

# Waste Management Phoenix Open 2013 Sustainability Report



## THE GREENEST SHOW ON GRASS



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## ZERO WASTE CHALLENGE

Initiative is aimed at controlling materials brought into the event and educating vendors and patrons about proper disposal of materials, so that eventually zero waste is sent to the landfill.



## TRANSPARENT REPORTING

- Global Reporting Initiative Reporting Framework
- Council for Responsible Sport Gold Certification
- ISO20121 Sustainable Event Management



## “GREENEST SHOW ON GRASS”

Waste Management strives to minimize the tournament’s waste generation, energy usage, and water consumption.

### WASTE



- 100% Materials diverted  
39% Recycled; 47% Composted; 14% Waste-to-Energy
- 1.5 pounds of recovered waste per attendee.

### ENERGY



- 100% of electricity provided by renewable energy.
- Solar power used to power WM hospitality tent.
- Solar light towers used in key locations on the course.
- 63.3% of vehicles operated on alternative energy.
- Increased biodiesel fuel used in generators.
- Compressed Natural Gas used in WM trucks.

### REUSE



- 27,090 square feet of signage was reused from 2012.
- 88% signage stored for reuse in 2014 tournament.
- 140,000 used golf balls and 750,000 recycled-content golf tees used to create tournament WM water features, all will be reused.
- More than 16,000 pounds of unused food was donated to a local non-profit.

### WATER



Since 2011, graywater from cooking and cleaning has been reused in the portable toilets, resulting in significant water savings.

## ECONOMIC IMPACT

In addition to demonstrating environmental stewardship, The Waste Management Phoenix Open is among the largest contributors of economic impact from a golf event across the nation.

**\$231,700,000**  
2013 total economic impact

## GOOD WORKS

Through charitable giving, community stakeholder engagement, and involvement of students and underrepresented groups, the Waste Management Phoenix Open was able to impact the lives of citizens in the surrounding community.

**Over \$6 Million**  
2013 charitable donations



### Community Engagement Programs & Events:

- CBS Outdoor Special Olympics Open
- Standard Bearer Program
- First Tee Dream Day



### Community Outreach:

- Veterans Volunteer Program
- Youth Involvement





# 1.0 Introduction

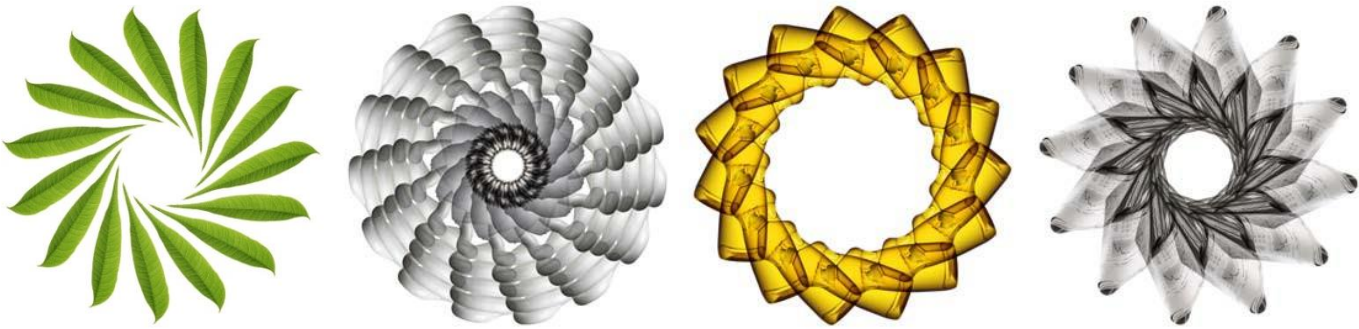
(2.1, 2.4) The Waste Management Phoenix Open (WMPO)—the best-attended golf tournament in the world—takes place each year in Scottsdale, Arizona, a city with a population of 221,020, which welcomes more than 500,000 fans annually to the “Greatest Show on Grass.”

(EC1, EC9, E01) Waste Management and the Thunderbirds realize that every choice we make during the months of planning for the WMPO affects our claim to the title of “The Greenest Show on Grass”. The sports industry is advancing environmental causes around the world, from local marathons to the 2012 London Olympics. The Thunderbirds, Waste Management, the PGA TOUR, TPC Scottsdale and all of the stakeholders will continue to be path makers on this journey towards increased sustainability. Along the way, we are thrilled to share best practices so that other sporting events and venues can do their part to green the games.

In addition to demonstrating environmental stewardship, the Waste Management Phoenix Open has one of the largest economic impacts from a golf event across the nation. Total economic impact from the 2013 event was \$231.7 million.



## 1.1 Statement from Waste Management



### The Sustainability Drivers

(1.1) At Waste Management, we believe sustainability is a journey. Like most journeys, the road to sustainability is both challenging and fulfilling. Our involvement with the 2013 Waste Management Phoenix Open is a perfect example. Entering our fourth year as the event's title sponsor, we introduced a goal that many said was unattainable—Zero Waste. We, of course, felt otherwise and I will add that there is no greater success than that which comes from defying conventional wisdom. We've also discovered, as a company, that when we collectively set our sights on a common goal, there is much that we can achieve.

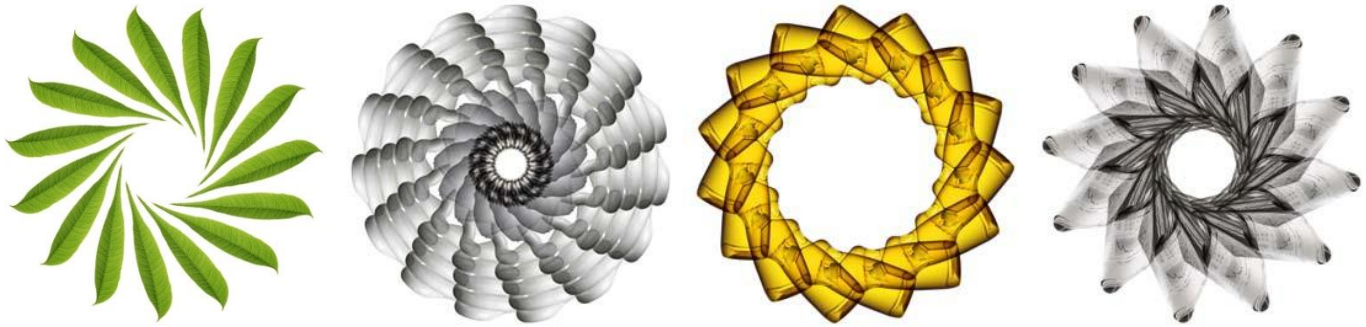
In this year's sustainability report, we acknowledge the people who made this year's event the most successful one ever. Our journey wouldn't be possible without the efforts of these true sustainability drivers, helping steer us in the right direction. At the top of this list are the tournament's fans—more than 525,000 of them—including an all-time Saturday record crowd of 179,022. These fans have become our tournament's greatest asset, instrumental in setting us apart from any other sporting event in the world and a vital component of attaining Zero Waste. Next, our sponsors, vendors and concessionaires—all of whom have remained faithful to our sustainability journey and have been an integral component of our efforts since day one. Another long-standing contributor to success is our annual volunteer program, implemented in conjunction with the Thunderbirds. Lastly, I would like to acknowledge the Waste Management Sustainability Services team, who continuously delivers and innovates to attain these sustainability goals that many say are unattainable. To validate everyone's efforts at the 2013 Waste Management Phoenix Open, the Council for Responsible Sport verified our numbers and our approach by awarding us with a Gold Certification status - a first for any PGA TOUR event in the world.

As we look ahead to year five as the tournament's sponsor, we cannot wait to step up again, and make the 2014 Waste Management Phoenix Open, the "Greenest Show on Grass" - ever!



**David Aardsma**  
Chief Sales and Marketing  
Officer  
Waste Management

## 1.2 Statement from the Thunderbirds



### Four!

(1.1) Our fourth year of working with Waste Management to host the 2013 Waste Management Phoenix Open has been nothing short of phenomenal. It was a tournament highlighted again by record-setting crowds, with well over half a million fans in attendance. If there's anything that sums up the spirit of this event, it's the people who turn out and show their support in increasing numbers each year.

So, what does record attendance mean to the Thunderbirds organization? The best word, perhaps, is success! As a charitable institution, the Thunderbirds donate all of the event's net proceeds to social causes - from caring for the underprivileged to helping dedicated athletes striving to make the United States Olympic team. Since we started raising money for Arizona charities, we have raised more than \$80 million dollars. We do this by being environmentally, economically and socially responsible.

We believe that our social responsibility as a benevolent institution is only successful if we are economically viable *and* we care for the environment around us. That is why Waste Management is a perfect partner in this undertaking—because we passionately share a common goal, sustainability.

This year was groundbreaking on several fronts, from the record attendance to meeting and exceeding our ambitious sustainability goals. The way we've conducted the tournament has truly changed through the years. Although the nature of the game remains the same, and the spectators' experience is as adrenaline-charged as ever, we are able to mitigate the event's environmental impact, at the same time providing significant year-over-year improvement in our overall social cause and economic benefit to our community. That's an impressive feat.

Join me as we present to you this year's Waste Management Phoenix Open 2013 Sustainability Report and discover why we continue to be the "Greenest Show on Grass!"

Outstanding!!



**Tom Altieri**  
Tournament Chairman  
2013 Waste Management  
Phoenix Open  
Thunderbirds



## 2.0 About This Report

### 2.1 Reporting Cycle and Framework

(2.10, 3.2, 3.3, 3.5, 4.11, 4.12) This is the fourth annual WMPO Sustainability Assessment Report; 2010 was our baseline year. In 2011 we began operating under British Standard 8901, a sustainable event management system, developed specifically for the events industry. The standard was replaced by ISO20121 in 2012, and defines the requirements to ensure an enduring and balanced approach to economic activity, environmental responsibility and social progress relating to events. In 2012 we began using the Global Reporting Initiative (GRI) reporting framework, and in 2013 we continue to self-certify. In 2013, we worked with the Council for Responsible Sport (the Council; CRS), which formally recognizes the successful completion of a socially and environmentally responsible sporting event. We achieved Gold certification from the Council, marking the first certification for a golf tournament. WM also worked with Underwriters Laboratories Environment Inc. (ULE) for a third-party verification of the event's diversion, achieving 100% landfill diversion rate with 12% incineration with energy recovery. Waste Management hopes to set the standard by which all tournaments are measured. Please see Appendix A for a list of credits achieved.

Use of ISO20121 sustainable management system, reporting using the GRI framework, and third party certification of sustainability initiatives by the Council are all voluntary activities.

*"The Waste Management Phoenix Open is by far the biggest and most complex event to have achieved certification from the Council for Responsible Sport. To have earned Gold Certification, and to have achieved every credit applied for is a remarkable accomplishment. As you would expect, the Waste Management team had every resource management challenge completely under control, but they excelled in all areas of sustainability -- from purchasing to food to community legacy -- and their communications efforts were educational and inspiring. In terms of environmental and social responsible event production, the Waste Management Phoenix Open was the total package."*

- Keith Peters, Executive Director, Council for Responsible Sport

### 2.2 Report Boundary and Scope

(3.1, 3.5 3.6, 3.7) The boundary and scope of the Sustainability Management System for the 2013 WMPO event address the full range of material economic, environmental, and social impacts of the WMPO. The reporting period is November 1, 2012 through May 15, 2013. The physical boundary of the event, from set-up to tear down, includes the following: the golf course and temporary structures, parking lots, shuttle drop-off area, and the Birds Nest. Excluded from the physical boundary, and therefore the material economic and environmental impacts, are the TPC Scottsdale Clubhouse and the official hotel, the Fairmont Princess. The scope of the event's inputs and outputs for this report is as follows:

- **Event inputs** are defined as any material used during the construction, operation, or deconstruction of the event. It is important to note that material or energy inputs may or may not be under direct ownership or control of the event organizers (i.e., the Thunderbirds). Ownership or control of the inputs can affect which recommendations are implemented and the timeline for implementation. Examples of event inputs include diesel fuel, water (potable and non-potable), electricity, propane, merchandise and promotional items.
- **Event outputs** are defined as any product or non-product generated or created as a result of the event.
  - **Product outputs** are items produced for the event that have marketable value. Examples of product outputs include merchandise, giveaways, printed materials, consumable foods and beverages.
  - **Non-product** outputs are items produced as a consequence of event operations but that have no market value. Examples of non-product outputs include trash, carpet, scrim, used bottles and cans, greenhouse gas emissions, food waste, gray water, and sewage.

## 3.0 About the Waste Management Phoenix Open

(2.7) 2013 marks the 78th annual Phoenix Open tournament, making it one of the five longest established events on the PGA TOUR. The WMPO is a televised public event, attended by professional athletes, celebrities, and the general public. In 2013, the WMPO was played January 28 through February 4, at TPC Scottsdale and attended by 525,821 fans.

### 3.1 About the Thunderbirds

(2.1, 2.2, 2.3, 2.4 2.5, 2.8, 4.1) The Thunderbirds have been organizing the WMPO in the Valley of the Sun since 1937. The mission of Thunderbirds Charities, a 501(c)(3) non-profit corporation based in Phoenix, Arizona, is to assist children and families, help people in need and to improve the quality of life in their communities. To date, they have raised more than \$80 million through their WMPO activities. The active Thunderbirds, of which there are 55, volunteer as chairmen of specific aspects of the WMPO, with activities that change each year. In the fall of 2013, the Thunderbirds established a new position of sustainability chairman for the 2014 WMPO. Moving forward, the sustainability chairman will be the point of contact for all aspects of sustainability at the tournament.

For more information on the governance of the Thunderbirds, please consult the [WMPO](#) website and Thunderbird [fact sheet](#).

### 3.2 About Waste Management

(2.2, 2.3, 2.5, 2.4, 2.8, 4.1) Based in Houston, Texas, Waste Management is the leading provider of comprehensive environmental services in North America. Through its subsidiaries, the company provides collection, transfer, recycling, resource recovery, and disposal services. It is North America's largest residential recycler and a leading developer, operator and owner of waste-to-energy and landfill gas-to-energy facilities in the United States. The company's customers include residential, commercial, industrial, and municipal customers throughout North America.

Waste Management has been a partner of the Phoenix Open for more than 13 years, providing waste, recycling, and portable restroom services and sustainability consulting. As the title sponsor, Waste Management, in partnership with the PGA TOUR and the Thunderbirds, is dedicated to making the Waste Management Phoenix Open the greenest tournament on the PGA TOUR. The tournament is also a major platform for showcasing Waste Management Think Green solutions, including the Four Rs - reduce, reuse, recycle and recover. There were no significant changes to the organization during the reporting period.

For more information on Waste Management governance, please visit the Waste Management [website](#).

(2.10) The WMPO was awarded "Best Title Sponsor Integration" by the PGA TOUR at the TOUR's Tournament Advisory Council (TAC) Meeting for its 2011 tournament at TPC Scottsdale. Waste Management was recognized for the integration of their brand and all of their efforts related to sustainability through education, branding and messaging along the course.

In December 2012, Waste Management Phoenix Open was awarded "Most Engaged Community" by the PGA TOUR for its 2012 tournament at TPC Scottsdale. The award recognized Waste Management Phoenix Open not only for the tournament's astounding number of spectators, but also its engagement with community leaders, businesses, vendors and its \$5 million donation to more than 100 Arizona charities.





### 3.3 About TPC Scottsdale



(EN11, EN25) TPC Scottsdale is a 36-hole resort and public golf facility, which sits on 400 acres in the McDowell foothills of the Sonoran Desert. The property is a flood control basin for the Central Arizona Project, which is owned by the Bureau of Reclamation. The assets of the facility are owned by the City of Scottsdale and the PGA TOUR is the managing partner.

(4.11, EN9, EN11, EN12) TPC Scottsdale has been part of Audubon International's Cooperative Sanctuary Program since 1995. Sixteen acres on the 400-acre property have been devoted to naturalized habitat areas, while a total of 200 acres are desert vegetation and landscaping. The golf courses have 15.2 surface acres of open water on four lakes that support several species of wildlife and fish, which is very difficult to find in a desert environment.

In 2012, TPC Scottsdale was the proud recipient of the 2012 GCSAA / Golf Digest Environmental Leaders in Golf Award for the fifth time.

For information on the risk of climate change to golf in Phoenix, see Appendix B. For more on TPC Scottsdale, including how they are approaching the risk of climate change, see Appendix C.

## 4.0 Sustainability at the WMPO



(1.2, 3.9, 4.11, EN18, EN26, SO9) Each year, we have the opportunity to compare and improve on our sustainability initiatives, taking into consideration feedback from fans, vendors, volunteers and employees. Over the last four years, with the 2010 WMPO as a baseline, a gray water pilot project was implemented, alternative energy sources were utilized, and overall greenhouse gas emissions were reduced. Data tracking and reporting is also constantly being improved. Using ISO20121 as a sustainable management tool, the Global Reporting Initiative as a reporting framework, and the Council for Responsible Sport as a third party to verify our sustainability initiatives, the WMPO will continue to be “The Greenest Show on Grass”.

### 4.1 Zero Waste Challenge

(1.2, EN1, EN22) In 2012, we launched the Zero Waste Challenge, an initiative aimed at controlling event materials and educating attendees so that eventually zero waste is sent to the landfill. In the second year of the Challenge, we strived to improve the management of event material inputs, outputs and disposal, and expand vendor and fan education of proper waste disposal.

In continuing with the Zero Waste theme from 2012, there were once again no trash receptacles on the golf course. Instead, WM positioned recycling and compost bins for all public and back of house operations; this setup captured separate recoverable recycling and compost streams.

(3.9) Waste data are tracked by weight tickets and provided by WM Four Corners Market Area’s local operations team in Phoenix. Every year, glass, plastics #1 polyethylene (PET), #2 high-density polyethylene (HDPE), #4 low-density polyethylene (LDPE), and #5 polypropylene (PP), metals, mixed paper, and cardboard are recycled in one stream. In 2011, we started composting food scraps.

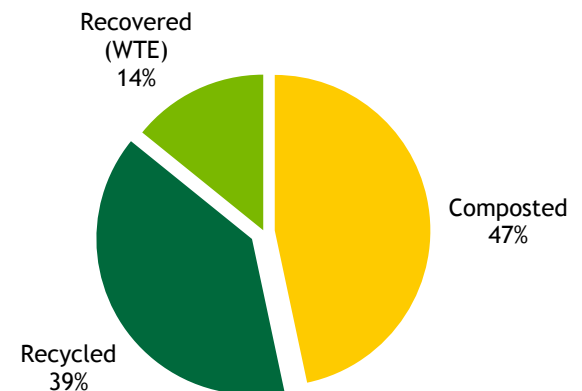
The keys to our success with the Zero Waste Challenge in 2013, and what we consider to be best practices in general, are:

- Promoting a collective vision that Zero Waste is achievable
- Continuously identifying areas of improvement
- Earliest possible engagement with vendors to evaluate all event materials before they arrive on site; providing a clear Sustainable Procurement Policy and Sustainable Giveaways Guidance; and ongoing communication from the Thunderbirds to all stakeholders on the importance of sustainability at the WMPO

- Working with the Thunderbirds to establish a sustainable printing policy
- Working with the Thunderbirds to ensure that eventually all of their event materials will be recyclable, compostable or reusable
- Clear and consistent communication indicating what material goes into which bin
- Positioning volunteer Recycling Ambassadors around the most populated areas of the golf course to provide education about waste disposal as well as sustainability
- In line with policies, providing all Recycle Ambassador volunteers with apparel that is reusable and sustainably produced
- Monitoring to ensure that material collected from bins on the course ends up in its designated compactors and roll-off containers prior to being hauled from recycling and compost facilities
- The ability to sort compostable material, recover all recyclable material contaminating the organic material stream, and to turn organic material into compost
- Recycling a wide range of materials through single stream recycling and the use of state-of-the-art sorting equipment at WM's recycling facility
- Promoting the goal of diverting 100% of WMPO waste from the landfill in 2013 and in years to come.



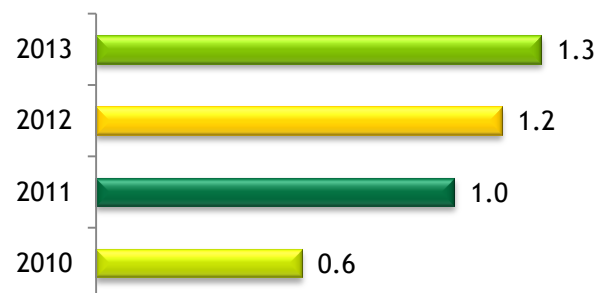
Chart 1: Materials Diverted by Percentage, 2013



(2.10, EN1, EN2) In 2013, we achieved our goal of diverting 100% of all tournament materials from the landfill. This was calculated in the same way that most events and businesses report on their waste diversion performance, by measuring the proportion of different streams leaving their sites or venues. The methodology is accepted by most bodies that verify or certify these measurements, from the U.S. Green Building Council to the Council for Responsible Sport. In 2013, the WMPO took the next step and had ULE verify our waste diversion rate. For an event with total attendance exceeding 500,000, the Zero Waste Challenge is a success that propels our sustainability initiatives to a higher level than ever before.

However, WM's vast experience in materials management has shown that reporting on this basis alone can be misleading, and to improve on our diversion year over year we must have a greater understanding of what is truly recycled and composted. To that end, all waste streams were highly scrutinized after they were removed from TPC Scottsdale, with materials sorted by hand and using state-of-the-art equipment. After sorting, recyclables were baled and food-related waste was sent to a nearby compost facility. As decomposition into compost progressed, the compost piles, or wind rows, were turned and any non-compostable material was returned to WM. In a similar fashion, as recyclables were separated and baled, difficult to recycle materials and residue were collected. Due to changes in commodity markets, materials such as our green mesh fence and turf could not be recycled in 2013. These materials were sent to GeoCycle, a co-processing plant that recovers the energy and mineral content from waste for beneficial re-use as fuel for energy generation. Residue was sent to landfill.

Chart 2: Pounds of Recovered Waste Per Attendee, 2013





### 4.1.1 Reuse

(SO1, EO5, EN2, EN27) Reusing materials each year and contracting with vendors who reuse materials prevents tons of waste from going to landfill. The amount of materials used to set up the WMPO requires a firm commitment to reuse.

Signage is another area where there is a lot of potential for reuse by contracting with manufacturers that share our goals. In 2013, the WMPO used 62,999 square feet of signage, 43.8% of which was reused from the 2012 WMPO. Eighty-eight percent of all 2013 signage is being stored for reuse for the 2014 event. See the Signs and Construction sections within 4.1.2 Procurement for more details.

In addition to this, the main WM logo water feature was made with 140,000 used golf balls. After the tournament, the golf balls were donated to the Junior Golf Association of Arizona, a local non-profit youth organization, and were used for their “Hole-in-One Challenge”. Golfers, ages 8 to 18, used these golf balls while they played with pros, and if they hit a hole-in-one into WM recycling bins, they received passes for the 2014 WMPO. The other WM water feature incorporated 750,000 golf tees made from 100% recycled content. These tees were maintained and will be reused at the 2014 WMPO.

Food donation is not exactly reuse, but in 2013 more than 16,000 pounds of unused food was donated to WasteNot, a local non-profit food reuse organization that delivers perishable food to those in need. WM and the Thunderbirds will work on further expanding this vendor food donation program in at next year’s event.

### 4.1.2 Procurement

(EO9) Procurement policies aiming to increase sustainability performance for the event are driven by stakeholder priorities, international protocol ISO21021, and standards such as those referenced in the GRI framework.

#### Food and Beverage Service Items

(PR1, SO9, EO8, EO9) To support the ambitious goals of the Zero Waste Challenge, all vendors were asked to sign a Zero Waste Challenge Participation Agreement, or Vendor Guidelines of Acceptable Materials, in which the vendor agreed that all materials brought on site would be locally recyclable, compostable or reusable. Compostable materials accepted by the local facility met ASTM D6400 or 6868 requirements or were certified by the Biodegradable Products Institute.

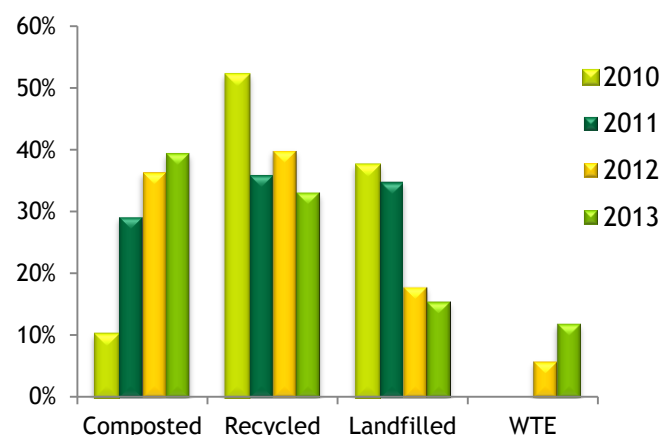
The agreement also included a commitment to train vendor staff to sort waste appropriately before, during and after the event.

In 2012, food, paper towels, plates and cups, wooden stirrers and biodegradable utensils were turned into compost. A small percentage was sent to a waste-to-energy facility. In 2013, similar materials were composted, but we worked with vendors to ensure that all plates, bowls, food containers, hot drink cups, utensils and any items used for food service were compostable. For example, in 2012 some utensils were recyclable and some compostable. In 2013, we attempted to eliminate this type difference to minimize confusion among vendors, employees and spectators. Waste Management Sustainability Services (WMSS) consultants worked with vendors throughout the event to determine if vendor guidelines had been adhered to and address any issues that arose. See Appendix D for Vendor Guidelines of Acceptable Materials.

Table 1: End-Of-Life Management Of Waste, in Tons

	2010	2011	2012	2013
Composted	21	86	136	160
Recycled	107	106	149	134
Waste-to-energy	-	-	22	49
Landfilled	77	102	67	63

Chart 3: End-of-Life Management of Waste, by Percent of Total



## WM Promotional Items and Giveaways

(3.9, EN2, EN27, EO9) In procurement of Waste Management's sustainable event giveaways and promotional items, we looked for items that were designed and crafted from 'green' and 'sustainable' sources. We considered products that were reusable, certified organic, sustainable or eco-friendly, manufactured with recycled content, and recyclable to meet these requirements. Those responsible for purchasing promotional items provided data on the items and the WM Brand Store provided a spreadsheet of all items purchased after the event.

We analyzed promotional items procured by both quantity and cost to paint a clear picture of sustainability. In terms of cost, 99.9% of the promotional and giveaway items purchased were reusable and so encouraged reducing waste. 9.3% of all apparel was made from 100% organic cotton, 64.7% of all items were manufactured from 100% recycled content and 11.5% were manufactured with up to 65% recycled content.

When we consider the number of promotional items procured, 98.1% were reusable and so encouraged reducing waste. In addition, 57.9% were manufactured from 100% recycled content and another 6.6% were manufactured with up to 65% recycled content. The items that encouraged reuse included light up sunglasses, hydrosilk golf towels, light up martini glasses, lanyards, beer mugs and pillowcases. All of these items were shipped in packaging that is 100% recyclable. For more information on the specific items purchased, please see Appendix F.

## Vendor Giveaways

(EO9) A Sustainable Giveaways Guidelines document was distributed to all vendors and sponsors prior to the event to assist them in selecting promotional items. It is important that merchandise or promotional items enabled or encouraged users to reduce, reuse or recycle and to consider the environment through messaging placed on or distributed with the items. As a result, all items given to attendees by vendors were reusable, recyclable or compostable. In some cases, these products were additionally made from sustainable materials. If WM encountered a giveaway that was not divertable or reusable, the vendor was asked to remove the item from their area and not distribute it to attendees. See Appendix E for Sustainable Giveaways Guidelines.

## Signs and Printing

(3.9, EC6, EN2, PR1, SO9, EO9) Like all materials that are brought to the event, signage should be reusable, recyclable or compostable. To ensure designers and manufacturers understand our goals, each year we request from them a list of all signs created for the tournament. Manufacturers must specify whether each sign from the previous year was reused, recycled or sent to landfill, and the type of materials, sustainability aspects, and square footage of new signs. Although new signs are needed when sponsorships and vendors change, every effort is made to reuse signs, create signs using recyclable materials, and have signs made by local printing companies.

In 2013, the WMPO used 62,999 square feet of signage. WM tracks the sustainability of this material: 6.1% of all signs used were made of approximately 63% post-consumer recycled content and recyclable, 17.5% was made from recyclable material, and 76.3% was reusable. In addition, 43.8% of this signage was reused from the 2012 WMPO and 88.3% of all 2013 signage is being stored for reuse for the 2014 event. Sign manufacturers are sourced locally around the Phoenix area and use water-based, latex inks in their printing process.

Daily tickets are printed on paper made of 10% post consumer recycled content. Pairing sheets, Tee Off Luncheon invitations, parking passes and parking maps are printed on paper that uses 30% post consumer recycled content that is Forest Stewardship Council Certified. Badges are printed on paper made of 50% total recovered fiber and are also Forest Stewardship Council Certified. The paper for the pairing sheets, luncheon invitations and parking maps is also certified by the Sustainable Forestry Initiative and the Programme for the Endorsement of Forest Certification. In the printing process, 99.4% of the ink used was soy, and the printer uses a mixing system that uses 20% less ink and chemical-free plate processing. All manufacturing and production data for signs and printing processes came from the printing companies, which are local.

## Cleaning Products

(PR1, EO9) Non-product output such as the chemicals used to treat the portable toilet waste and the products used to clean portable toilets were non-toxic chemicals and free of formaldehyde and alcohol. In 2013, we also selected a vendor that only used biodegradable chemicals. Cleaning products did not use aerosols and were free of butyl and glycol. (EN2) Toilet paper provided was made of 100% recycled content. (3.9) Material Safety Data Sheets and purchase information was made available by WM Four Corners Market Area.



## Construction Materials

(EN2, PR1, SO9, EO9) Wood, metal, canvas, electrical wiring and water and sewage pipes used to build temporary structures were either rented or reused every year.

### 4.1.3 Recycling Ambassadors

(EO5, EN22) Volunteers serving as Waste Management Recycling Ambassadors were used to educate tournament fans, monitor recycling and compost receptacles and increase awareness of the diversion goals. At the 2013 WMPO, WM increased the number of 4-hour Recycling Ambassador shifts from 290 to 767.

#### Roles and Responsibilities

(EN22) Recycling Ambassadors were strategically placed throughout the course in high-traffic areas and areas that generate large volumes of waste, such as concession/food court areas and viewing galleries. They were stationed at or in close proximity to recycling bins and food waste bins, serving as guides to assist fans with proper disposal of materials. Recycling Ambassadors actively engaged fans and answered questions. They were encouraged to watch for bins that needed to be emptied and to seek out operations staff if service issues arose.

#### Volunteer Management

(SO1) Support in managing the volunteer program before and during the tournament was critical. WM hired an intern to assist with recruiting, planning and managing the Recycling Ambassadors. Working with Recycling Ambassadors was considered an excellent hands-on experience in managing volunteers while providing the support needed to run the program.

The WMPO Volunteer Coordinator Intern managed the volunteer recruiting process by contacting community groups to provide volunteers by sending emails, making follow-up calls, and supporting prospective volunteers with the online registration process. Once recruitment was complete, the intern communicated with volunteers regarding training materials, parking information, instructions needed to complete shifts, participated in a course walk-through and training, and actively managed volunteer shifts throughout the tournament.

#### Training

(LA10) A comprehensive training packet was distributed to volunteers via email approximately one week before the event. This gave volunteers the opportunity to read through the materials on their own time and provided all the information they would need to complete their shift.

A brief training session/review was conducted after volunteers checked in for their shift. This allowed volunteers to have their questions answered and to update them on specific trends and materials seen on the course.

#### Incentives

(PR1) Each volunteer received the following:

- Walking Pass: Good for any one day of the event. If the volunteers wanted to use this pass prior to the day of their shift, they were to come to the Recycling Ambassador tent at the entrance to collect their pass.
- Recycling Ambassador vest and t-shirt: Volunteers received a recycled PET vest and 100% organic cotton long sleeved t-shirt when they checked in on the day of their shift and were allowed to keep both items.





## 4.2 Energy

(EN3, EN4, EN5, EN6, EN7) At the WMPO, energy is used by heavy-duty equipment to set up and tear down the temporary structures, to heat and cool structures, to power generators for leaderboards and light towers, and for cooking. It is also used to power trucks, cars, buses and golf carts to transport people and materials around at the event, remove waste from the event, and service portable toilets. (3.9) Energy data was provided by the Thunderbirds and event vendors.

Energy highlights from 2013 were:

- Due to warm temperatures, portable propane heating units in place for evening concerts at the Birds Nest used significantly less propane than previous years.
- Biodiesel use in generators for cool-food storage, leaderboards and temporary structures doubled in 2013, to 2,969 gallons. Biodiesel was also used in some shuttle buses.
- Since 2011, 100% of electricity, including golf carts, has been provided by renewable energy, purchased through the local utility, APS.
- Solar power has been used to completely power WM's hospitality tent since 2011.
- Solar light towers continue to be used in key locations on the course.



## 4.3 Water

(EN9, EN11) TPC Scottsdale is located in the desert southwest of the United States. Water is considered a scarce resource in the vicinity of the WMPO, which purchases its potable water from the City of Scottsdale, Arizona. The Scottsdale municipal water supply is sourced from surface water bodies including the Colorado, Salt and Verde Rivers, and twenty-five deep aquifer groundwater wells. There are no designated conservation or wetland areas in the immediate vicinity of the event site, although these types of sensitive areas are associated with the three surface water bodies from which the municipal water supply is sourced at various points throughout their courses.



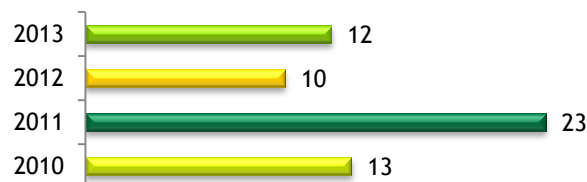
(EN9, EN25, SO9) TPC Scottsdale itself has water management policies that support the event's resource conservation efforts. For example, the four lakes at the golf course, totaling 15.2 surface acres, are lined, with concrete edging, to minimize water loss due to leakage and erosion. The water shed for the lakes themselves is reclaimed effluent from the City of Scottsdale. Native landscaping plants, computer-controlled pumping stations and an on-site weather station monitor soil conditions for efficient use of irrigation water. See Appendix C for more on TPC Scottsdale.

The event implements conservation measures to ensure that this valuable resource is used responsibly and limits pressures on the municipal water supply. Additionally, volunteers and employees are educated on water and energy conservation measures. For example, hand-washing stations used hand sanitizer instead of water and portable toilets in general use less water than conventional toilets.

(EN1, EN2, EN8) In 2011, a pilot project was initiated to reuse water from cooking and cleaning in the portable toilets, resulting in a savings of approximately 1,476 gallons. In 2013, this gray water initiative resulted in an increased savings of approximately 4,800 gallons, and WM continues to evaluate collection methods to increase the event's water conservation.

(3.9) For the 2013 event, WM set up protocols to track this fresh water usage and estimated that approximately 19,184 gallons were used in port-o-lets (POLs), or portable toilets. Approximately 25,313 gallons of water was sold as bottled water in 2013.

Chart 4: Ounces of Metered Water Use Per Attendee



## 4.4 Transport

(3.9, EN7, EN18, EN26, EO2, EO3) Fuel use and associated greenhouse gas emissions from transportation at the WMPO comes from vehicles used for hauling waste, servicing portable toilets, Mercedes-Benz sponsored vehicles used by golfers and their families, golf carts, and shuttle buses. Diesel and gasoline are non-renewable fossil fuels with relatively high greenhouse gas emissions. Low emissions are possible using human power (bicycles), flex fuel, natural gas, propane, hybrid, plug-in hybrid, all-electric vehicles, ultra low sulfur diesel, fuel cell, or other alternative fuels. Trucks used to haul waste have been powered by compressed natural gas (CNG) since 2011, emitting less than half the GHG emissions of diesel. Golf carts are electric and so fueled by renewable energy. Fuel data is provided by vendors. See Table 2 in Section 4.5 Greenhouse Gas Emissions for a complete list of fuels and associated GHG emissions.

(3.9, EN1, EN17, EN29) In addition to emissions from transport that we have some control over, for the 2013 WMPO, we estimated spectator air and car miles based on attendee surveys. Although the WMPO has no control over these emissions, we calculate them in order to maintain a comprehensive perspective about the event's carbon footprint. Duplicate entries that resulted from the survey being administered in groups that traveled together resulted in exclusion of some data; however despite this issue, WM was able to estimate the following from surveys:

- Approximately 4% of the fans took a local bus or party bus to the tournament.
- Approximately 8% of the fans walked, biked or took a cab to the tournament.
- Approximately 8% of the fans took a hotel shuttle or bus to the tournament.
- Approximately 23% of the fans flew to the tournament.
- Approximately 65% of the fans drove, parked, and took a WMPO shuttle to the tournament.
- Spectator air travel generated approximately 477,715.9 metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e).
- Spectator auto travel generated approximately 8,715.9 MTCO<sub>2</sub>e.
- WMPO Pro and Pro-Am player air travel generated approximately 3706.1 MTCO<sub>2</sub>e.
- WMPO Pro and Pro-Am player auto travel generated approximately 1.8 MTCO<sub>2</sub>e.
- Vendor air travel generated approximately 582.4 MTCO<sub>2</sub>e.
- Vendor auto travel generated approximately 30.0 MTCO<sub>2</sub>e.

For CRS certification, WM tracked the ratio of conventional versus alternative energy transportation. Alternative energy transportation included WM CNG Trucks, POL CNG Trucks, electric golf carts, electric-powered scooter chairs, and bicycles used by the local police departments, fire departments and EMTs. It was determined that 63.3% of vehicles used for the 2013 WMPO were alternative energy transportation. WM offset 71 MTCO<sub>2</sub>e, 100% of intra-site transportation emissions.

(EN26) The WMPO encouraged the use of public transportation through an educational campaign using signage, marketing and advertising prior to the event. Shuttle buses or other low-impact transportation methods were available to move tournament attendees to and from the event. As in previous tournaments, shuttle buses were provided from an offsite parking lot to the event (park and ride), resulting in fewer transportation-related greenhouse gas emissions compared to private car commuting. For the 2013 event, WM posted a list of nearby hotels with free shuttles for guests, sustainable restaurants and green certified hotels in the area and worked with nine nearby hotels that offer free shuttle rides to the tournament. These hotels increased their promotions with large signage in their lobbies that informed more guests of the free transportation services.

## 4.5 Greenhouse Gas Emissions

Table 2 below shows all of the inputs and outputs and associated greenhouse gas (GHG) emissions from the WMPO from 2010 through 2013. The World Resources Institute Greenhouse Gas Protocol, The Climate Registry General Reporting Protocol, and the U.S. EPA's WARM model were used to calculate GHG emissions. (1.2, EN1, EN2, EN3, EN4, EN5, EN6, EN7, EN8, EN10, EN16, EN17, EN18, EN22, EN26, EN29, EO2, EO3, EO9, SO9)

Table 2: Inputs and Outputs of WMPO 2010, 2011, 2012, 2013

FUEL USE		2010	2011	2012	2013	2010	2011	2012	2013
		(GALLONS)				(MTCO <sub>2</sub> e) <sup>1</sup>			
Propane	heat, cooking	8,890	14,053	13,195	6,408	52	82	81	37
Diesel	shuttle buses	4,750	6,332	5,207	2,829	48	64	53	29
Biodiesel <sup>2</sup>	shuttle buses	-	-	-	1,213	-	-	-	11
Diesel	generators/equipment	3,220	4,668	5,577	3,883	33	47	57	39
Gasoline	sponsor cars	3,000	2,300	2,325	2,279	27	21	21	13
Diesel	sponsor cars	-	-	-	24	-	-	-	0.2
Diesel	waste/portable toilet service	2,270	1,166	1,624	1657	23	12	17	17
CNG <sup>3</sup>	portable toilet service	-	-	-	207	-	-	-	0.3
Biodiesel <sup>2</sup>	generators	190	-	1,099	2,969	5	-	10	28
CNG <sup>3</sup>	waste hauling service	-	1,804	482	519	-	2	0.4	0.1
Cooking Oil	recycled	600	325	350	350	-	-	-	-
ELECTRICITY		(KILOWATT HOURS)				(MTCO <sub>2</sub> e) <sup>1</sup>			
Electricity	conventional energy	125,691	-	-	-	76	0	0	0
Electricity	renewable energy	-	141,595	117,031	131,513	-	0	0	0
Electricity	solar	-	119	24	56	-	0	0	0
WASTE END-OF-LIFE MANAGEMENT <sup>4</sup>		(TONS)				(MTCO <sub>2</sub> e) <sup>1</sup>			
Composted	food scraps, food and beverage serving materials, wood	21	86	136	160	-4	-17	-27	-32
Recycled	plastics, metals, fiber	107	106	149	134	-299	-297	-417	-375
Waste-to-energy	scrim, turf, residuals	-	-	22	49	-	-	-1	-2
Landfilled	residuals	77	102	67	63	76	100	66	62
WATER <sup>5</sup>		(GALLONS)							
Water	fresh, metered	44,200	65,570	40,400	50,510				
Water	fresh, used in POLs	-	-	18,520	18,984				
Water	graywater, used in POLs	-	-	3,138	4,800				
Water	bottled	-	-	19,780	25,313				
TOTAL GREENHOUSE GAS EMISSIONS						2010	2011	2012	2013
						(MTCO <sub>2</sub> e) <sup>1</sup>			
						-39	14	-140	-173

1 MTCO<sub>2</sub>e is metric tons of carbon dioxide equivalent.

2 WRI categorizes biodiesel GHG emissions as metric tons of Biofuel CO<sub>2</sub> Emissions; this report uses this calculation and considers these totals as MTCO<sub>2</sub>e.

3 CNG volume is provided in gas gallon equivalent.

4 Emissions from recycling and composting are emissions *saved* by managing materials using these processes instead of putting them into the landfill. The EPA WARM model uses some defaults and averages in calculating greenhouse gas emissions from end-of-life management ([http://epa.gov/epawaste/conservation/tools/warm/Warm\\_Form.html](http://epa.gov/epawaste/conservation/tools/warm/Warm_Form.html)).

5 The calculations for POL water usage in 2012, both fresh and graywater, were made using averages from 2011 and 2013.





Many factors affect GHG emissions from year to year. Some examples are number of fans shuttled to the event, weather affecting time of play and therefore waste associated with meals, and weather affecting heating and cooling needs and therefore fuel use. Charts below show GHG emissions per source for 2010, 2011, 2012 and 2013; and for 2013 alone. (EN1, EN6, EN16, EN17).

Chart 5: MTCO<sub>2</sub>e per Emission Source for 2010, 2011, 2012, 2013

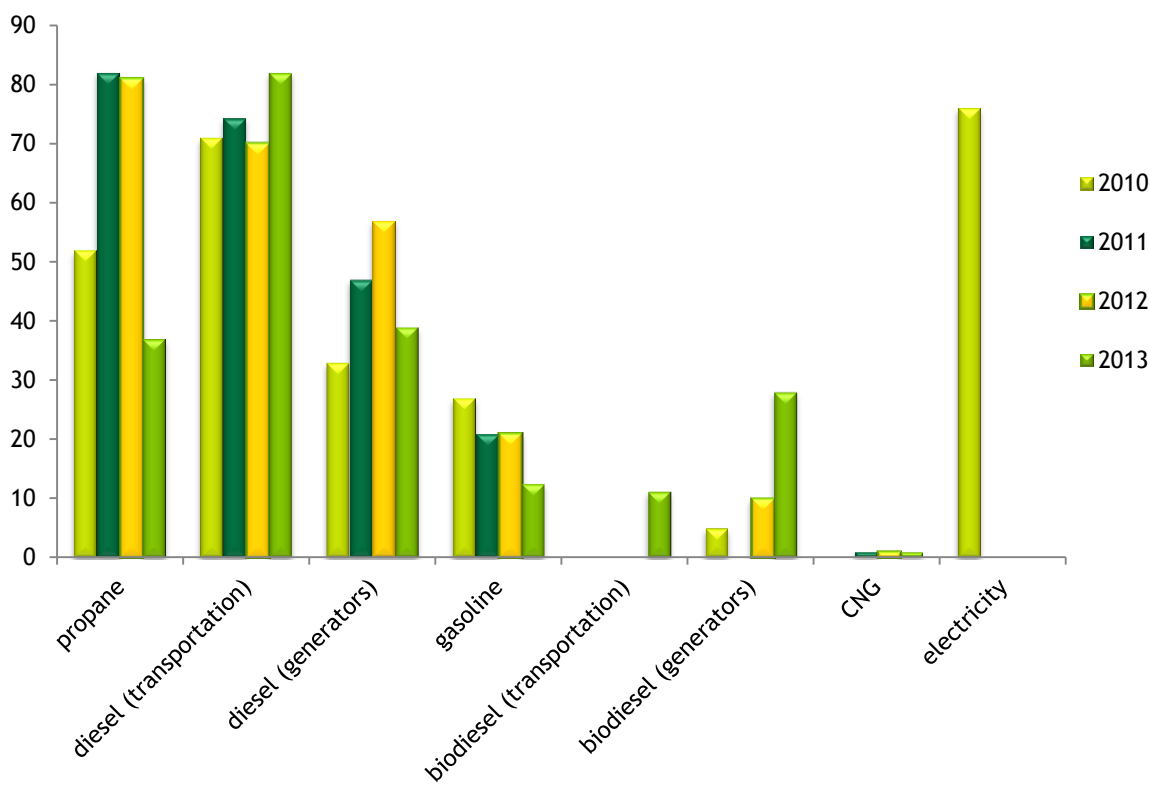
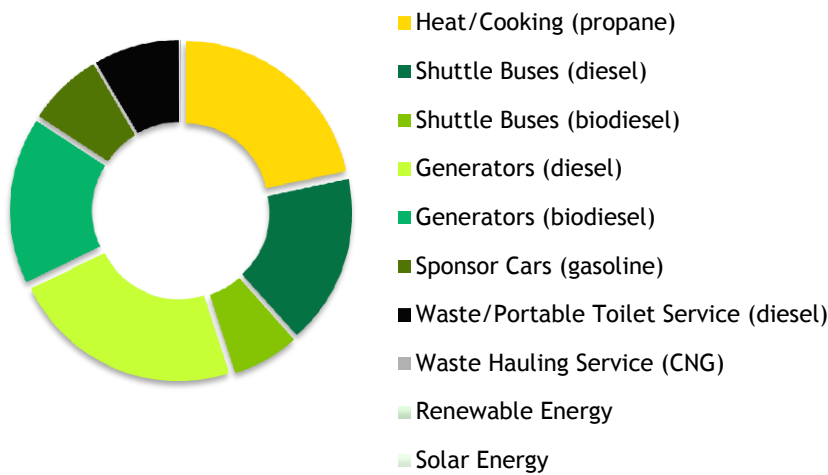


Chart 6: MTCO<sub>2</sub>e per Emission Source, 2013



## 5.0 Legacies

(E011) In branding the Waste Management Phoenix Open as the “Greenest Show on Grass” and by incorporating the technologies and innovations of title sponsor Waste Management, great efforts are made to ensure that the entire event is a model of sustainability, with positive impacts lasting long after the conclusion of the tournament. Through recycling, composting, energy generation from solar cells and biodiesel fuel, water conservation, material reuse, volunteers, attendee engagement and other successful sustainability initiatives, the Waste Management Phoenix Open is an example that sustainable events can succeed on any scale.

### 5.1 Stakeholder Engagement

(3.5, 4.8, 4.9, 4.10, 4.15, 4.16, 5.1, PR1, E05, E012) The success of many of these initiatives was dependent on the participation of the vendors, employees, volunteers and fans attending the 2013 WMPO. WM engages these stakeholders through surveys, partnerships and meetings to help determine what is material to the event.

#### Local Vendor Material Management

(4.8, 4.9) Prior to the 2012 tournament, WM worked with the recycling and composting facilities to create an “Acceptable Materials” guidance document: materials that could be easily recycled or composted locally. WM and the Thunderbirds then sent all vendors a letter about the upcoming Zero Waste Challenge. The list of acceptable materials was included as a contract addendum, with a space for signatures from the vendors. Shortly thereafter, the Thunderbird concession chairman sent all vendors an invitation to a meeting to discuss acceptable materials, find new distributors if necessary, and answer questions about the Zero Waste Challenge. The meeting was attended by approximately 50% of vendors; questions were answered by representatives from WM operations, the recycling facility, and the composting facility.

Similarly, as described in 4.1.2 Procurement, Food and Beverage Service Items, prior to the 2013 event we sent an updated Accepted Materials Guidance document and met with all available vendors to outline event sustainability goals and expectations. Vendors and suppliers were educated on material usage expectations, waste reduction policies and overall event goals directly impacted by vendor and supplier activities. This allowed event organizers and vendors/suppliers to work towards shared goals of maximizing waste reduction and minimizing material usage. Additionally, WM conducted phone interviews with all food vendors and expo tent vendors to review program operations, what materials could be used, expectations for back of house diversion, as well as food product information, water consumption and energy usage. During the tournament, WM audited every vendor.

#### Employee and Volunteer Engagement

(4.10) The program also relied upon the engagement and efforts of event employees and volunteers. To educate on the importance of minimizing their jobs’ environmental impact, employees and volunteers were provided with written and verbal educational materials outlining the importance of their jobs, starting several months prior to the event. They were also provided with pocket-sized cards to remind them of how to dispose of waste properly, and were instructed to lead by example.

#### Spectator Engagement

(4.10) Educational materials were distributed during the event that communicated the event’s overall sustainability goals and encouraged fans to participate in recycling and recovery efforts. Other educational methods included, but were not limited to, messaging on the golf course, signage and videos on event shuttles, information posted on the event website and tickets, special messaging in areas where specific activities/pilot programs were taking place, and local advertising prior to the event and engagement from Recycling Ambassador volunteers on course.

WM conducted a spectator survey with 380 event attendees in accordance with the Council for Responsible Sport guidelines to determine that:

- 12.4% of those surveyed had not previously played golf or attended a golf event
- 44.7% of that population intended to play golf or attend a golf tournament in the upcoming year

- 78.8% noticed that there are no trash containers on the course during the WMPO
- 37.1% were aware of what the tournament does to conserve water
- 32.6% knew about the alternative energy sources used at the WMPO. These initiatives were explained to spectators who did not know about them or wanted to know more

Additional information was submitted to CRS; please see Appendix G for survey results.

Prior to the 2014 WMPO tournament, the Thunderbirds concessions chairman will send all vendors the list of acceptable materials as part of their contract, with an invitation to an informational meeting similar to the 2013 meeting.

## The Waste Management Executive Sustainability Forum

(4.9, 4.10) Since 2011, Waste Management has capitalized on the WMPO advantage to attract spectators and golf fans from the business industry. These unique groups of stakeholders are the industry's movers and shakers, eager to be a part of WMPO's groundbreaking sporting event. WMPO being a "green" event, they are equally curious to discover the value of sustainability inside and outside their respective companies.

The WMPO coincides with a one-day forum, which is a carefully orchestrated, high-level discussion about sustainability, attracting business executives from various industries and public sectors. One of the specific goals of the forum is to attract a mix of sustainability experts, customers and business prospects, all contributing to an open-minded dialogue around sustainability principles, best management practices and bottom-line results.

Table 3: Sustainability Forum Information

INFORMATION ON THE SUSTAINABILITY FORUM	
Total number of Attendees	214
Change from previous year	+16%
<b>Ratings by Attendees responding to Forum Satisfaction Survey</b>	
Very Satisfied	62%
Somewhat Satisfied	23%
<b>"Waste Management is a sustainability leader"</b>	
Responded "very favorable" before forum	48%
Responded "very favorable" after forum	71%



## Select Quotes from the Forum

"Every part of the Sustainability Forum, from the speaker presentations to the group dialog, was extremely informative and inspiring. I have returned to my profession with a new understanding and passion for sustainability and industry's role in bringing about positive change in our world. Thanks to all of you who made this possible and your continued efforts."

- Andrew Cassilly, Resource Conservation Manager

Harford County Public Schools, Maryland (Forum attendee)

"I had a fabulous experience in Arizona. I took some photos of the set-up at the Open and have some ideas on placing WM containers at Duke when we meet. Great experience, great people and excited about how to move forward."

- Dr. Jay Golden, Duke University (Forum panelist)



## 5.2 Best Practices Application

(EO12) WM applied best practices identified during previous WMPO events in an effort to minimize environmental impacts and resource consumption, increase ease of implementation of event activities and minimize delays. In an effort to transfer this knowledge to both stakeholders and the public, WM engaged in formal meetings with the Thunderbirds and stakeholders to share successes, review event data, outline methodologies and identify areas for improvement for future events, including suggested improvements for procurement and supply chain activities.

WM looks for ways to share best practices learned at the WMPO. In the last year, we were on a panel of experts discussing food waste strategies at events at the Green Sports Alliance Annual Summit and on webinars provided by government and business interest groups. WM disseminated additional information to the public through the Golf Channel, NBC, other local news clips and information posted on WM.com and the PGA TOUR websites. Messaging released through Waste Management's internal web platform communicated event outcomes and best practices to WM employees.

## 5.3 Social Benefits

(SO10, EC8, EC9, EO5) Social benefits from the 2013 WMPO came from charitable giving, community stakeholder engagement, and involving students and underrepresented groups as much as possible.

### Charitable Donations

(EC1, EC8) The total amount of money raised by the Thunderbirds dollars in 2013 was not available at the time of publication. In 2012, the Thunderbirds raised \$5.5 million, and we expect the 2013 donation to be considerably higher than 2012. Donations are made to more than 100 different charity organizations throughout the year and used to fund additional improvements to the local community, ensuring a lasting positive impact from the 2013 WMPO.

The "Green Out for Charity" campaign highlights three charitable organizations: Keep America Beautiful, Keep Phoenix Beautiful and Arizona Forward; and enabled everyone to vote for their favorite charity by "liking" it on Facebook.

The Saturday of the tournament is "Green Out Day." For every person who wears green, the Thunderbirds donate "green". In 2013, this donation reached \$60,000, which was divided among three "Green Out for Charity" organizations: Keep Phoenix Beautiful received 50% (\$30,000) of the funds; Arizona Forward received 35% (\$21,000); and Keep American Beautiful 15% (\$9,000).

Each year WM challenges tournament participants to "Go for the Green" on the famed par-3, 16th hole with a four-round closest-to-the-pin contest. Player distances from the pin are calculated each day, then added together to reach a cumulative total on Sunday. The player with the lowest cumulative total wins the contest. In 2013, WM donated \$25,000 to "Keep America Beautiful", with 50% the local "Keep Phoenix Beautiful" chapter and 50 percent will go to "Keep America Beautiful National" Think Green Grant.

The Thunderbirds donated over \$100,000 to charities chosen by participants in the 2013 Phoenix Suns Charities Shot at Glory. Country Superstar Dierks Bentley won \$35,000 for the Phoenix Children's Hospital and Jim Pitman of the Phoenix Suns earned \$25,000 for the Phoenix Suns Charities. Olympic goal medalist Michael Phelps, former NBA star Julius "Dr. J" Erving, and Wounded Warriors along with various other athletes and business leaders took part in the event.

See Appendix H for more information on Thunderbirds charitable giving.

### Community Stakeholder Engagement

(SO1, EO5, EO6) WMPO supports multiple avenues to promote positive local community interactions including:

- Use of social media, such as Facebook and Twitter
- Providing free event entry to all law enforcement, firefighters/emergency services, active, reserve and retired military personnel (and one accompanying guest or family members)
- Providing volunteering opportunities (with a complimentary access pass) for teachers who bring their disabled students to the event



- The solar array at WM's 18th hole hospitality tent, powered by First Solar, (Phoenix)
- In December 2012, Waste Management Phoenix Open was awarded "Most Engaged Community" by the PGA TOUR for its 2012 tournament at TPC Scottsdale. The award recognized Waste Management Phoenix Open not only for the tournament's astounding number of spectators, but also its engagement with community leaders, businesses, vendors and \$5 million donation to more than 100 Arizona charities.

## Outreach to Underrepresented Populations

(E05, E06) The WMPO has targeted increasing participation of military personnel (active and retired) and differently-abled students as well as their teachers. These groups would likely be underrepresented without specific efforts to involve them in the WMPO.

To reach out to veterans, the American Legion - Post 35 was contacted for volunteer activities. Most veteran volunteers, however, reached out to see how they could be involved with the event and to volunteer. To reach out to active military personnel, the WMPO continually advertises that all active military personnel are allowed into the tournament free of charge. A special tent with an ideal view of Hole 18 is made available to military personnel and their families. It was estimated that more than 2,250 people took part in this offering.

The WMPO also sought out inclusion of differently-abled students and their teachers in the event. The Tempe Union High School District, Chandler Unified School District and Scottsdale Unified School District were contacted about opportunities for teachers to volunteer with their students at the event. The response was positive and a group of two special education teachers and eight students volunteered on Wednesday afternoon of the WMPO.



## Youth Involvement

(E05, E06) Youth engagement is another important social benefit upon which the WMPO strives to expand. This is accomplished by involving grade school and high school students in the Standard Bearer Program and First Tee Dream Day activities. Standard Bearers are volunteers who hold the player score signs and walk around with a player grouping. A large percentage of these volunteers are students who have demonstrated that they can maintain a high level of work in the classroom and earned an opportunity to attend the WMPO Pro-Am or Pro event during the school week. Some volunteers are not students. The breakdown of who was involved at the 2013 WMPO is as indicated in Table 4 below.



Table 4: Youth Participation in Standard Bearer Program

	GRADE SCHOOL STUDENTS	HIGH SCHOOL STUDENTS	TOTAL YOUTH VOLUNTEERS	TOTAL VOLUNTEERS
Wednesday	8	23	31	52
Thursday	9	67	78	96
Friday	12	97	109	109
Saturday	8	34	42	52
Sunday	6	39	45	55
<b>TOTALS</b>	<b>43</b>	<b>260</b>	<b>305</b>	<b>364</b>

First Tee Dream Day activities occur Tuesday of tournament week. In 2013, 356 kids were bussed in from area schools, many from the inner city who have never experienced the game of golf in any form, for a morning of fun activities finishing with a bagged lunch. Activities included: Motivational Speeches by PGA TOUR Professionals, Trick Shot Show, and the Junior Golf Clinic Presented by PING. These activities took place on the TPC Champions Course Practice Range. The breakdown of who was involved with these activities at the 2013 WMPO is shown in Table 5.

There were also First Tee activities on the Monday and Wednesday of the WMPO. This included practicing with the Pros for selected juniors from the First Tee of Phoenix, JGAA, SWSPGA, LPGA Girls Golf Program and Special Olympics. These students had the opportunity to practice with PING Tour Professionals. Students also received a Behind the Scenes Tour.



Table 5: Youth Participation in Dream Day Activities

SCHOOL	SCHOOL DISTRICT	NUMBER OF STUDENTS
Robson School-6th Grade	Mesa	200
Chandler School District	Chandler	40
Scottsdale Country Day School	Scottsdale	20
Salt River School District	Salt River	72
Other Individuals (with First Tee)		24
<b>TOTAL ATTENDEES</b>		<b>356</b>

### Participation of Differently-Abled Individuals

(EO5, EO6) The Thunderbirds and WM additionally try to provide opportunities for differently-abled and disabled individuals to participate in WMPO activities. This is accomplished each year through the CBS Outdoor Special Olympics Open. In 2013, Arizona Cardinals' Calais Campbell and Jay Feely, current and former Arizona Diamondbacks' Ian Kennedy, Willie Bloomquist and Luis Gonzalez, as well as Phoenix Suns' Channing Frye and former Sun Tom Chambers participated in the CBS Outdoor Special Olympics Open on Tuesday at the 2013 Waste Management Phoenix Open. PGA TOUR stars Ricky Barnes and Chad Campbell also took part in the event. Held on TPC Scottsdale's Putting Green, the Special Olympics Open features 10 Special Olympians, 10 celebrities/sports stars, 10 business leaders and PGA TOUR professionals all competing in a putting challenge. The following business leaders took part in the 2013 event: Arte Moreno, Owner of the Los Angeles Angels, Kevin Rowe, Owner of Lerner and Rowe, Tim Hovik, GM and Owner of San Tan Ford, Doug Parker, CEO of US Airways, Terry Morrison, VP at Crescent Crown, Susan Morris, VP at Albertson's Market, Jim Trevathan, EVP and COO at WM, David Aardsma, Chief Sales & Marketing Officer at WM, Steve Neff, VP of Business Development and Sports Marketing, and Marcos Ramos, Project Manager at WM. This pre-tournament event was open to all ticket holders and media.



## 5.4 Economic Benefits

(EC1, EC9) In 2012, the WMPO's economic benefits were assessed in an Economic Impact Study conducted by ASU Center for Competitiveness and Prosperity Research in the W. P. Carey School of Business. Economic impact was defined and estimated as the increase in spending in a community as a result of the existence of an event or organization. Within the context of the WMPO, this included the expenditures of visitors who identified that the WMPO was a key factor in visiting Arizona, plus organizational spending by the Thunderbirds and others involved in the tournament, and indirect multiplier effects. (EC1) These results demonstrate that the Waste Management Phoenix Open is among the largest contributors of economic impact from a golf event across the nation. Total economic impact was \$231.7 million. To gauge the economic impact of the 2013 WMPO, WM extrapolated key data from the 2012 WMPO Economic Impact Study onto 2013 participant demographics and focused on the financial impact of event attendees.



## 6.0 Conclusion

In 2013, the WMPO again had more fans attend than ever before, repeated and improved upon our successful Zero Waste Challenge, and continued to decrease our carbon footprint. We are proud of our commitment to being the Greenest Show on Grass and what that means to the community in which the Waste Management Phoenix Open is played. By generating less waste, making good use of the waste generated, purchasing renewable energy and using alternative energy and conserving water, we will play our part to leave the planet in better shape than we received it.



# Appendix A Council for Responsible Sport Credit Certification Index

(EC1, EC9, EN1, EN2, EN3, EN4, EN5, EN6, EN7, EN8, EN10, EN12, EN16, EN17, EN 18, EN26, EN29, SO9, EO2, EO3, SO1 EO5, EO6, PR1, PR5, EO9, EO11, EO12 )

CREDIT	DESCRIPTION	CROSS-REFERENCE / DIRECT RESPONSE
Prereq 1	Fill out CRS Spreadsheet	Submitted to CRS - Confidential.
Prereq 2	Weigh it all up	9-10, 16
Section A: Site Selection		
A5	Choose a site with minimal environmental impact on ecosystems	6, 8, 14, 31-33
A6	Choose a site with existing water/sewage infrastructure	The 609 POLs, or portable toilets, cannot connect directly to sewage because it is unavailable in all locations. Some “crowd pleasers” connect directly to sewage where they are able. We have maximized the potential; 4 crowd pleasers are connected to sewage; they typically have 6 toilets in each.
A7	Prevent or decrease light pollution	All light fixtures on site during the 2013 WMPO used cut-off luminaries and/or are low angled or angled directly at the ground.
A8	Prevent or decrease noise pollution	Golf activities during the tournament only occur between dawn and dusk, from approximately 7:20 am to 6:00 pm. The only exception is the Bird’s Nest, which offers concerts from approximately 3:30 pm to 10:00 pm on Thursday through Saturday night during the event. All concerts take place in a large tent to ensure that the sound does not travel far.  Since there are residential areas near the golf course, the Thunderbirds meet with the presidents or heads of the neighborhood associations each Fall. They review the event times, parking operations, street closures and specifically the Bird’s Nest schedule. There are five neighborhoods involved every year. All nearby residents in these areas are informed about the meeting and invited to attend. Often times the neighborhood association heads show up to represent their community. Feedback about the previous year as well as concerns for the upcoming event are shared during the meeting. The Thunderbirds incorporate these suggestions or issues into the upcoming event planning process. Additional information submitted to CRS - Confidential.
A9	Environmentally-friendly portable toilets and sinks	12-13
A10	Choose a certified “green” accommodations Athletes can recycle in their rooms	The WMPO’s Primary Accommodations is the Fairmont Scottsdale Princess, 7575 E. Princes Drive, Scottsdale, AZ 85255 ( <a href="http://www.scottsdaleprincess.com">www.scottsdaleprincess.com</a> ). This location has been deemed a Certified Green Hotel by the Arizona Lodging and Tourism Association. Source: <a href="http://www.stayinaz.com/certified-green-hotels.html">www.stayinaz.com/certified-green-hotels.html</a> .
A11	Athletes can recycle in their rooms	The Fairmont Scottsdale Princess offers recycling in all guest rooms; additional information submitted to CRS.
A12	One water conservation practice (in accommodations)	Submitted to CRS - Confidential.



<b>A13</b>	One energy conservation practice (in accommodations)	Submitted to CRS - Confidential.
<b>A14</b>	Non-toxic cleaning products only	Submitted to CRS - Confidential.
<b>A15</b>	Room service or in-room food is certified or locally produced	All Fairmont Scottsdale Princess guests were given Arizona Cowboy Tortilla Chips, Salsa Fresca and Chocolate Chip Cookies, produced locally in Phoenix, AZ; additional information submitted to CRS.
<b>A16</b>	List green hotels at all price points	This link was posted to thinkgreen.com prior to and during the WMPO: <a href="http://thinkgreen.com/wmphenixopen2013/HotelsandRestaurants.pdf">http://thinkgreen.com/wmphenixopen2013/HotelsandRestaurants.pdf</a> .

## Section B: Purchasing

<b>B3</b>	Sustainable large format printing	12; additional information submitted to CRS.
<b>B6</b>	Official awards for the event have at least one sustainable attribute	The WMPO winner's trophy is manufactured annually by Waterford out of Ireland. The wood base that it rests on is handmade locally in Tempe, AZ by a local artist. He uses mesquite wood that is locally grown and typically comes from trees that have fallen or being removed for some reason. For the Pro-Am, the Kachinas awarded to winners are hand-crafted and made by two Native American Artisans from the local region; additional information submitted to CRS.
<b>B7</b>	Event T-shirts distributed only to participants who opt-in to receive them	Participants did not receive event t-shirts.
<b>B8</b>	Maximize the sustainable attributes of official event t-shirts	Appendix F Procurement.
<b>B9</b>	Maximize sustainable attributes of official event giveaways	12
<b>B11</b>	Event has a sustainable procurement policy	11-13; additional information submitted to CRS.

## Section C: Resource Management

<b>C1</b>	Measure the water footprint of the event	13
<b>C2</b>	Measure the total carbon footprint of the event	15-17
<b>C3</b>	Calculate the total carbon footprint from participant travel	15
<b>C4</b>	Calculate the total carbon footprint from spectator travel	15
<b>C5</b>	Divert at least 60% of waste	9-10, 16; additional information submitted to CRS.
<b>C6</b>	Divert at least 75% of waste	9-10, 16; additional information submitted to CRS.
<b>C7</b>	Divert at least 90% of waste	9-10, 16; additional information submitted to CRS.
<b>C8</b>	Reuse or donate one non-food item	9-10, 16; additional information submitted to CRS.
<b>C9</b>	Divert at least 50% on one hard-to-manage item from landfill	12 (Signage section)



C10	Composting at one event site	Composting was available at all public locations at the WMPO; additional information submitted to CRS.
C11	Composting at all event sites	Composting was available at all public locations at the WMPO; additional information submitted to CRS.
C13	Introduce a policy or initiative that conserves water at event	14 (gray water capture)
C14	Implement a policy or initiative to reduce the environmental impact of water runoff and/or wastewater	The WMPO used POLs with environmentally-friendly products; additional information submitted to CRS.
C15	Use 25% renewable energy	At the 2013 WMPO, 34.5% of energy usage came from renewable sources; additional information submitted to CRS - Confidential.

#### Section D: Transportation

D1	At least 25 percent of vehicles used by event operations during the event use alternative fuel.	At the 2013 WMPO, 63.3% of vehicles used by event operations used alternative fuel. These vehicles included CNG trucks, biofuel run buses, electric golf carts, electric scooters and bicycles.
D2	Make alternate transportation possible	This link was posted to thinkgreen.com prior to and during the WMPO: <a href="http://thinkgreen.com/wmphoenixopen2013/HotelsandRestaurants.pdf">http://thinkgreen.com/wmphoenixopen2013/HotelsandRestaurants.pdf</a> ; WM additionally worked with the designated nearby hotels with free shuttles to increase their promotion of this alternative transportation option; additional information submitted to CRS.
D3	Choose event sites and accommodations all within walking distance	The Fairmont Scottsdale Princess is located on the WMPO course; additional information submitted to CRS.
D4	Offset intra-site travel	WM offset 100% of intra-site transportation emissions; additional information submitted to CRS - Confidential.

#### Section E: Food

E3	Provide a list of sustainable restaurant options	This link was posted to thinkgreen.com prior to and during the WMPO: <a href="http://thinkgreen.com/wmphoenixopen2013/HotelsandRestaurants.pdf">http://thinkgreen.com/wmphoenixopen2013/HotelsandRestaurants.pdf</a> .
E4	Run Food Donation Program	9-10; additional information submitted to CRS.
E5	All food service items and packaging provided at the event are reusable, recyclable or compostable	WM interviewed all vendors to ensure that all items and packaging disposed of at the 2013 WMPO was recyclable, compostable, or reusable; additional information submitted to CRS - Confidential.

#### Section F: Accessibility

F1	Collect community feedback to aid in the planning of the event	18-22; additional information submitted to CRS - Confidential.
F2	Develop a plan for outreach to under-represented groups	18-22; additional information submitted to CRS - Confidential.
F3	Increase participation of under-represented groups	18-22; additional information submitted to CRS - Confidential.

F4	Provide concessions of incentives for beginners and/or first-time athletes	There were several opportunities for attendees to practice and learn about golf at booths in the WMPO Expo tent. This included Ping, Geico and the Mercedes Benz booths; additional information submitted to CRS.
F5	Teach healthy training skills to people new to the sport	At the Mercedes Benz GolfTEC booth, attendees practiced driving and putting with cameras recording their swings. These videos, along with commentary from an instructor helping attendees while they practiced, was made available online after the event; additional information submitted to CRS.
F6	Beginner athletes (and spectators) enjoy the event experience	WM conducted a spectator survey in accordance with CRS guidelines. 380 spectators were surveyed and the following results were documented: 12.4% of those surveyed had not previously played golf or attended a golf event, and 44.7% of that population intended to play golf or attend a golf tournament in the upcoming year.
F7	Offer concessions for local high school athletes	21-22
F8	Provide opportunities for younger children to be participants	21-22
F10	Participation of differently-abled populations	22
F11	Event promotes a safe and inclusive environment for all	All Recycling Ambassadors received training and contact information for what to do if they witness an incident; additional information submitted to CRS.
F13	Create a community action plan	Submitted to CRS - Confidential.
F14	Engage the entire community at the event in a fun, interactive way	20; The Saturday of the tournament is "Green Out Day." For every person who wears green, The Thunderbirds donate "green"; in 2012, that was \$50,000. In 2013, this donation reached \$60,000, which was split by all three "Green Out for Charity" organizations. Additional information submitted to CRS.

#### Section G: Community Legacy

G1	Solicit feedback about sustainability from participants	WM conducted a spectator survey in accordance with CRS guidelines. 380 spectators were surveyed and the following results were documented: 78.8% noticed that there are no trash containers on the course during the WMPO, 37.1% were aware of what the tournament does to conserve water, and 32.6% knew about the alternative energy sources used at the WMPO. These initiatives were explained to spectators who did not know about them or wanted to know more. Additional information submitted to CRS.
G2	Measure the event's economic impact on the host county or city	The total economic impact from the 2013 event was estimated at \$231.7 million. At the 2013 WMPO, WMSS surveyed event attendees to collect demographics as well as other relevant information for this economic impact study. For this report, WMSS extrapolated key data from the 2012 WMPO Arizona State University Economic Impact Study onto 2013 participant demographics and updated charitable giving totals. Additional information submitted to CRS - Confidential.

G3	Improve local public spaces	From the "Shot at Glory" and "Green Out for Charity," the WMPO donated a total of \$43,000 to Keep Phoenix Beautiful. A portion of this funding goes to their PHX Renews project, which we discussed last year. PHX Renews is centered at Central & Indian School Roads on a fifteen acre parcel to discover best practices of temporary nature for vacant lots across the city. Collaborating with several other nonprofit organizations like International Rescue Committee, U of A Cooperative Extension, the VA Hospital and the city of Phoenix they are transforming this very high profile lot in central Phoenix into urban gardens, therapy gardens, and educational opportunities.
G4	Encourage patronage of local businesses	Submitted to CRS - Confidential.
G5	Feature nonprofits on event day	51
G6	Donate at least \$5 per participant to local non-profit organizations	51; additional information submitted to CRS - Confidential.
G7	Increase awareness of a local nonprofit organization	The WMPO has a "Green Out for Charity" initiative that highlights Arizona Forward, Keep America Beautiful and Keep Phoenix Beautiful, providing donations to all three based on Facebook votes. WM has promoted all three and will provide information that measures this influence through their Facebook "likes" count. Additional information submitted to CRS; additional information submitted to CRS - Confidential.
Section H: Innovation		
H1	Event Innovation - Golf Ball Donation	9-10; WM water fixture golf ball donation.
H2	Event Innovation - Public Voting for "Green Out for Charity"	Facebook tracking of "Green Out for Charity" donation votes - to solve the issue of determining the best source for a donation, WM and the Thunderbirds put the option on Facebook for votes. For the Green Out for Charity Campaign, the WMPO supported 3 non-profit organizations: Arizona Forward, Keep America Beautiful and Keep Phoenix Beautiful. To determine which organization received which percentage of the total donation, the event used Facebook "likes" and required information of the location of voters to demonstrate that they are primarily the region. Only 10% of the total, came from out of state; additional information submitted to CRS - Confidential.
H3	Event Innovation - QR Codes	QR Codes were posted throughout the course to provide attendees with information like pairing sheets, a course map, local sustainable restaurants and more.
H4	Vendor or Partner innovation - Biodegradable Hot Cups	WM and the Thunderbirds provided funding to maintain a vendor relationship and proper disposal of all hot cups. Additional information submitted to CRS - Confidential.
H5	Vendor or Partner innovation - Condiment Stations	Condiment packets were not allowed at the event, and to prevent their usage, WM and the Thunderbirds worked with vendors to provide condiment stations for attendees and participants to use. This eliminated packaging for the condiments from all locations.



## Appendix B Risk of Climate Change to Golf in Phoenix

(4.11, EC2, SO9) The City of Phoenix is located in the southwestern portion of the United States, in an area primarily characterized by a desert landscape and climate. Development in this area has been heavily dependent upon vast amounts of water supplied by surrounding surface water bodies and deep groundwater aquifers.

The consensus among scientists is that human activity is causing global temperatures to increase in a phenomenon known as climate change, with resulting impacts to sea levels, weather patterns and ecosystems. In 2012, there were several events that serve as examples of conditions that can be expected as the result of climate change. Not least among these was a persistent drought affecting more than 50% of the continental United States. This drought was the most severe and extensive that the nation had seen in 25 years<sup>1</sup>, with consequences for farmers, consumers and other stakeholders. Drought conditions resulted in increasing pressures on water supplies around the country, resulting in lower crop yields, increased food prices and billions of dollars in insurance claims and other economic impacts. Although adverse conditions have eased in other areas of the country, drought conditions continue locally in the Phoenix area. Water levels in local reservoirs are down an average of 37 percentage points from 2011 levels, just before the drought began<sup>2</sup>.

As the effects of climate change intensify, it can be anticipated that maintaining currently developed areas will become more costly with increased pressures on (and decreased availability of) local water supplies. This is especially true for golf courses, which depend on large quantities of water to maintain their verdant aesthetic. The cost of golf course irrigation in the Phoenix area can be expected to increase drastically as local potable water supplies diminish due to on-going development and the competing demands of industry and local population requirements. In addition, drought conditions in other parts of the country can be expected to adversely impact the Phoenix area locally, as the municipal water supply, which includes the Colorado River, serves multiple metropolitan areas in Arizona and other states (such as California, Colorado and New Mexico) and a total of thirty million people<sup>3</sup>. Water rights have been a growing source of conflict in the desert southwest and these tensions can be expected to intensify with more frequent droughts and water shortages.

Other risks posed by climate change are weather-related, and can be expected to impact the City of Phoenix and the game of golf alike. These weather-related impacts are anticipated to present challenges to golf in the near term, particularly due to the weather-sensitive nature of the sport.

### APRIL 2013 DROUGHT MONITOR

As unpredictable weather patterns emerge, golfers in the Phoenix area can expect impacts related to increases in the frequency of severe weather events including dust storms, wildfires and thunderstorms with lightning, high winds and potentially damaging hail. These severe weather events have the potential to delay or postpone golf events. Power outages and damages to golf courses from severe weather can result in event cancellations. Increased severe weather events in a desert climate can result in flash flooding, as parched ground surfaces are unable to absorb large amounts of precipitation at once. Runoff that is unable to be contained by existing storm water control systems can cause flooding of the event site and/or surrounding roadways, resulting in event delays or cancellations and disruptions in the golf course's supply chain.

The impact of Superstorm Sandy can serve as an example of how storms induced by climate change can affect people, infrastructure and economies in those areas that are unprepared. With an estimated U.S. \$50 billion in economic impacts, this hybrid of hurricane and winter storm became the second-costliest natural disaster in U.S. history and the deadliest hurricane to hit the Northeast in 40 years<sup>4</sup>. Hurricanes or tropical cyclones that form in the eastern Pacific Ocean have the potential to impact Northwestern Mexico or the State of California. If these storms retain sufficient moisture as they make landfall, the State of Arizona can experience heavy rain and flash flooding as a result<sup>5</sup>. Whether the storm is local or occurring elsewhere, hurricanes and cyclones have the potential to cause direct impacts in terms of travel and supply chain disruptions. Uncertainty

<sup>1</sup> "U.S. Drought 2012: Farm and Food Impacts." United States Department of Agriculture, Economic Research Service.

<<http://www.ers.usda.gov/topics/in-the-news/us-drought-2012-farm-and-food-impacts.aspx>>

<sup>2</sup> Sullins, Amber. "Severe drought persists around Arizona." ABC15. January 18, 2013.

<[http://www.abc15.com/dpp/weather/weather\\_news/severe-drought-persists-around-arizona](http://www.abc15.com/dpp/weather/weather_news/severe-drought-persists-around-arizona)>

<sup>3</sup> "Life Blood of the American Southwest." Save the Colorado. <<http://www.savethecolorado.org/river.php>>

<sup>4</sup> Porter, David. "Hurricane Sandy Was Second-Costliest In U.S. History, Report Shows." Huffington Post. February 12, 2013.

<[http://www.huffingtonpost.com/2013/02/12/hurricane-sandy-second-costliest\\_n\\_2669686.html](http://www.huffingtonpost.com/2013/02/12/hurricane-sandy-second-costliest_n_2669686.html)>

<sup>5</sup> "Tropical Cyclones in Arizona." National Oceanic and Atmospheric Administration, National Weather Service Forecast Office.

<<http://www.wrh.noaa.gov/twc/tropical/tropical.php>>



in weather patterns and more intense storms overall increase the probability that the Desert Southwest will be increasingly prone to the impacts of severe weather events.

To mitigate the negative effects of climate change, many golf courses will need to consider modifying their landscapes to include different turf grasses that require less water, fertilizer, pesticide and herbicide applications. Public perceptions will need to shift so that more “natural” turf (i.e., less fertilized or irrigated grass) gains acceptance. Furthermore, modifications to drainage and energy supply/distribution systems may be necessary to account for larger volumes of precipitation and inconsistent electricity/fuel supplies. Courses that maintain the status quo may find themselves unprepared in the event that climate change legislation is passed in the United States, as it has in Europe. Overall, uncertainty regarding the outcomes of climate change impacts will complicate formulating and maintaining golf course operating budgets.



# Appendix C More About TPC Scottsdale

Written by Jeff Plotts, TPC Scottsdale Golf Course Superintendent

(4.8, 4.11, EN11, EN12, EN13, EN14, EN25, EN26, SO9, SO10)

## Facility Description

The TPC Scottsdale is a 36-hole resort/public golf facility that sits on 400 acres in the McDowell foothills of the Sonoran Desert. The property is a flood control basin for the Central Arizona Project, which is owned by the Bureau of Reclamation. The assets of the facility are owned by the City of Scottsdale and the PGA TOUR is the managing partner. The 400 acres are made up of 185 acres of turfgrass, 200 acres of desert vegetation and landscape along with 15 surface acre water shed.

The aired environment, poor water quality, low flat terrain and fine texture clay soils create a very challenging environment to grow quality turfgrass. The property retains all water runoff accelerating the salt accumulation both in our soils and water.

Primary grass on the Stadium Course and Champions Course is 419 Bermuda grass on all the fairways and rough. The tees on the Stadium Course are 328 Bermuda grass and on the Champions Course are Emerald Dwarf Bermuda grass and on the Champions Course are Emerald Dwarf Bermuda grass. Adding to the difficult environment impacts, each October the tees, fairways and some of the rough are over seeded with a blend of Perennial Ryegrass and Fine Fescue for winter play. The greens receive an over seed blend of Fine Fescue, Poatrivilas and Velvet bentgrass.

## Water Management

The water shed for our 36-hole facility consists of four connected lakes, which total 15.2 surface acres. The lakes are recharged with effluent reclaimed water from the City of Scottsdale. All the lakes are lined and have near vertical concrete edging that eliminates lake leaking and erosion. Turfgrass buffers around the lakes have provided good filtration, reducing the need for aquatic pesticide applications. Fish such as Tilapia and grass carp are stocked in the lakes to reduce the need for algacides and to maintain high water quality.

Our irrigation system includes two pump stations and computer assisted controllers. Each 3200 head irrigation system, on each course, is operated individually to allow us precise control of irrigation water application. Two pump stations allow us to water in a small water window reducing the amount of evapotranspiration and water loss.

With an on-site weather station and computer-controlled system, water management is based upon evapotranspiration rates along with close daily monitoring of soil moisture using probes, moisture meters and in ground moisture/salinity sensors. The sensors are critical in our water management efforts giving us good historical water measurements and salinity readings within the soil, helping us to determine flush schedules and regular watering practices. We also take into consideration the soil structure, infiltration rates, terrain and evapotranspiration to determine our watering cycles. To lengthen our overhead water intervals, hand watering is used to subsidize areas that dry out faster. The use of wetting agent on tees, fairways and greens along with deep infrequent automatic irrigation with supplemental hand watering have allowed us to use 12.13% less irrigation water throughout the year.

In an increased effort of conservation, we eliminated all non-targeted watering with the use of part-circle heads. Routine maintenance and irrigation checks allow for more effective watering. Localized dry spots receive extra hand watering with additional wetting agents. In addition, our irrigation team has developed a low volume portable irrigation base to water “hot spots” and salt affected areas more efficiently and affectively.

The use of native landscape plantings around tees enables us to reduce turfgrass and water consumption. On course water treatments with N-Control and pHairway has given us great flexibility in managing high carbonate and bicarbonate irrigation water. Injecting these acid fertilizer water treatments has improved our turfgrass health, soil structure and infiltration while allowing us to reduce overall water usage by more than 34 acre feet annually. Managing water quality in a high evapotranspiration environment is crucial for both water conservation and water efficiency for turfgrass.

Two different turfgrass species are maintained during the year, one overseeded cool season turfgrass and one warm season base turfgrass. Different water management practices are implemented for each species to sustain good plant health. As needed periodically, heights of cut are increased to reduce turfgrass stress and water requirements.

## Resource Conservation

The conservation of energy is implemented through sound day-to-day practices. Lights in the equipment storage area are turned off during daylight hours and lights are turned off in areas not occupied. Timers have been installed to all the lights throughout the turfgrass maintenance facility to further our conservation efforts. We have installed timers on the lights and exhaust fans throughout golf course restrooms. Thermostats are adjusted accordingly during non-business hours reducing and conserving power that is not essential for daily operation. Computer assisted programs used by our irrigation systems help us to manage

and avoid frequent starts minimizing kilowatt usage. This allows for tighter water window during non peak hours when energy demands are lower and more economical.

All the equipment is rotated out every three years improving the overall energy efficiency. A computer program generates work orders for our equipment technicians on all preventive maintenance based on the strictest manufacturers' guidelines for maximum equipment operating efficiency. Recycling efforts in the shop include, used motor and hydraulic oil, oil filters, battery cores, used tires, cans, plastic bottles and containers.

Motor and hydraulic oil are stored inside the maintenance facility in self-contained tanks meeting EPA requirements. All Type I fuel safety cans are stored in a nonflammable liquid safety cabinet that meets OSHA and NFPA specification. Employee orientation and weekly safety meetings train the staff on proper procedures for fueling equipment and documentation, the locations of the emergency shutoff, fire extinguishers and the spill containment kit.

Chemical preparation and application are strictly controlled. Special brimmed mixing and storage areas and isolation of all fertilizer and chemicals prevent accidental loss into the environment. Precise measurements, equipment calibrations and controlled applications limit excess chemical use. Setting high thresholds for evasive weeds and spot treatment of weeds control reduce both chemical and fuel usage.

To reduce landfill deposits, all clippings are returned to the turf and allowed to degrade returning the nutrients back to the plant. With the use of a chipper, fallen limbs, small trees and other landscape debris are mulched and composted and used during other landscape projects. Some debris, such as fallen trees, that cannot be chipped for mulch is cut into logs for employees and guests to use as firewood limiting our local landfill input.

In our Golf Course Maintenance Administrative Office, we have the motto of *Reduce, Reuse and Recycle*. In an effort to reduce, we use e-mail as our method for memos. We use solar powered calculators and have changed all of the incandescent light bulbs to compact fluorescent light bulbs (CFL) throughout the maintenance facility. We reuse the back side of paper in the fax machine, printers and copy machine. As well, we use old paper to create note pads. File folders are reused by relabeling over old labels and we reuse boxes for future shipments. Our office recycles paper, plastic and cardboard. We participate in a recycle program for all fluorescent and compact fluorescent light bulbs

## Integrated Pest Management

Through soil, tissue and water testing a Turfgrass Management Plan is developed to promote healthy vigorous turf, reduce stress and unnecessary pesticide applications. The Superintendent, two Assistants and Application Foreman for each course have attained the proper pesticide applicator license and perform daily scouting for insect and disease damage. Threshold limits have been set for acceptable damage prior to most pesticide applications.

Greens are maintained with sound agronomic practices which prevent disease or insect pressures to be routinely treated during the season. We closely monitor weather conditions, soil temperatures, nutrient level (through tissue testing) and environmental conditions to choose the proper timing of fungicide or pesticide applications. Green applications are applied using a spray hawk which is calibrated prior to each application treatment.

Bermuda grass tees, fairways and rough rarely exceed our set thresholds and are only treated as needed with fungicides or pesticides. Over the last five years, none of the tees, fairways or roughs has been treated with any fungicide or pesticide treatments. No pre-emergent applications are made on either golf course for weed control. The only weed control made is through spot applications of post-emergent as needed. Routine hand weeding helps prevent the need for excessive spot treatment applications. Fertilizers are applied only after soil testing, traffic wear assessments and consideration of environmental impact to achieve the desired turf health and vigor suitable for the course and conditions.

When necessary, broadcast pesticide applications are applied with a 200-gallon self-contained spray unit with foam marker to assure even application rates. Broadcast granular fertilizer applications are made with a Lely 3-point hitch spreader with a foam marker to assure even application rates. All equipment is calibrated prior to use and weather conditions along with wind speeds and directions are closely monitored during applications.

## Wildlife/Habitat Preservation

Several naturalized desert areas are located throughout the property. Since we are located within residential and commercial communities the golf course is a sanctuary for numerous mammal and bird species. Wildlife and plant species have been inventoried along with mapping naturalized areas. We continue to establish and maintain new plantings that are indigenous to the area.

We have sixteen acres on the 400 acre property that have been devoted to naturalized habitat areas while a total of 200 acres are desert vegetation and landscaping. Great efforts to maintain these habitats and to coexist with wildlife have been preserved. We discourage players from entering naturalized and desert areas by marking them as either out of bounds or lateral hazards. Many of the dense natural vegetation areas have been staked or fenced with split rail fencing to prevent golfers from entering these wildlife habits. The golf course is the breeding ground for numerous wildlife species that would not be as readily



available if the golf course were not here. Nesting areas of duck, geese, killdeer and other birds found by staff are staked and roped in an effort to protect until hatched. When no potential safety issues exist, dead trees are left standing as “skags” for birds of prey to perch and for food source and potential shelter for the numerous bird species that we have on property. Forty bird houses and 10 bat houses have been installed throughout the course, which are cleaned and monitored for activity and nesting habits.

The golf courses have 15.2 surface acres of open water on four lakes that support several species of wildlife and fish, which is very difficult to find in a desert environment. We continue to protect and improve the water quality by adding aquatic planting, minimizing erosion and stabilizing slopes. The improvement in the water quality has provided good habitats fish, turtles and frogs. Additionally, we have many species of ducks and geese that now make our golf course a breeding ground.

Wildlife food opportunities are abundant throughout the golf course from trees, shrubs, grasses, ground covers and flowers. Bird feeders are installed during winter months to provide food for migrating birds. To help feed and discourage ducks and geese from damaging turf stands, we establish food plots in naturalized desert areas rather than driving the wildlife away from the golf courses. During the summer months, we install Hummingbird feeders around the clubhouse and maintenance facility grounds. We continue to establish and maintain plants that attract butterflies and Hummingbirds.

## Education/Outreach

The TPC Scottsdale is a proud member of the Audubon Cooperative Sanctuary System and was one of Arizona’s first certified golf courses, certified since 1995. In 2011, we became a Platinum Member of Audubon Lifestyles to continue to show our commitment to sustainable golf. We proudly display Membership Certificates, environmental accomplishments, as well as pictures of habitat and wildlife present on our courses at the clubhouse and in the administrative office at the maintenance facility. Additionally, we display our certification on the scorecards with a small sampling of wildlife that our guest may see on the course. Through regular articles in our newsletter, blog ([www.tpcscottsdaleagronomy.com](http://www.tpcscottsdaleagronomy.com)) we are able to communicate to guests and employees of ongoing projects, announcements and any wild life activity that has taken place on the course. The development of an Audubon Garden has helped us educate the guests about native plant species in our Sonoran desert environment.

In 2012, we were the proud recipients of the GCSAA/Golf Digest Environmental Leaders in Golf Award. This was the fifth year we have received this award.

Throughout the year, we have the opportunity to speak with groups from the Bureau of Reclamation and the City of Scottsdale on water management and quality, wildlife habit and protecting natural resources. During our annual PGA TOUR event, we have the chance to speak with a number of media outlets about golf and the environment. Through these meetings and interviews we are able to describe our commitment to proper water management and highlight the environmental benefits of the golf course in our community. The unique relationship of the Bureau of Reclamation, City of Scottsdale and the PGA TOUR affords us the ability to educate, inform and participate with a large cross section of people. Golfers, environmentalists and concerned residents have been some of the people with whom we have had the opportunity to discuss our proactive approach to environmental stewardship.

## Appendix D Vendor Guidelines For Acceptable Materials



## Vendor Guidelines for Acceptable Materials

### 2013 Waste Management Phoenix Open

FOR QUESTIONS AND ITEM APPROVAL, PLEASE CONTACT:

Jessica Lagreid, Waste Management Sustainability Services

602.725.7248

[jlagreid@wm.com](mailto:jlagreid@wm.com)



# 2013 Waste Management Phoenix Open Zero Waste Participation Agreement

Dear Vendor, Sponsor, or Expo Booth Operator:

Thank you for your participation in the 2013 Waste Management Phoenix Open! Thank you to all of the Vendors, Sponsors, and Expo Booth Operators who worked with us last year to achieve outstanding success in our **Zero Waste Challenge**. Together we surpassed our goals, recycling or composting 82% of all the waste generated from set up to tear down. It was a truly impressive feat that could not have been accomplished without teamwork.

We want to continue along this path and divert even more waste from the landfill in 2013. To make it easier for you to bring only acceptable materials to the event, Waste Management, the Thunderbirds and Reed Paper have created a catalog of food and beverage service items that can be easily recycled or composted. You may continue to use the attached guidelines, provided last year, or go straight to the catalog and place your order.

Our signs for the 2013 event will continue to reflect the policy that all items given away or sold must be reusable, recyclable or compostable, so it is imperative that you follow the guidelines. As a participant selling or providing food, products or services at this event, **you are the key** to the success of our event.

If you generate “back-of-house” waste as you operate, we will provide recycling and composting bins to collect this waste. Throughout the event, it is important that you sort your materials into the appropriate bin of compostables or recyclables. We will have a number of experts available to answer any questions and empty bins regularly.

If this is your first Waste Management Phoenix Open event, please call or email Jessica Lagreid at [jlagreid@wm.com](mailto:jlagreid@wm.com) or (602) 725-7248 to discuss your responsibilities or to answer any questions.

We are looking forward to another successful WMPO!

- *Waste Management and the Thunderbirds*

# 2013 Waste Management Phoenix Open Zero Waste Participation Agreement

Signature Page

As a participant in the 2013 Waste Management Phoenix Open, I agree to distribute only locally recyclable, compostable or reusable items, per these guidelines. I will purchase appropriate Zero Waste Challenge materials for the event. I agree to provide training to my staff to sort waste before, during and after the event.

\_\_\_\_\_  
Business Name

\_\_\_\_\_  
Employee (print name)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
(title)





# Guidelines for Acceptable Event Materials

The following informational guidelines shall serve as the governing policy for all acceptable materials that can be brought on site for use, and distribution during the 2013 WMPO. These guidelines contain materials we know to be easily recyclable and compostable locally.

Whenever possible, promotional items, construction materials, and unused food should be donated for reuse. To explore options for donations please contact: **Jessica Lagreid at (602) 725-7248.**

Table 1: Locally accepted items for recycling or composting.

**ANY ITEMS NOT ON THIS LIST MUST BE APPROVED FOR USE AT THE TOURNAMENT.**

Item	Material	Criteria for Collection
Cold beverage cups (wine, beer, spirits)	#1 polyethylene ( PET) plastic , #2 high density polyethylene (HDPE), #5 polypropylene (PP) <b>(NO #6 polystyrene PS cups)</b>	RECYCLABLE
Utensils	Sugar cane fiber, cornstarch, plant based <b>(NO plastic utensils)</b>	COMPOSTABLE
Hot beverage cups	Sugar cane fiber (bagasse), cornstarch, paper (preferably recycled fiber), PLA lining only <b>(NO polystyrene)</b>	COMPOSTABLE
Hot beverage lids	Paper (preferably recycled fiber) or plant based	COMPOSTABLE
Tissue/wax paper wraps	Paper, wax paper (preferably recycled fiber) <b>(NO foil wraps)</b>	COMPOSTABLE
Napkins	Paper, <b>100% recycled fiber</b>	COMPOSTABLE
Plates/Boats	Sugar cane fiber (bagasse), cornstarch, paper (preferably recycled fiber), can have a lining	COMPOSTABLE
Bowls (hot/cold)	Sugar cane fiber (bagasse), cornstarch, paper (preferably recycled fiber), PLA lining only	COMPOSTABLE

Clamshells	Sugar cane fiber (bagasse), cornstarch, paper (preferably recycled fiber), PLA lining only	COMPOSTABLE
Single-serving condiment cups	Sugar cane fiber (bagasse), cornstarch, paper (preferably recycled fiber) <b>(NO individual foil or plastic condiment packets)</b>	COMPOSTABLE

Below is a full list of materials accepted in the single stream recycling program and the compost program, contact information to donate food and promotional items, and unacceptable materials.

ACCEPTED IN SINGLE STREAM RECYCLING PROGRAM
<ul style="list-style-type: none"> <li>Paper: flyers, brochures, programs, tickets, office paper, newspaper, magazines, paperboard, cardboard. Preferably all made of recycled content.</li> <li>Glass: green, brown, clear</li> <li>Plastic: #1 polyethylene ( PET) plastic , #2 high density polyethylene (HDPE), #5 polypropylene (PP) cups/containers, water/juice/soda bottles, ice bags, plastic/saran wrap (clean)</li> <li>Aluminum cans</li> <li>#10/tin/steel cans MUST BE CLEANED</li> <li>Food wrappers: chip bags, candy wrappers, cellophane, energy bar wrappers, ice cream wrappers</li> </ul>
ACCEPTED IN COMPOSTING PROGRAM
<ul style="list-style-type: none"> <li>Food of any kind: fruit, meat, fish, bones, baked goods, coffee grounds, tea bags</li> <li>Liquids</li> <li>Hot cups and lids within accepted guidelines</li> <li>Napkins, tissue paper, wax paper</li> <li>Plates, bowls, “clam shell” containers, boats within accepted guidelines</li> <li>Condiment cups within accepted guidelines</li> <li>Wooden toothpicks, stir sticks, chopsticks</li> <li>Compostable utensils within accepted guidelines</li> </ul>
FOOD DONATION
<ul style="list-style-type: none"> <li>To learn more about food donations, please contact Jessica Lagreid from Waste Management at (602) 725-7248.</li> </ul>
PROMOTIONAL ITEMS
<ul style="list-style-type: none"> <li>Ensure all promotional items are recyclable, reusable, or compostable.</li> <li>Donate unused promotional items. Contact Jessica Lagreid from Waste Management at (602) 725-7248.</li> </ul>

## UNACCEPTABLE MATERIALS

- Styrofoam and plastic #6
- Single use decorations: stickers, balloons, plastic table cloths

## Acceptable Compostable Materials Providers

Please note that not all items that claim to be “compostable” can be processed at organics composting facilities. To assist you in purchasing service items that are acceptable for processing at the Garick composting facility, please see Table 3 below.


To follow a link, please copy and paste it into your browser. Note that “✓” indicates website pricing information is available.

Please note that any alternative materials or substitutions purchased other than those listed in Table 3 **shall not be allowed without prior approval**. Submit request to:

Jessica Lagreid at [jlagreid@wm.com](mailto:jlagreid@wm.com) or (602) 725-7248.

If you do not already have a compostable material provider, you can order materials through Mike Reed at Western Paper, [mreed@westernpaper.com](mailto:mreed@westernpaper.com), 602-390-2821. Mike is a local distributor who has worked with the WMPO for many years. He has provided a product catalog (see below) that includes all materials that meet the acceptable materials guidelines.

**\*\*PLEASE NOTE: The pricing listed in the catalog below is subject to change\*\***

					
<u>Item Category</u>	<u>Item #</u>	<u>Order Qty.</u>	<u>Item Description</u>		<u>Sell **</u>
			<b>COLD BEVERAGE CUPS (PET)</b>		
Food Service	GEN-CH09-PE		9oz SQUAT PET PLASTIC CUP-CLR 1M		\$52.56
Food Service	GEN-CH10-PE		10oz PET PLASTIC CUP-CLR 1M		\$56.88
Food Service	GEN-CH12-PE		12/14oz SQUAT PET PLASTIC CUP-CLR 1M		\$60.48
Food Service	GEN-CH16-PE		16/18oz SQUAT PET PLASTIC CUP-CLR 1M		\$70.56
Food Service	GEN-CH20-PE		20oz PET PLASTIC CUP-CLR 1M		\$76.32
			<b>HOT BEVERAGE CUPS &amp; LIDS</b>		
Food Service	PLAN-PLC12		12oz PLA HOT CUP-WHITE 1M		\$82.80
Food Service	PLAN-PLC16		16oz PLA HOT CUP-WHITE 1M		\$95.05

Food Service		PLAN-PLC-12-DW		12oz DUAL WALL COMPOST HOT CUP-NAT 1M	\$115.48
Food Service		PLAN-PLC-16-DW		16oz DUAL WALL COMPOST HOT CUP-NAT 600	\$81.39
Food Service		PLAN-PLHL90		TRAVEL LID COMPOSTABLE 12-20oz CUP 1M	\$60.88
Food Service		TPC-18801		FIBER DOME LID 8-22oz HOT CUP-WHT 500	\$29.03
				<b>WAX PAPER - SANDWICH WRAPS</b>	
Food Service		BP-7B12		12x12 POLYWAX SANDWICH WRAP-WHT 1M	\$12.31
Food Service		BP-7B14		14x14 SUB SANDWICH WRAP-WHT 4M	\$70.08
Food Service		BP-7B16		16x16 WAX SANDWICH WRAP-WHT 3/1M	\$64.16
Food Service		BP-7B4-NK		12x12 WAX SANDWICH WRAP-NAT 1M	\$13.97
Food Service		BP-7B14-NK		14x14 GREASEPROOF BASKET LINER-NAT 1M	\$18.51
Food Service		BP-7B15-NK		15x15 WAX SANDWICH WRAP-NATURAL 1M	\$18.48
Food Service		BP-7B4-YC		12x12 WAX SANDWICH WRAP-YLW 5/1M	\$78.80
Food Service		BP-7B12-BK		12x12 BASKET LINER-BLK CHK 1M	\$14.77
Food Service		BP-7B12-HTG		12x12 BASKET LINER -GRN CHK 5/1M	\$73.87
Food Service		BP-7B12-RC		12x12 BASKET LINER-RED CHK 1M	\$14.77
Food Service		BP-7Q12		12x12 PLAIN QUILTED SANDWICH WRAP 2500	\$69.49
Food Service		BP-7Q1516		15x16 PLAIN QUILTED SANDWICH WRAP 1000	\$47.16
				<b>NAPKINS</b>	
Food Service		HOFF-345000		10x10 BEV NAP 1PLY-WHT 16/250	\$20.81
Food Service		NIB-35624-3		NETCHOICE 13x11 LUNCH NAP 1PLY-WH 12/500	\$32.67
Food Service		NIB-33667-3		NETCHOICE 15x16 2PLY DIN NAP 8/375	\$38.47
Food Service		SCA-D802A		13x17 DISPENSER NAPKIN-WHITE 6M	\$53.80



Food Service		SCA-DX900		8.5x13 XPRESSNAP DISP NAP-WHT 6M	\$59.60
Food Service		SCA-DX906E		XPRESS DISPENSER NAPKIN-NATURAL 6M	\$58.40
				<b>PLATES &amp; BOWLS</b>	
Food Service		GEN-HF806		6IN FIBER PLATE-NAT WHITE 1M	\$43.40
Food Service		GEN-HF807		7IN FIBER PLATE-NAT WHT 1M	\$44.40
Food Service		GEN-HF810		10.25IN FIBER PLATE-NAT WHT 500	\$52.92
Food Service		GEN-HF813		10.25IN 3-COMP FIBER PLATE-NAT WHT 500	\$59.91
Food Service		GEN-HF812		11oz FIBER BOWL-NAT WHT 1M	\$60.91
				<b>FOOD CONTAINERS</b>	
Food Service		PLAN-PLFC-8		8oz PLA FOOD CONTAINER-WHT 1M	\$92.23
Food Service		PLAN-PLFC-12		12oz PLA FOOD CONTAINER-WHT 500	\$62.53
Food Service		PLAN-PLFC-16		16oz PLA FOOD CONTAINER-WHT 500	\$73.52
				<b>FOOD BOATS - TRAYS</b>	
Food Service		BAG-300696		1# ECOCRAFT FOOD TRAY-NAT 1M	\$28.27
Food Service		BAG-300697		2# ECOCRAFT FOOD TRAY-NAT 1M	\$28.73
Food Service		BAG-300699		3# ECOCRAFT PAPER FOOD TRAY-NATURAL 500	\$25.11
Food Service		BAG-300700		5# ECOCRAFT PAPER FOOD TRAY-NATURAL 500	\$31.83
Food Service		SC-0563		1# PAPERFOOD TRAY-HEARTHSTONE 1M	\$22.75
Food Service		SC-0566		3# PAPERFOOD TRAY-HEARTHSTONE 500	\$21.52
Food Service		SC-0567		5# PAPERFOOD TRAY-HEARTHSTONE 500	\$32.01
				<b>CLAMSHELLS ~ TAKE-OUT</b>	
Food Service		GEN-HF225		6x6 HINGED FIBER CONT-NAT WHT 500	\$59.91
Food Service		GEN-HF240		8x8 HINGED FIBER CONT-NAT WHT 200	\$41.95

Food Service		GEN-HF200		9x9 HINGED FIBER CONT-NAT WHT 200	\$50.71
				<b>CONDIMENT CUPS &amp; LIDS</b>	
Food Service		GEN-F200		2oz PAPER PORTION CUP-WHITE 5M	\$48.00
Food Service		GEN-F400		4oz PAPER PORTION CUP-WHITE 5M	\$77.33
Food Service		FK-GPC200		2oz GREENWARE PORTION CUP - CLR 2M	\$31.17
Food Service		FK-GXL250		LID FOR 2oz GREENWARE PORTION-CLR 2M	\$34.20
Food Service		FK-GPC325		3.25oz GREENWARE PORTION CUP-CL 2M	\$49.21
Food Service		FK-GPC400		4oz GREENWARE PORTION CUP-CLR 2M	\$54.31
Food Service		FK-GXL345		LID 3.25-4oz GREENWARE PORTION-CLR 2M	\$49.83
				<b>CUTLERY</b>	
Food Service		IFN-27-1205		FORK HVY WT BIODEGRADABLE/COMPOST 1M	\$44.00
Food Service		IFN-27-1203		KNIFE HVY WT BIODEGRADABLE/COMPOST 1M	\$44.00
Food Service		IFN-27-1204		T-SPOON HVY WT BIODEGRADABLE/COMPOST 1M	\$44.00
Food Service		IFN-27-SOPSB		S-SPOON HVY WT BIODEGRADABLE/COMPOST 1M	\$44.00

Table 3: Acceptable material providers for compostable service items.

Pricing on website		Acceptable Material Providers	
		Item: Utensils	
✓		<a href="http://www.ecokloud.com/biodegradable/compostable/cutlery-tableware-utensils-fork.html">http://www.ecokloud.com/biodegradable/compostable/cutlery-tableware-utensils-fork.html</a>	
✓		<a href="http://www.naturbagstore.com/Default.aspx?cat=6498">http://www.naturbagstore.com/Default.aspx?cat=6498</a>	
✓		<a href="http://www.worldcentric.org/biocompostables/utensils">http://www.worldcentric.org/biocompostables/utensils</a>	
✓		<a href="http://www.hoffmaster.com/Listing/Earth-Wise-Tree-Free.aspx?cid=621">http://www.hoffmaster.com/Listing/Earth-Wise-Tree-Free.aspx?cid=621</a>	

✓	<a href="http://www.ecoproducts.com/plantware_cutlery.html">http://www.ecoproducts.com/plantware_cutlery.html</a>
✓	<a href="http://biomasspackagingstore.com/biodegradable-compostable-cutlery-forks-spoons-knives-tasting-spoons.aspx">http://biomasspackagingstore.com/biodegradable-compostable-cutlery-forks-spoons-knives-tasting-spoons.aspx</a>
✓	<a href="http://www.bioshelltableware.com/products/PLA%20Utensils.pdf">http://www.bioshelltableware.com/products/PLA%20Utensils.pdf</a>
✓	<a href="http://www.stalkmarketproducts.com/products/compostable-cutlery/">http://www.stalkmarketproducts.com/products/compostable-cutlery/</a>
Pricing on website	Acceptable Material Providers Item: Hot Cups
✓	<a href="http://www.ecoproducts.com/world_art_insulated_hot_cups.html">http://www.ecoproducts.com/world_art_insulated_hot_cups.html</a>
✓	<a href="http://www.ecoproducts.com/world_art_hot_cups.html">http://www.ecoproducts.com/world_art_hot_cups.html</a>
✓	<a href="http://www.ecoproducts.com/greenstripe_hot_cups.html">http://www.ecoproducts.com/greenstripe_hot_cups.html</a>
✓	<a href="http://www.worldcentric.org/biocompostables/cups/hot-cups">http://www.worldcentric.org/biocompostables/cups/hot-cups</a>
✓	<a href="http://www.ecokloud.com/biodegradable/compostable/paper-pla-hot-cups.html">http://www.ecokloud.com/biodegradable/compostable/paper-pla-hot-cups.html</a>
✓	<a href="http://biomasspackagingstore.com/compostable-coffee-cups-hot-cups-lids.aspx">http://biomasspackagingstore.com/compostable-coffee-cups-hot-cups-lids.aspx</a>
	<a href="http://www.bioshelltableware.com/products/Hot%20Cups.pdf">http://www.bioshelltableware.com/products/Hot%20Cups.pdf</a>
	<a href="http://www.stalkmarketproducts.com/products/planet-compustable-hot-cup/">http://www.stalkmarketproducts.com/products/planet-compustable-hot-cup/</a>
	<a href="http://www.stalkmarketproducts.com/products/planet-compostable-double-wall-hot-cups/">http://www.stalkmarketproducts.com/products/planet-compostable-double-wall-hot-cups/</a>

Pricing on website	Acceptable Material Providers Item: Hot Cup Lids
✓	<a href="http://www.ecoproducts.com/ecolid_renewable_hot_cup_lids_1.html">http://www.ecoproducts.com/ecolid_renewable_hot_cup_lids_1.html</a>
✓	<a href="http://www.worldcentric.org/biocompostables/cups/hot-cups">http://www.worldcentric.org/biocompostables/cups/hot-cups</a>
✓	<a href="http://biomasspackagingstore.com/compostable-coffee-cups-hot-cups-lids.aspx">http://biomasspackagingstore.com/compostable-coffee-cups-hot-cups-lids.aspx</a>
	<a href="http://www.bioshelltableware.com/products/Hot%20Cups.pdf">http://www.bioshelltableware.com/products/Hot%20Cups.pdf</a>
	<a href="http://www.stalkmarketproducts.com/products/planet-compostable-lids/">http://www.stalkmarketproducts.com/products/planet-compostable-lids/</a>
Pricing on website	Acceptable Material Providers Item: Tissue Paper
✓	<a href="http://biomasspackagingstore.com/envirojolt-quicksheets-deli-bakery-sheets-6-x-10-case-of-5000.aspx">http://biomasspackagingstore.com/envirojolt-quicksheets-deli-bakery-sheets-6-x-10-case-of-5000.aspx</a>
✓	<a href="http://biomasspackagingstore.com/envirojolt-quicksheets-deli-bakery-proof-sheets-8-x-10-case-of-5000.aspx">http://biomasspackagingstore.com/envirojolt-quicksheets-deli-bakery-proof-sheets-8-x-10-case-of-5000.aspx</a>
	<a href="http://www.bagcraft.com/wpcontent/themes/Bagcraft/docs/FoodservicePackagingProductGuide.pdf">http://www.bagcraft.com/wpcontent/themes/Bagcraft/docs/FoodservicePackagingProductGuide.pdf</a> **use only EcoCraft options on pages 10,11,12,14 and 16 only
Pricing on website	Acceptable Material Providers Item: Napkins
✓	<a href="http://www.ecoproductsstore.com/napkins.html">http://www.ecoproductsstore.com/napkins.html</a>
✓	<a href="http://www.worldcentric.org/biocompostables/paper">http://www.worldcentric.org/biocompostables/paper</a>
✓	<a href="http://www.hoffmaster.com/Listing/Earth-Wise-Tree-Free.aspx?cid=621">http://www.hoffmaster.com/Listing/Earth-Wise-Tree-Free.aspx?cid=621</a>
✓	<a href="http://biomasspackagingstore.com/biodegradable-compostable-napkins-paper-towels-tissue.aspx">http://biomasspackagingstore.com/biodegradable-compostable-napkins-paper-towels-tissue.aspx</a>
Pricing on website	Acceptable Material Providers Item: Plates / Bowls
✓	<a href="http://www.ecoproducts.com/world_delight_food_container.html">http://www.ecoproducts.com/world_delight_food_container.html</a>
✓	<a href="http://www.ecoproducts.com/square_sugarcane_plates.html">http://www.ecoproducts.com/square_sugarcane_plates.html</a>
✓	<a href="http://www.ecoproducts.com/sugarcane_plates.html">http://www.ecoproducts.com/sugarcane_plates.html</a>
✓	<a href="http://www.ecoproducts.com/sugarcane_bowls.html">http://www.ecoproducts.com/sugarcane_bowls.html</a>
✓	<a href="http://www.hoffmaster.com/Listing/Earth-Wise-Tree-Free.aspx?cid=621">http://www.hoffmaster.com/Listing/Earth-Wise-Tree-Free.aspx?cid=621</a>
✓	<a href="http://bridge-gate.com/products/bridge-gate-natural-brown-dinnerware/">http://bridge-gate.com/products/bridge-gate-natural-brown-dinnerware/</a>
✓	<a href="http://harvestcollection.genpak.com/products.cfm">http://harvestcollection.genpak.com/products.cfm</a>
✓	<a href="http://www.worldcentric.org/biocompostables/bowls">http://www.worldcentric.org/biocompostables/bowls</a>



✓	<a href="http://www.worldcentric.org/biocompostables/plates/">http://www.worldcentric.org/biocompostables/plates/</a>
✓	<a href="http://www.ecokloud.com/biodegradable/compostable/bagasse-plates.html">http://www.ecokloud.com/biodegradable/compostable/bagasse-plates.html</a>
✓	<a href="http://www.ecokloud.com/biodegradable/compostable/bagasse-bowls.html">http://www.ecokloud.com/biodegradable/compostable/bagasse-bowls.html</a>
	<a href="http://www.stalkmarketproducts.com/products/stalkmarket-paper-tableware/">http://www.stalkmarketproducts.com/products/stalkmarket-paper-tableware/</a>
✓	<a href="http://biomasspackagingstore.com/compostable-biodegradable-bowls.aspx">http://biomasspackagingstore.com/compostable-biodegradable-bowls.aspx</a>
✓	<a href="http://biomasspackagingstore.com/compostable-biodegradable-plates-dinnerware.aspx">http://biomasspackagingstore.com/compostable-biodegradable-plates-dinnerware.aspx</a>
	<a href="http://www.stalkmarketproducts.com/products/compostable-food-containers/">http://www.stalkmarketproducts.com/products/compostable-food-containers/</a>
	<a href="http://www.bioshelltableware.com/products/Paper%20Bowls.pdf">http://www.bioshelltableware.com/products/Paper%20Bowls.pdf</a>
	<a href="http://www.bioshelltableware.com/products/Plant%20Fiber%20Plates%20and%20Bowls.pdf">http://www.bioshelltableware.com/products/Plant%20Fiber%20Plates%20and%20Bowls.pdf</a>

# Appendix E Waste Management Phoenix Open Sustainable Giveaways Guidance



Welcome to the Waste Management Phoenix Open, a Zero Waste golf tournament. Our goal of becoming a truly Zero Waste event involves all of us - and it's a process that touches every aspect of the tournament, beginning long before the first golfer hits the first drive on Thursday's opening round. We thank you in advance for embracing the challenge and your role in making it a reality.

This **Sustainable Giveaways Guidance** is designed to be a one-source reference for any goods given away to golfers, volunteers, tournament attendees or employees. It will help ensure that promotional items are of value to the recipient, have at least one sustainability attribute, and are recyclable or compostable.

The purpose of any giveaway is to promote your products and, ideally, will go home with the recipient. As a Zero Waste event, only materials that can be recycled or composted are allowed on course. If your items do not meet these criteria, please ensure that they are of value to the recipient. To better understand what materials are acceptable; please contact Jessica Lagreid from Waste Management at [jlagreid@wm.com](mailto:jlagreid@wm.com). Should you have leftover giveaway items that are not recyclable or compostable, either take them with you or contact Jessica to identify a donation group. As part of our continued commitment to make the WMPO "The Greenest Show on Grass", we suggest that you provide giveaways that have one or more of the following sustainable attributes:

## Sustainable Fiber:

- Recycled polyester (rPET)
- Certified organic cotton
- Fair Trade cotton
- Better Cotton Initiative cotton
- Upcycled materials
- Hemp
- Tencel
- Soy
- Coconut

## Sustainable Materials (for non-wearables):

- Recycled glass, metal or plastic
- Reclaimed or repurposed items
- Reclaimed wood
- FSC certified wood
- BPA free
- Locally made
- Hand-crafted, made from recycled materials
- Employing local artisans
- Made from local/organic materials

## Sustainable Manufacturing:

- Global Organic Textile Standard ([www.global-standard.org](http://www.global-standard.org))
- Fair Trade Certified ([www.fairtradecertified.org](http://www.fairtradecertified.org))
- Bluesign ([www.bluesign.com](http://www.bluesign.com))

## Sustainable Substrates:

Substrates, such as note pads, playing cards, material signs are printed on, that are environmentally responsible, socially beneficial and economically viable. Examples include but are not limited to those made from recycled material (at least 30% post consumer), FSC certified paper, and 100% recyclable materials.

The Waste Management Phoenix Open recognizes that being leaders in sustainability carries a responsibility to the environment and, in particular, conserving the world's natural resources. We fully support responsible environmental management practices that promote sustainability and result in long-term economic and environmental benefit. Thank you for your support.



## Appendix F Procurement

(EN2, EN27, PR1, PR3, E09, S09, S010) To maximize the sustainability of sustainable attributes of official event apparel, giveaways and other promotional items, WM prioritized purchasing items that were reusable, certified organic, sustainable or eco-friendly, manufactured with recycled content, and recyclable. Items procured for the 2013 WMPO are listed in the table below.

ITEM NAME	ECO DESCRIPTION	QUANTITY (#)	QUANTITY (%)	PRICE (%)
Rethink Shirts	Made from 100% recycled plastic; Reusable	2,995	37.43%	32.10%
Anvil Organic Long Sleeve T-Shirt	Made from 100% Certified Organic Cotton; Reusable	1,000	12.42%	7.89%
Men's Fleece Full Zip Vest	Made from 100% recycled polyester; Reusable	1,000	12.42%	28.40%
Golf Towels made from Hydrosilk	Made from Hydrosilk material; Reusable	600	7.45%	7.02%
Eco Friendly Cobbler Smock	Made from 65% Recycled Polyester/35% Organic Cotton; Reusable	400	4.97%	7.11%
Recycled PET Lanyard	Made from 100% Recycled PET; Reusable	300	3.72%	0.61%
White Eco Friendly Box	Made from 100% Recycled Materials; Reusable	300	3.72%	1.74%
Light up sunglasses	Reusable	240	2.98%	1.06%
70z. Multi Color Light Up Martini Glasses	Reusable	204	2.53%	1.16%
Green Glow Beer Mugs	Reusable	200	2.48%	0.91%
21" x 42" Poplin Pillow Case	Reusable	150	1.86%	2.14%
3" x 2" White Stickers	N/A	150	1.86%	0.06%
Laminated Shopper	Reusable	125	1.55%	0.26%
All-Sport Junior Cooler	Reusable	110	1.37%	1.46%
Men's Waffle Polo	Made from 65% recycled polyester/35; Reusable	66	0.82%	1.74%
Lawn GreenVansport Omega Solid Mesh Tech Polo Shirts	Reusable	51	0.63%	1.23%
Men's Lightweight Windshirt	Made from 44% recycled polyester dobby; Reusable	41	0.51%	1.41%
Men's Moisture Wicking Polo Shirt	Made from 100% Recycled Polyester; Reusable	34	0.42%	1.33%
Lawn GreenVansport Omega Solid Mesh Tech Polo Shirts	Reusable	27	0.34%	0.65%
Ladies' Polyester Performance Waffle Polo Shirt	Made 44% Recycled Polyester Dobby; Reusable	21	0.26%	0.55%
Ladies' Moisture Wicking Polo Shirt,	Made from 100% Recycled Polyester; Reusable	10	0.12%	0.39%
MicroGREEN 18 oz Cups	Made from up to 50% Recycled Plastic; Reusable	7	0.09%	0.66%
Port Authority Bamboo Blend Pique Sport Shirt	Made from 100% Bamboo material; Reusable	2	0.02%	0.07%
Men's Polyester Fleece Full-zip Jacket	Made from 100% Recycled Polyester; Reusable	1	0.01%	0.04%
<b>Total</b>		<b>8,054</b>		

# Appendix G Survey Results

(1.2, 4.17, EC1, PR5, E04, E011, E012) Several surveys are used to collect stakeholder feedback and gauge the satisfaction of fans and participants during and following the tournament. In 2013, surveys were sent to local leaders and influential business people, Recycling Ambassadors, fans that visited the WM Expo exhibit, vendors, and fans on course. Descriptions and summaries of results are provided below.

After the 2013 WMPO, WM sent a survey to civic-minded opinion leaders and influential business people in the Phoenix area to determine the impact of our Zero Waste Challenge and sustainability initiatives. Below are sustainability-related highlights from the survey.

## LOCAL LEADER AND BUSINESS PERSON SURVEY RESPONSE

Approximately two-thirds of respondents in both audiences have heard of the Zero Waste Challenge and most understand the purpose as recycling all event materials and avoiding disposal in landfills.

While most are aware that Waste Management set the goal of a 90% diversion rate (and find it credible), awareness drops regarding achievement of the goals. This was consistent with 2012 survey results.

The initiatives that rank near the top in terms of impact include: all items from vendors being recyclable/compostable, composting waste, reusing the golf balls from the water fixture logo, and achieving a 90% waste diversion rate.

When asked to select which initiatives are necessary for the WMPO to stand out as the greenest PGA TOUR event, respondents prioritized all vendor items being recyclable or compostable, diverting 100% of waste, using more gray water in lavatories and purchasing renewable energy.

WM conducted interviews around the course, asking individuals if they have played golf or attended a golf tournament before, if they would do either of these activities again in the next year, where they traveled from, and if they noticed three of the tournament’s on-course initiatives: no trash containers on the course, water conservation initiatives, and the use of alternative energy. Results are shown in the table below.

ATTENDEE GOLF EXPOSURE	%
Played golf or attended a tournament before	87.6%
Plan to play golf or attend another tournament in the next 12 months	88.2%

ON-COURSE INITIATIVES RECOGNIZED	%
No trash cans on course	78.7%
Water reuse and conservation	37.1%
Tournament powered by renewable energy	32.6%

A SurveyMonkey survey was sent to vendors after the event. Many vendors provided feedback verbally to consultants and the Thunderbird concessions chairman and so did not respond to the survey request. Results are in the table below.

## VENDOR SURVEY RESPONSES

82% found that their vendor area had the appropriate amount of waste service during the event.

94% found that they had all of the containers, signage and waste bags they needed. Two vendors added the following:

- “Their crew did a great job maintaining waste bins inside the tents.”
- “The WM team was always nearby so we could grab more if and when needed.”



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100% reported that their waste containers were serviced properly every night.

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When asked how clear were the vendor guidelines (Acceptable Materials List) was in explaining what products and materials can be used at the event, vendors reported the following:

- 65% said “Very clear”
  - 29% said “Somewhat clear”
  - 6% reported that they did not receive the guidelines
- 

Compostable straws and stir sticks were the only items listed as not having recyclable or compostable alternatives.

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In response to a request to describe costs in relation to adhering to the WMPO Vendor guidelines for supplies:

- 12% said their costs remained the same
  - 41% said their costs increased
  - 47% were not sure
- 

Regarding the impact of the recycling and composting training provided to their staff, on a scale of 1 (Not Effective) to 5 (Very Effective), vendors reported an average response of 4.0, although 53% believe that their staff did not receive any training.

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35% reported that they have been asked to adhere to a “recycling and compostable only” guideline at other events.

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Regarding their opinion of Waste Management, on a scale of 1 (Very poor) to 10 (Excellent) vendors reported an average response of 8.9, with 47% reporting a perfect score.

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Responses to the question “After having worked with Waste Management in the 2013 WMPO and participating in the Zero Waste Challenge, how has your perception of Waste Management changed?” were as follows:

- 35% said Much more favorable
  - 41% said Somewhat more favorable
  - 24% said No more or less favorable
- 

The following are some of the verbatim responses vendors provided when asked, “Outside of what you do at the WMPO, what does your company do to be sustainable?”

- “Bail our own cardboard, use only sustainable products for service ware.”
  - “Solar Power on car ports. Recycling bins all over campus.”
  - “No I wish they did.”
  - “We have a commercial shredder for all documents and paper.”
  - “We divert the equivalent of 60 million milk jugs from landfill sites by grinding them up and making them into patio furniture.”
  - “-Plant based materials for bottles -All bottles 100% recyclable -Facility recycles 98% of all waste -Hybrid Fleet -All lights on timers and sensors -Polos and uniforms made of recycled bottles -Printers will only print double sided -Fund water programs to educate farmers in Northern AZ on how to conserve water -TRIP reduction program encourages employees to walk, bike, carpool, or work from home to conserve.”
  - Five vendors mentioned recycling or reuse while three vendors wrote in “Nothing” or left the question blank.
- 

The following are some of the verbatim responses vendors provided when asked, “What suggestions would you make to improve vendor engagement in the WMPO sustainability initiatives?”

- “The WM crew was amazing to work with. The workers taking care of the trash and replacing the bags had nice
-



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manners and were a pleasure to deal with.”

- “Provide 5 gallon pails in kitchens for food waste only.”
  - “More training.”
  - “You guys did a good job.”
  - “Purchase products. Post folks near containers, bus tables so trash goes in the correct container.”
  - Eleven vendors wrote in “Nothing” or left this question blank.
- 

The following are some of the verbatim responses vendors provided when asked, “What motivates you to improve your company's sustainability at the WMPO or elsewhere?”

- “Trying to leave this planet in a better place for future generations.”
  - “The overall public awareness and perception”
  - “Helping to create a cleaner, healthier planet”
  - “Trying to leave the world a better place for future generations.”
  - “Seeing the results of the WMPO makes us want to do MORE!!”
  - “The environment.”
  - “Our children's future”
  - “It's the direction that all companies need to take, and here at Coke, we want to be the leaders and innovators.”
  - Five vendors left this question blank.
-

## Appendix H Thunderbirds Charities

(S01, EO1, EC1, EC9, S010) The amount of money raised by the Thunderbirds in 2013 is not available at the time of publication, and will be added when it is available.

The Thunderbirds raised \$5,542,416 dollars for charity in 2012.

In 2013, WM continued the “Green Out for Charity” event to raise money for three non-profit organizations. This included Arizona Forward, Keep America Beautiful and Keep Phoenix Beautiful; Keep Phoenix Beautiful was the 2012 recipient of \$50,000 from “Green Out Day.” Facebook users over the age of 13 in the U.S. and Canada (except Quebec) were asked to vote on their favorite charities between 12/12/12 and 1/21/13 by visiting the promotion on the WM or Waste Management Phoenix Open Facebook page. To vote, individuals had to “Like” one of the charities on Facebook and provide contact and location information.

The Saturday of the tournament is “Green Out Day.” For every person who wears green, the Thunderbirds donate “green”. In 2013, this donation reached \$60,000, which was divided among all three “Green Out for Charity” organizations. Keep Phoenix Beautiful received 50% (\$30,000), of the funds, Arizona Forward received 35% (\$21,000), and Keep American Beautiful 15% (\$9,000).

Many of these funds benefit local youth organizations including Homeward Bound, The First Tee, Arizona Special Olympics, Valley of the Sun United Way, Valley Boys and Girls Clubs and the Junior Golf Association of America. More information on benefiting charities of the WMPO can be found at the WMPO website.

In addition, the WMPO supports free booth space for one non-profit organization daily in the Expo Booth during the event through Birdies for Charity. In 2013, this included:

- Tuesday 1/28/13: The Miracle League of Arizona ([www.mlaz.org](http://www.mlaz.org))
- Wednesday 1/29/13: Future for Kids ([www.futureforkids.org](http://www.futureforkids.org))
- Thursday 1/30/13: Delta Dental Foundation of Arizona ([www.deltadentalaz.com/foundation](http://www.deltadentalaz.com/foundation))
- Friday 1/31/13: Banner Health Foundation ([www.bannerhealth.com](http://www.bannerhealth.com))
- Saturday 2/1/13: Power Paws Assistance Dogs ([www.azpowerpaws.org](http://www.azpowerpaws.org))
- Sunday 2/2/13: Liberty Wildlife Rehabilitation Foundation ([www.libertywildlife.org](http://www.libertywildlife.org))

# Appendix I Management

(2.8, 4.1, 4.8, 4.9, 4.14, 4.15, 4.16, EC6, LA1, LA2) Management of the sustainability aspects of the WMPO is undertaken by Waste Management Sustainability Services, which in 2013 included three consultants working part-time year-round and full-time during the tournament, and one intern working part-time for four months leading up to the tournament and full-time during the tournament. The intern and Recycling Ambassador volunteers supported WM consultants. Health and Safety and waste-related services are managed by WM Four Corners Market Area. Other volunteers, such as marshals and concessions staff, are managed by the Thunderbirds. At the 2013 WMPO, 73.2% of the all vendors were local to the Phoenix area. Stakeholder groups and roles for the 2013 WMPO are listed in the table below.

STAKEHOLDER GROUP	DESCRIPTION
Thunderbirds	The Thunderbirds, hosts of the Waste Management Phoenix Open, were founded in 1937 when the Phoenix Chamber of Commerce expanded its role as a convention and tourism bureau. Each member has demonstrated a sincere interest in sports and a dedication to community affairs. In their history, they have raised more than \$80 million for Arizona charities.
PGA TOUR	The PGA TOUR is a tax-exempt membership organization of professional golfers. The mission of the PGA TOUR is to substantially increase player financial benefits while maintaining its commitment to the integrity of the game and to generate revenue for charitable causes in their communities.
Sponsors	Includes Title Sponsor (WM), Eight Featured Sponsors, and 25 other sponsors.
Media	Broadcast, news, press.
Players	An estimated 132 players begin in Round 1 of the tournament.
City of Scottsdale	Municipality in which the event takes place.
Vendors	Construction, equipment, concessions, waste and sanitary services, security, transportation, musicians.
Workforce	Paid employees, temporary labor.
Volunteers	~4000 volunteers annually: concessions, Recycling Ambassadors, Marshalls, scoring, security.
Fans	For the week, total attendance in 2013 was 525,821
Beneficiaries	With more than \$80 million raised for Arizona charities, countless individuals and groups have benefited from the monies raised through the Phoenix Open.

## Training

(4.6, LA6, LA10) Although the average hours of training per year per employee and/or volunteer are not tracked, all WMPO employees, temporary workers and volunteers are trained on safety procedures, provided safety equipment related to their jobs, and provided with a clean and secure workplace. Sub-contractors at the event have their own occupational health and safety procedures. All WM employees read the [WM Code of Conduct](#), including a section on conflict of interest, and sign a statement of understanding and compliance.

Recycling Ambassadors and vendors are trained or instructed in the practical requirements of WM's sustainability management system.



## Contacts

The table below lists contact information for those responsible for specific data and information for the 2013 WMPO.

DATA/INFORMATION NEEDS	ORGANIZATION	CONTACT	PHONE	EMAIL
Printing Inventory	Creative Litho, Inc.	Chris Baker	602-558-4916	chris@gocreativelitho.com
Generator Diesel (gal)	Ferrell Gas	Michael Leptuch	602-278-8511	mikeleptuch@ferrellgas.com
Propane (gal)	Ferrell Gas	Michael Leptuch	602-278-8511	mikeleptuch@ferrellgas.com
Recycled Cooking Oil (gal)	Green Dining	Marvin McCarthy	480-272-5200	marv@greendiningnet.com
Shuttle Diesel (gal)	ProEM	Brady Castro	480-507-0999	brady.castro@proem.org
Turf Purchased (sq ft)	ProEM	Brady Castro	480-507-0999	brady.castro@proem.org
Scrim Purchased (sq ft)	T&B	Danny Ellis		dellis@tbequipment.com
Sponsor Rental Gasoline Usage (gal/mi)	Thunderbirds	Cheryl Hussey		chussey@wmphoenixopen.com
Attendance (number of people)	Thunderbirds	Cheryl Hussey		chussey@wmphoenixopen.com
Metered Electricity Use (kWh)	Thunderbirds	John Goff	602-757-8390	jgoff@wmphoenixopen.com
Metered Water Use (gal)	Thunderbirds	John Goff	602-757-8390	jgoff@wmphoenixopen.com
Generator Biodiesel (gal)	Thunderbirds	John Goff	602-757-8390	jgoff@wmphoenixopen.com
Sign Inventory	Trademark Visual	Dave Baum	602-792-3131	dbaum@trademarkvisual.com
Marketing - WM Corporate	WM	Lisa Gordon	713-512-6270	lgordon3@wm.com
Waste Diversion (tons)	WM	Melina Oakes	602-323-3703	moakes@wm.com
Waste Transport Diesel Usage (gal/mi)	WM	Sherri Knape	602-323-3740	sknape@wm.com
Waste Transport CNG Usage (gal/mi)	WM	Sherri Knape	602-323-3740	sknape@wm.com
Volunteer Training Information	WM	Jessica Lagreid	602-725-7248	jlagreid@wm.com
Portable Toilet Transport Diesel Usage (gal/mi)	WM	Sherri Knape	602-323-3740	sknape@wm.com
Portable Toilet Water Use (gal)	WM	Sherri Knape	602-323-3740	sknape@wm.com
Portable Toilet Graywater Reuse (gal)	WM	Sherri Knape	602-323-3740	sknape@wm.com
Turf/Scrim/Carpet Recycled (tons)	WM	Melina Oakes	602-323-3703	moakes@wm.com
Worker Safety Information	WM	Sherri Knape	602-323-3740	sknape@wm.com
Establishing Operational Controls	WM	Sherri Knape	602-323-3740	sknape@wm.com
	WM	Michele Grossman	510-847-6159	mgrossm1@wm.com
	Thunderbirds	John Goff	602-757-8390	jgoff@wmphoenixopen.com
Stakeholder Communication	WM	Sherri Knape	602-323-3740	sknape@wm.com
	WM	Michele Grossman	510-847-6159	mgrossm1@wm.com
Supply Chain Management	WM	Sherri Knape	602-323-3740	sknape@wm.com
	WM	Michele Grossman	510-847-6159	mgrossm1@wm.com
	Thunderbirds	Concessions, Food & Beverage Chairman	602-847-6159	<a href="mailto:mnodila@pathlightinvestors.com">mnodila@pathlightinvestors.com</a>

## Event Planning and Evaluation

During the event, WM asks a percentage of the fans questions related to vehicle miles traveled, method of transport, and number of people sharing the transportation. Feedback is also requested regarding their understanding of the WMPO's sustainability initiatives.

During the event, WM walks the course every day, talking to fans, observing behavior, and asking volunteers for feedback on how the operations are running. WM also checks with vendors that the food and beverage service items they are using meet the

requirements and get feedback on how to improve on the event in the upcoming year. WM Sustainability Services, WM Four Corners Market Area and corporate marketing groups begin meeting once a week (via conference call and in person) to begin discussions on marketing the event, reporting on the progress of sustainability initiatives, identifying new communication needs, encouraging sustainable promotional items, and appropriating materials to use. These meetings continue up to the start of the event.

Approximately four months before the WMPO tournament begins, WM's Sustainability Services, Phoenix Hauling and the Thunderbird concessions chairperson meet with the vendors. At this time, sustainability initiatives are reviewed and the vendors' ongoing support is requested. This is followed by other, more specific meetings as the event draws near.

After the WMPO tournament, WM collects data from the Thunderbirds, vendors and Phoenix Hauling to incorporate into the Sustainability Report. Recommendations from the previous report are reviewed and discussed to determine how to continuously improve the process. Feedback from stakeholders is reviewed and new emerging issues are identified. Feedback from the report is solicited from WM top management and the Thunderbirds.

With regard to event-related sustainable development issues and the sustainability management system, WM maintains procedures for:

- a) Internal communication between the various levels and functions of WM
- b) Communication with relevant vendors/suppliers and contractors
- c) Receiving, documenting and responding to relevant communication from external stakeholders

## Monitoring and Measurement

(1.2) WM maintains procedures to monitor and measure on a regular basis the key characteristics of its event-related operations and activities that can affect the delivery of its policy, objectives and targets. This includes the recording of information to track performance, relevant operational controls and conformance with objectives and targets, which is documented in the preceding table. WM identifies lessons learned from each event and feeds this learning into the planning and delivery of future events/event-related activity and, where applicable, makes the information available to others. A WMPO Sustainability Report is generated for each event. When practical, equipment that is used for gathering data relevant to the sustainability management system shall be calibrated and maintained and records of this process shall be retained according to WM's procedures. Currently there is no equipment used for gathering data.

## Management System Audit and Management Review

(4.10) WM maintains plans and procedures for annual Sustainability Management System audits in order to determine whether or not the Sustainability Management System conforms to planned arrangements for sustainability management including the requirements of ISO20121, has been properly implemented and maintained, is effective in delivering against the sustainability policy, objectives and targets, and provides information on the results of audits to management.

## Management Review

(1.2, 4.15, 4.16) WM conducts annual WMPO event management reviews at the same time as the management system audit. The purpose of the review is to ensure the continuing suitability, adequacy and effectiveness of the management system. Management reviews assessment opportunities for improvement and the need for changes to the management system, including the sustainable development policy and objectives and targets.

The review shall take the following items into consideration:

- a) Monitoring and measurement results, evaluations of compliance and the findings of internal audits
- b) Communications with stakeholders and changes in stakeholder expectations
- c) Extent to which objectives and targets have been met
- d) Status of corrective and preventive action
- e) Recommendations for improvement
- f) Implementation of previous review recommendations
- g) Progress against sustainable development principles



## Timeline for 2013 Management System Activities (4.16, EO12)



**February 1-2:** WMPO, Survey Fans, Audit Vendors, Observations

**February 8-11:** Management Review

**End of February:** Post-Event Meeting

**March 1 - May 30:** Data Collection, Interaction with stakeholders via email, phone, data requests

**April:** Measurement, Audit Period, Stakeholder surveys

**May:** WMPO Sustainability Report published

**June -December:** Investigation, research, engage community groups, partnerships based on previous reports' investigations

**June/July:** Meeting with Thunderbirds, meeting with WM operations begin

**September - February:** Weekly WMPO calls

**September:** In-person meeting with vendors and organizational meetings

# Appendix J Global Reporting Initiative G3 Index

(3.12) This report follows the Global Reporting Initiative's (GRI) G3 Guidelines and Event Operations Sector Supplement (EOSS). Table I1 below shows how and where the GRI disclosures and indicators are addressed.

Key	
●	Fully reported
⓪	Partially reported
⊗	Did not report - not considered material
X	Not applicable
○	Do not report - data not available

PROFILE DISCLOSURE	DESCRIPTION	REPORTED	CROSS-REFERENCE / DIRECT RESPONSE
<b>1. STRATEGY AND ANALYSIS</b>			
1.1	Statement from the WM and 2012 Big Chief	●	4, 5
1.2	Description of key impacts, risks, and opportunities	●	9, 10, 16-17, 48-50, 54
<b>2. ORGANIZATIONAL PROFILE</b>			
2.1	Name of the organization	●	3, 7
2.2	Primary brands, products, and/or services	⓪	7
2.3	Operational structure of the organization	●	7
2.4	Location of organization's headquarters	●	3, 7
2.5	Number of countries where the organization operates	●	7
2.6	Nature of ownership and legal form	●	In 1986, Thunderbirds Charities, a 501(c)(3) non-profit corporation was established for the purpose of distributing money to charitable causes within the state of Arizona. Thunderbirds are the organizing body of the WMPO. Waste Management is a publicly traded corporation (NYSE: WM). WM is the title sponsor of the WMPO.
2.7	Markets served	●	7
2.8	Scale of the reporting organization	⓪	7, 52
2.9	Significant changes during the reporting period	●	There were no significant changes.
2.10	Awards received in the reporting period	●	4, 6, 7, 10
<b>3. REPORT PARAMETERS</b>			
3.1	Reporting period	●	6
3.2	Date of most recent previous report	●	6
3.3	Reporting cycle	●	6
3.4	Contact point for questions regarding the report or its contents	●	60
3.5	Process for defining report content	●	6, 18-19
3.6	Boundary of the report	●	6
3.7	Specific limitations on the scope or boundary	●	6
3.8	Basis for reporting on joint ventures, subsidiaries, etc.	X	Not relevant to scope of report.
3.9	Data measurement techniques and the bases of calculations	●	9, 12-15

3.10	Explanation of the effect of any re-statements	①	Re-statement of data is used to compare to baseline year.
3.11	Significant changes from previous reporting periods	●	No significant changes from previous reporting periods.
3.12	Table identifying the location of the Standard Disclosures	●	56-61
3.13	Policy and current practice with regard to external assurance	●	Data was verified by the Council for Responsible Sport in 2013.

#### 4. GOVERNANCE, COMMITMENT AND ENGAGEMENT

4.1	Governance structure of the organization	●	7, 52-54
4.2	Position of Chair of Board	●	Jack Pope is WM Non-Executive Chair. Thomas Altieri is Thunderbird Non-Executive Tournament Chairman.
4.3	Independent, non-executive directors on Board	●	WM: 8; (7) males (1) female. TB: 4; (4) males.
4.4	Shareholders / employees communication to Board	①	WM is a publicly traded company. Thunderbirds are 501c3 non-profit.
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives and the organization's performance	●	Thunderbirds are volunteers. Varying portions of compensation for WM employees is based on the performance of WM.
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.	①	52
4.7	Process for determining the composition, qualifications, and expertise of the members of the highest governance body	●	Thunderbirds and WM Board are selected based on skill and experience.
4.8	Mission and values statements, codes, sustainability principles	●	18-19, 31-33, 52-54
4.9	Board procedures for overseeing sustainability management	●	18-19, 52-55
4.10	Processes for evaluating the highest governance body's own performance	●	The Waste Management Phoenix Open 2012 Sustainability Report evaluates the performance of the Thunderbirds and Waste Management. Also see 18-19, 54.
4.11	Precautionary Approach / Principle	●	6, 8, 9, 29-33
4.12	External charters, principles or initiatives endorsed	●	6
4.13	Memberships in associations and/or national/international advocacy organizations	○	
4.14	List of stakeholder groups engaged by the organization	●	52
4.15	Basis for identification and selection of stakeholders	●	18-19, 52-54
4.16	Approaches to stakeholder engagement	●	18-19, 52-55
4.17	Key topics and concerns raised through stakeholder engagement	●	48-49

#### ECONOMIC (EC) DISCLOSURE ON MANAGEMENT APPROACH

3, 24, 33, 44, 50

#### EC PERFORMANCE INDICATORS

EC1	Direct economic value generated and distributed	①	3, 20, 22, 24-28, 48-51
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EC2	Financial implications, risks and opportunities due to climate change	0	29-30
EC4	Significant financial assistance received from government	●	No significant financial assistance is received from government.
EC6	Policy, practices, and proportion of spending on locally-based suppliers	0	12, 52
EC8	Development and impact of infrastructure investments and services	0	20
EC9	Significant indirect economic impacts	●	3, 20, 22, 24-28, 51
EC3, EC5, EC7		X	
<b>ENVIRONMENTAL (EN) DISCLOSURE ON MANAGEMENT APPROACH</b>			<b>7, 12, 13, 16, 17-19, 27-31, 50</b>
<b>EN PERFORMANCE INDICATORS</b>			
EN1	Materials used by weight or volume	0	9-10, 14-17, 24-28
EN2	Percentage of materials used that are recycled input materials	●	10-12, 14, 16, 24-28, 47
EN3	Direct energy consumption by primary energy source	●	14, 16, 24-28
EN4	Indirect energy consumption by primary source	●	14, 16, 24-28
EN5	Energy saved due to conservation and efficiency improvements	0	14, 16, 24-28
EN6	Initiatives to provide energy-efficient or renewable energy based events and reductions in energy requirements	●	14, 16-17, 24-28
EN7	Reduce indirect energy consumption	●	14-16, 24-28
EN8	Total water withdrawal by source, conservation and improvement initiatives and results	●	14, 16, 24-28
EN9	Water sources significantly affected by withdrawal of water	●	8, 14
EN10	Percentage and total volume of water recycled and reused	●	16, 24-28
EN11	Land in / next to high biodiversity value	●	8, 14, 31-33
EN12	Impacts on Biodiversity	●	8, 24-28, 31-33
EN13	Habitats protected or restored	●	31-33
EN14	Managing impacts on biodiversity	●	31-33
EN15	IUCN Red List species	●	None
EN16	Total direct and indirect greenhouse gas emissions by weight	●	16-17, 24-28
EN17	Other relevant indirect greenhouse gas emissions by weight	0	15-17, 24-28
EN18	Initiatives to reduce greenhouse gas emissions	●	9, 15-16
EN22	Total weight of waste	●	9, 13, 16
EN23	Total number and volume of significant spills	●	There were no significant spills in the reporting period.
EN24	Transported, imported, exported or treated hazardous waste	●	There was no waste that was deemed hazardous within the reporting period.
EN25	Water bodies and related habitats affected by discharges	●	8, 14, 31-33
EN26	Mitigating environmental impacts from products and services	●	9, 15-16, 24-28
EN27	Products sold or provided and packaging reclaimed	●	11-12, 47
EN28	Fines and sanctions for non-compliance legislation	●	No fines or non-monetary sanctions were incurred.
EN29	Environmental impacts of transportation	●	15-16, 24-28
EN19, EN20, EN21, EN30		○	

LABOR PRACTICES AND DECENT WORK (LA) DISCLOSURE ON MANAGEMENT APPROACH			33-41
LA PERFORMANCE INDICATORS			
LA1	Total workforce	●	52
LA2	Total new employee hires and volunteers	●	52
LA7	Rates of injury	●	Zero injuries, occupational diseases, lost days, absenteeism, and work-related fatalities occurred.
LA6	Occupational health and safety	●	52
LA10	Hours of training	●	13, 52
LA3, LA4, LA5, LA9, LA11, LA14, LA15		X	
LA8, LA12, LA13		○	
HUMAN RIGHTS (HR) DISCLOSURE ON MANAGEMENT APPROACH			See Performance Indicators. WM's adheres to a Code of Conduct that is consistent with the UN Global Compact.
HR PERFORMANCE INDICATORS			
HR4	Discrimination	●	There were no incidents of discrimination reported.
HR5	Operations and suppliers right to exercise freedom of association and collective bargaining	●	There were no operations or suppliers identified as violating the right to exercise freedom of association and collective bargaining.
HR6	Operations and suppliers significant risk for incidents of child labor	●	There were no operations or suppliers identified as having significant risk for incidents of child labor.
HR7	Operations and suppliers significant risk for forced or compulsory labor	●	There were no operations or suppliers identified as having significant risk for incidents of forced or compulsory labor.
HR8	Security personnel or volunteers trained in human rights policies	●	There were no security personnel or volunteers trained in policies or procedures concerning human rights.
HR9	Violations involving rights of indigenous people and actions taken.	●	There were no incidents of violations involving rights of indigenous people reported.
HR10	Human rights reviews and/or impact assessments	●	There were no operations subject to human rights reviews and/or impact assessments.
HR11	Grievances related to human rights	●	There were no grievances related to human rights filed.
HR1, HR2, HR3		○	
SOCIETY (SO) DISCLOSURE ON MANAGEMENT APPROACH			See Performance Indicators. 21-24, 27-31, 33-41, 44



## SO PERFORMANCE INDICATORS

SO1	Local community engagement, impact assessments, and development programs.	①	11, 13, 20-21, 24-28, 51
SO2	Business units analyzed for risks related to corruption	●	Zero business units are analyzed for risks related to corruption.
SO3	Workforce trained in anti-corruption policies	●	Zero percent of the workforce is trained in anti-corruption policies and procedures.
SO4	Incidents of corruption and wrong-doing	●	Zero incidents of corruption and wrong-doing have been reported.
SO7	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	●	Zero legal actions have been made in relation to anti-competitive behavior, anti-trust, and monopoly practices.
SO8	Significant fines and non-monetary sanctions for non-compliance with laws and regulations	●	Zero fines and non-monetary sanctions for non-compliance with laws and regulations.
SO9	Operations with significant potential or actual negative impacts on local communities	●	9-14, 16, 24-28, 29-33, 47
SO10	Prevention and mitigation measures for negative impacts on local communities	●	20-22, 31-33, 47, 51
SO5, SO6		○	

## PRODUCT RESPONSIBILITY (PR) DISCLOSURE ON MANAGEMENT APPROACH

32, 42-43, 44

## PR PERFORMANCE INDICATORS

PR1	Life cycle stages in which wellbeing and the health and safety impacts are assessed for improvement	●	11-13, 18-19, 24-28, 47
PR2	Incidents of non-compliance concerning customer wellbeing and health and safety impacts	●	There have been no incidents of non-compliance with regulations and voluntary codes concerning customer wellbeing and health and safety impacts of the event and its products and services.
PR3	Product information required by procedures	●	47
PR4	Incidents of non-compliance concerning product and service information and labeling	●	There have been no incidents of non-compliance with regulations and voluntary codes concerning the event and its product and service information and labeling.
PR5	Practices related to customer satisfaction	●	24-28, 48-50
PR7	Incidents of non-compliance concerning marketing communications	●	There have been no incidents of non-compliance with regulations and voluntary codes concerning marketing communications.
PR8	Substantiated complaints regarding breaches of customer privacy and losses of customer data	●	There have been no substantiated complaints regarding breaches of customer privacy and losses of customer data.

PR9	Monetary value of significant fines	●	There have been no non-compliances with legislation concerning the provision and use of products and services during the reporting period.
PR6		○	
<b>EO INDICATORS</b>			
EO1	Direct economic impacts and value creation as a result of sustainability initiatives	●	3, 51
EO2	Modes of transport taken by attendees and participants and initiatives to encourage the use of sustainable transport options	●	15-16, 24-28
EO3	Impacts of transporting attendees and participants to and from the event	●	15-16, 24-28
EO4	Socially inclusive environment	○	48-50
EO5	Accessible environment	○	11, 20-22, 24-28
EO6	Impacts of initiatives to create an accessible environment	○	20-22, 24-28
EO7	Injuries, fatalities and notifiable incidents	●	There have been no injuries, fatalities and notifiable incidents for attendees, participants and other relevant stakeholders.
EO8	Access to food and beverage that meets policies or local, national or international standards	●	11
EO9	Type and sustainability performance of sourcing initiatives	○	11-13, 16, 24-28, 47
EO11	Sustainability initiatives designed to raise awareness and impact behavior change	●	18-22, 24-28, 48-50
EO12	Knowledge transfer of best practice and lessons learned	●	16-20, 24-28, 48-50, 52-55
EO10, EO13		○	

(3.4) Inquiries related to the content of this report should be directed to Michele Grossman, Regional Consulting Manager, Waste Management at [mgrossm1@wm.com](mailto:mgrossm1@wm.com).

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