrieved April 8, 2013, from <http://www.iaapa.org/>:

<http://www.iaapa.org/news/newsroom/news-articles/beverage-bottle-recycling-is-an-easy-way-to-start-going-green>

The Walt Disney Company. (2010). Retrieved April 8, 2013, from <http://corporate.disney.go.com>:

<http://corporate.disney.go.com/citizenship2010/environment/overview/waste/>

The Walt Disney Company. (2012). Retrieved April 8, 2013, from [http://thewaltdisneycompany.com/sites/default/files/commitment-categories/file/DisneyCitizenshipTargets2012\\_Final32612.pdf](http://thewaltdisneycompany.com/sites/default/files/commitment-categories/file/DisneyCitizenshipTargets2012_Final32612.pdf)

Theme Park City. (n. d.). Retrieved April 8, 2013, from <http://www.themeparkcity.com>:

<http://www.themeparkcity.com/itps/itpsfaq.htm>

UNEP. (n. d.). Retrieved April 8, 2013, from <http://www.unep.org>:

<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=52&ArticleID=69>

United States Environmental Protection Agency. (2009). Retrieved April 8, 2013, from <http://www.epa.gov>:

<http://www.epa.gov/osw/nonhaz/municipal/pubs/msw2009-fs.pdf>

<https://assignbuster.com/theme-parks-and-solid-waste-generation-environmental-sciences-essay/>