



Waste Management Phoenix Open 2014 Sustainability Report



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Waste Management Phoenix Open – Greenest Show on Grass.



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 zero waste is sent to the landfill.

TRANSPARENT REPORTING

- Underwriters Laboratories (UL) Environment Zero Waste to Landfill Certification
- Global Reporting Initiative Reporting Framework
- ISO20121 Sustainable Event Management



THE GREEN OUTCOME

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



WASTE

- 100% Materials diverted from landfill:
45% Recycled; 44% Composted; 11% Waste-to-Energy



ENERGY

- 100% of electricity provided by renewable energy.
- Solar power used to power WM 18th Hole hospitality tent.
- Solar light towers used in key locations on the course.
- 62% of vehicles operated on alternative energy.
- Only biodiesel fuel used in on-site generators.
- Reduced bus fuel use by 650 gallons.



REDUCE & REUSE

- 3 Zero Waste Stations from repurposed 40-cubic yard roll-off dumpsters.
- Signage: 544,097 square feet reused from 2013 and 74% stored for reuse in 2015 tournament.
- 140,000 used golf balls and 750,000 recycled-content golf tees used to create the 2013 tournament WM water features were reused in 2014 and will be reused again in 2015.
- Approximately 10,000 pounds of unused food was donated to a local non-profit.
- Created reusable tote bags from used tournament vinyl and mesh banners.



WATER

- 4,645 gallons of graywater from cooking and cleaning reused in the portable toilets, resulting in significant water savings.
- Purchased BEF Water Restoration Certifications for the 95,380 gallons of fresh water consumed.

COMMUNITY IMPACT

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 \$7 Million

2014 generated charitable donations

Giving Back to the Community

- Donations were given to local organizations that supplied volunteers to work in the Zero Waste Stations.
- Free tournament entry to law enforcement, emergency and military personnel.



Community Engagement Programs & Events

- CBS Outdoor Special Olympics Open
- Youth Engagement with First Tee Dream Day & Standard Bearer programs
- CBS Outdoor Special Olympics Open
- WMPO Executive Sustainability Forum

Communication

Everyone was encouraged to share their passion for golf, the WMPO and green practices using [#greenestshow](#).



Total Reach:

15,500 [#greenestshow](#) posts
22 million impressions

1.0 Introduction

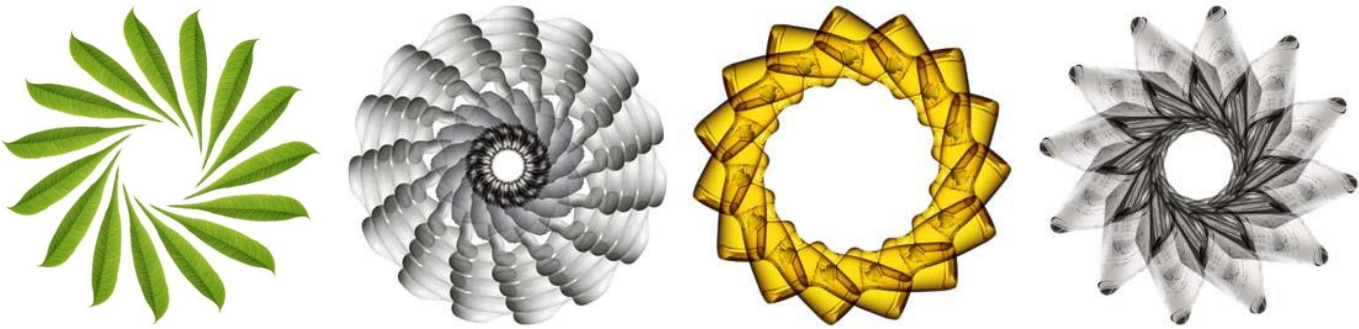
(G4-3, G4-5) The Waste Management Phoenix Open (WMPO)—the best-attended golf tournament in the world—takes place each year in Scottsdale, Arizona, a city with a population of 223,000, which welcomes more than 500,000 fans annually to the “Greatest Show on Grass.”

(G4-EC1, 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 professional and collegiate stadiums and arenas, to international events like the 2012 London Olympics and the 2014 World Cup. The Thunderbirds, Waste Management, the PGA TOUR, TPC Scottsdale and all of the tournament 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. The total economic impact from the 2014 event was estimated to be over \$268 million.



1.1 Statement from Waste Management



Innovation

(G4-1, G4-2, G4-36, G4-42) It drew more fans than any golf tournament ever. It raised over \$7 million for charity. And it produced some great golf, culminating with a winning putt on the final hole.

To us, though, the biggest story went beyond golf.

It involved a goal we considered ambitious and others called impossible - to transform the tournament into a zero waste event by diverting 100% of all waste to recycling, composting and waste-to-energy facilities. In simple terms: 7 days, 563,000 fans, zero waste.

It wasn't easy. However, with planning, commitment, processes, communication and diligence ... we made it happen. We gave it a name, the "Zero Waste Challenge," and invited every fan, player, vendor and sponsor to take part. Together we showed the sporting world - and the rest of the world - just how sustainable a golf tournament could be.

The zero waste goal was first achieved in 2013 and repeated in 2014. We did more, though, than just repeat. We improved. How do you improve on 100% diversion? By doing things at a higher level - more fans meant more participation, more recycling, more composting, with our team working behind the scenes to do it more efficiently than ever. Our efforts and our results were validated by two outside parties - Council for Responsible Sport and UL Environmental. In their report, UL noted that we achieved Zero Waste to Landfill Operations with 10% incineration with energy recovery.

Our customers and golf fans weighed in too, providing their thoughts on the tournament and its environmental mission via social media (#GreenestShow) with 15,544 posts generating 22 million impressions.

We take great pride in what we've accomplished in tandem with our host partners, The Thunderbirds. We've taken sustainability and the "Greenest Show on Grass" message to a bigger and broader audience. Most importantly, we've done it while embracing the excitement, spirit and enjoyment of the most boisterous, highly attended event on the PGA TOUR.

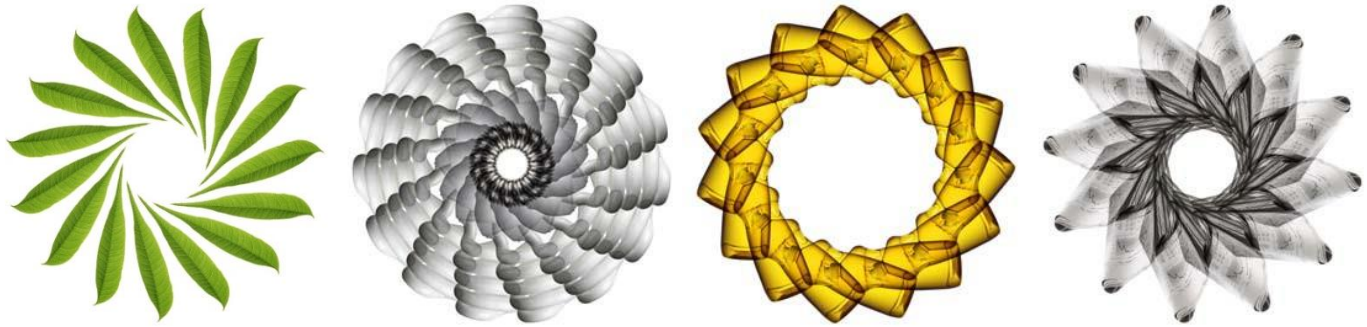
See you all at the tee box next year!

Dave Aardsma



David Aardsma
Chief Sales and Marketing
Officer
Waste Management

1.2 Statement from the Thunderbirds



Beyond Golf

(G4-1, G4-2) The 2014 Waste Management Phoenix Open was a tremendous success. Ideal weather, huge crowds and a down-to-the-wire finish combined to make it memorable on many fronts. As Tournament Chairman and member of the host organization, The Thunderbirds, I am honored to be part of this event. Its legacy extends beyond golf and involves serving and caring for the underprivileged. As we look to continue our mission and impact in the community, this golf tournament provides a great opportunity to make it happen.

In the eight decades that The Thunderbirds have been involved with the Phoenix Open, much has changed. Certainly, no one could have foreseen the growth in attendance. This year, 563,000 fans made their way to TPC Scottsdale - the highest number ever in the history of the tournament, also making it the most highly attended event in professional golf. Its popularity extends to the players, too, as one of their favorite stops on the PGA TOUR.

The fans, players and vendors also helped us reach a remarkable environmental achievement. Under the guidance of our title sponsor, Waste Management, the tournament attained zero-waste status for the second straight year, earning its designation as “The Greenest Show on Grass.” Most importantly, it allows us to put forward a compelling case for our community to be stewards of the environment and to be mindful of our impacts to our planet.

However impressive the attendance and sustainability measures might be, the tournament’s impact on the community brings the greatest satisfaction. In 2014 alone, over \$7 million was generated for local charities, bringing the overall total to over \$93 million since 1932. Behind this number are the local organizations throughout the Valley of the Sun that benefit, including the Boys and Girls Clubs of Scottsdale, Phoenix and East Valley, Special Olympics and numerous others. Also, as the premier sponsor of the Special Olympics Summer Games, The Thunderbirds continue to provide an outlet of athletic expression for all competitors.

Another important measure is the tournament’s economic impact. Using a 2012 WMPO economic impact study conducted by Arizona State University’s W.P. Carey School of Business, WM estimated that \$268 million was pumped into the Arizona economy from WMPO related activity.

As we conclude another banner year for the Waste Management Phoenix Open, I would like to take this opportunity to thank Waste Management and all the fans, players, vendors and supporting sponsors for being part of a great success story.

We will see you all again in 2015!

Tom King



Tom King
Tournament Chairman
2014 Waste Management
Phoenix Open
Thunderbirds

2.0 About This Report

2.1 Reporting Cycle and Framework

(G4-14, G4-15, G4-18, G4-29, G4-30, G4-33, G4-46) This is the fifth 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 and 2014, we continued 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 with a 2-year certification. We achieved Gold certification from the Council, marking the first certification for a golf tournament. Please see [Appendix A](#) for a list of credits achieved. WM also worked with [Underwriters Laboratories Environment Inc.](#) (ULE) for a third-party verification of the 2013 event's diversion, achieving 100% landfill diversion rate with 12% incineration with energy recovery. In 2014, we continued to prepare for our 2015 CRS certification, and worked with ULE to achieve an even higher level of diversion, "Zero Waste to Landfill Operations with 10% incineration with energy recovery." Waste Management hopes to set the standard by which all tournaments are measured.

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.

2.2 Report Boundary and Scope

(G4-18, G4-19, G4-20, G4-21, G4-28) The boundary and scope of the Sustainability Management System for the 2014 WMPO event address the full range of material economic, environmental, and social impacts of the WMPO. The full list of material aspects identified and reported on using GRI standards can be found at the end of this report. The reporting period is November 1, 2013 through May 1, 2014. 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, biodiesel, 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, graywater, and sewage.

3.0 About the Waste Management Phoenix Open

(G4-8) 2014 marks the 79th 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 2014, the WMPO was played January 30 through February 2, at [TPC Scottsdale](#) and attended by 563,008 fans.

3.1 About The Thunderbirds

(G4-3, G4-4, G4-5, G4-6, G4-9, G4-17, G4-34, G4-36, G4-38) 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 \$93 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. For the 2014 WMPO, the Thunderbirds established a new position of Sustainability Chairman. Moving forward, the Sustainability Chairman acted as 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

(G4-4, G4-5, G4-6, G4-9, G4-17, G4-34, G4-38) 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 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 [WM website](#).

(EO4) The WMPO was awarded "Best Title Sponsor Integration" by the PGA TOUR at the TOUR's Tournament Advisory Council (TAC) Meeting for its 2013 tournament at TPC Scottsdale. Waste Management was recognized for working to completely power the event by renewable sources with solar, wind and biomass and diverting 100% of tournament waste to recycling, composting and waste-to-energy endeavors with no trashcans on site. Because of these environmental undertakings, the WMPO additionally received the "Best Promotional Idea" award.

The WMPO was also awarded "Best Special Event," "Best Promotional Idea," and "Most Engaged Community" by the PGA TOUR for its 2013 tournament. The award recognized the Waste Management Phoenix Open not only for the tournament's astounding number of spectators, but also its engagement with volunteers, community leaders, businesses, vendors and its \$6.2 million donation to more than 100 Arizona charities. The fourth award, "Best Special Event," resulted from the Phoenix Suns Charities Shot at Glory. Comprised of celebrities, business leaders, Wounded Warriors and one lucky fan, the closest-to-the-pin contest at famed 16th hole awarded more than \$100,000 to charities chosen by the competitors. The WMPO was previously awarded "Most Engaged Community" for the 2012 tournament and "Best Title Sponsor Integration" for the 2011 tournament.

The WMPO was also recognized by the [Environmental Leader Product and Project Awards](#) program as a Project of the Year. In addition, [Beyond Sport](#), an international organization promoting the use of sport to address social issues in communities around the world, reviewed over 350 entries spanning 70 countries and nominated the WMPO to the shortlist for the annual Sport of the Environment Award.



(E011, E012, E013) This year, WM also created the inaugural PGA TOUR Sustainability Challenge. All PGA tournaments were invited to complete a questionnaire and detail their respective sustainable event initiatives. The winner was invited to attend the 2014 WMPO as well as Waste Management's Fourth Annual Executive Sustainability Forum during the tournament week.

3.3 About TPC Scottsdale



(G4-EN11, G4-EN26) TPC Scottsdale is a 36-hole resort and public golf facility, which sits on 400 acres in the McDowell foothills of the Sonoran. 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.

(G4-14, G4-EN9, G4-EN11, G4-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



(G4-2, G4-14, G4-15, G4-33, G4-EN19, G4-EN27) 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 five years, with the 2010 WMPO as a baseline, a graywater pilot project was implemented, alternative energy sources were utilized, and overall greenhouse gas emissions were reduced. This year, WM also created the PGA TOUR Sustainability Challenge, and purchased [Bonneville Environmental Foundation's](#) (BEF) Water Restoration Certifications to cover the all fresh water consumed at the WMPO. Furthermore, data tracking and reporting is constantly being improved. Using ISO20121 as a sustainable management tool, the Global Reporting Initiative as a reporting framework, the Council for Responsible Sport as a third party to verify our sustainability initiatives, and UL Environment as a third party to verify our waste diversion, the WMPO will continue to be “The Greenest Show on Grass.”

4.1 Zero Waste Challenge

(G4-2, G4-EN1, G4-EN27 G4-SO2, G4-PR1, E012) 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 third 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 the previous two tournaments, there were once again no trash receptacles on the golf course. WM strategically positioned recycling and compost bins for all public and back of house operations; this setup captured separate recoverable recycling and compost streams. For 2014, WM also created Zero Waste Stations (ZWS), repurposed 40-cubic yard roll-off dumpsters that WM transformed into eye-catching kiosks where fans would drop off their waste items. Three ZWS were set up in high traffic areas on course, equipped with solar powered televisions streaming live social media posts to engage attendees about the WMPO's sustainability initiatives and tournament activities. In each ZWS, a group of volunteers collected and sorted materials from attendees.



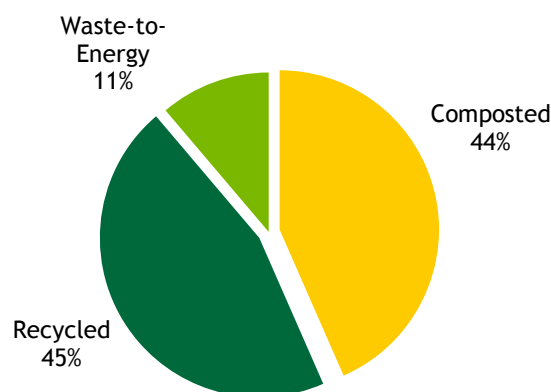
Waste data are tracked by weight tickets and provided by WM Four Corners Market Area's local operations team in Phoenix. Every year, glass, plastics #1 polyethylene (PET), #2 high-density polyethylene (HDPE), #4 low-density polyethylene (LDPE), and #5 polypropylene (PP), metals, mixed paper, and cardboard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

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

- Promoting a collective vision that diverting all event materials from the landfill 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 ongoing communication from the Thunderbirds to all stakeholders on the importance of incorporating sustainability into all elements of the WMPO
- Working with vendors to ensure that all single-use food and beverage containers can be composted
- Working with the Thunderbirds to ensure that eventually all of their event materials will be recyclable, compostable or reusable
- Creating clear and consistent communication indicating what material goes into which bin
- 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 to recycling and compost facilities
- The ability to sort compostable material, recover all recyclable material contaminating the organic material stream, and to compost organic material
- 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
- Adding liquid beverage collection containers (or troughs) at the tournament and Bird's Nest exits to help expedite the disposal of liquid and beverage waste and to prevent liquids from contaminating recyclable materials
- Promoting the goal of diverting 100% of WMPO waste from the landfill in 2014 and in years to come



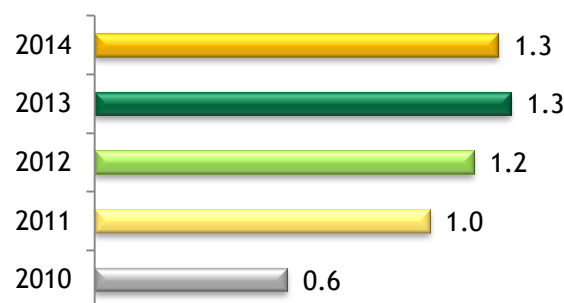
Chart 1: Materials Diverted by Percentage, 2014



(G4-15, G4-33 G4-EN1, G4-EN2, G4-EN22) In 2014, 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, achieving “100% landfill diversion rate with 12% incineration with energy recovery.” This year, the WMPO elevated its certification to “Zero Waste to Landfill Operations with 10% incineration with energy recovery.” 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 ongoing changes in commodity markets, materials such as our green mesh fence and turf could not be recycled in 2013 or 2014. These materials were sent to 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, 2014



4.1.1 Reduce and Reuse

(G4-EN2, G4-EN23, G4-EN27, G4-EN28, G4-SO1, E06, E012) 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, almost 43% of which was reused from the 2012 WMPO. In 2014, the WMPO used 87,531 square feet of signage, and increased reuse to 65% from the 2013 event. Over 73% of the 2014 signage is stored for potential reuse in 2015. This year, WM also collected vinyl and mesh banners from the event that could not be reused, and worked with [Relan](#) to turn them into reusable tote bags. The bags are available for purchase at www.wmgreengear.com. 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 reused golf balls. The other WM water feature incorporated 750,000 reused golf tees made from 100% recycled content. Both the golf balls and tees will be reused next year.

In 2014 almost 10,000 pounds of unused food was donated to Church on the Street and Waste Not Perishable Food Rescue and Delivery. WM and the Thunderbirds will work on further expanding this vendor food donation program in 2015 by connecting with all food vendors earlier in the process and organizing a convenient group pickup.

4.1.2 Procurement

(G4-15, G4-EC6, E09, G4-EN28) 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

(G4-EC8, G4-PR1, G4-SO2, E08, E09) 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.

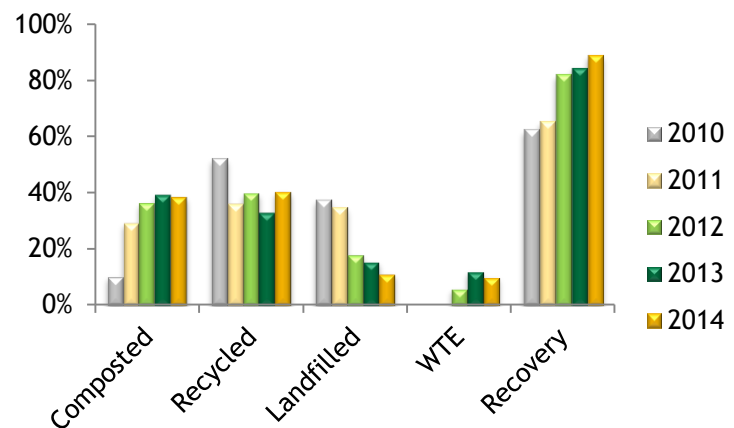
In 2012, food, paper towels, plates and cups, wooden stirrers and biodegradable utensils were turned into compost. A small percentage was sent to a waste-to-energy facility. In 2013, similar materials were composted, but we worked with vendors to ensure that all plates, bowls, food containers, hot drink 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 these differences to minimize confusion among vendors, employees and spectators. WM worked with vendors throughout the event to determine if vendor guidelines had been adhered to and address any issues that arose. For the 2014 WMPO, WM revised these requirements so all food and beverage service packaging are composted. This further streamlined the sorting process and eliminated confusion about product materials.

See [Appendix D](#) for Vendor Guidelines of Acceptable Materials.

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

	2010	2011	2012	2013	2014
Composted	21	86	136	160	154
Recycled	107	106	149	134	161
Waste-to-Energy	-	-	22	49	40
Landfilled	77	102	67	63	45
Food Donation	-	-	-	8	5

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



WM Promotional Items and Giveaways

(G4-EN2, G4-EN27, G4-PR1, G4-PR3, 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 by quantity and cost to paint a clear picture of sustainability. In terms of cost, 100% of the promotional and giveaway items purchased were reusable to encourage reducing waste. Furthermore, 11% of all products were made from 100% organic cotton, 18% were manufactured from 100% recycled content, and another 70% included between 30% and 92% recycled content.

When considering the number of promotional items procured, 100% were reusable. In addition, 27% of all products were made from 100% organic cotton, 38% were manufactured from 100% recycled content and another 35% included between 30% and 92% recycled content.

For more information on the specific items purchased, please see [Appendix E](#).

Vendor Giveaways

(PR4, EO9) In 2013, a Sustainable Giveaways Guidelines document was distributed to all vendors and sponsors prior to the event to assist them in selecting promotional items. For the 2014 WMPO, WM worked with The Thunderbirds to incorporate this document into vendor contractual agreements as part of the Vendor Guidelines of Acceptable Materials. 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 D](#) for Sustainable Giveaways Guidelines.



Signs and Printing

(G4-EN2, G4-PR1, G4-PR3, G4-SO1, G4-SO2, 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 to be created for the upcoming tournament and created for 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 2014, the WMPO used 87,531 square feet of signage. WM tracks the sustainability of this material: 8% of all signs used were recyclable and made with high post-consumer recycled content, 13% was made from recyclable material, and 79% was reusable. In addition, 65% of this signage was reused from the 2013 WMPO and 74% of all 2014 signage is being stored for reuse for the 2015 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, while badges are printed on paper made of 50% total recovered fiber. Every material purchase is Forest Stewardship Council Certified. The paper for the daily tickets, pairing sheets, luncheon invitations and parking maps are also certified by the Sustainable Forestry Initiative and the Program for the Endorsement of Forest Certification. In the printing process, 99% 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

(G4-PR1, G4-PR3, G4-EN2, EO9) Non-product output such as the chemicals used to treat the portable toilet waste and the products used to clean portable toilets are non-toxic, biodegradable chemicals, free of formaldehyde and alcohol. Cleaning products do not use aerosols and are free of butyl and glycol. Toilet paper is made of 100% recycled content. Material Safety Data Sheets and purchase information was made available by WM Four Corners Market Area.

Construction Materials

(G4-EN2, G4-PR1, G4-SO2) Wood, metal, canvas, electrical wiring and water and sewage pipes used to build temporary structures are either rented or reused every year.

4.1.3 Volunteer Engagement

(EO5) 2014 marked the first year of a revised volunteer engagement program in the form of Zero Waste Stations. Three ZWS were set up in high traffic areas like concessions areas and viewing galleries, where fans would drop off their various waste items and volunteers sorted materials into recycling and compost bins.

Roles and Responsibilities

(EO11) In addition to sorting materials from attendees at a ZWS, volunteers also helped educate tournament attendees, increased awareness of the diversion goals, and coordinated with operations staff if service issues arose.

At the 2014 WMPO, WM had 186 individual volunteers for the Zero Waste Stations. Together, they provided 1,323 volunteer hours for the tournament.

Volunteer Management

(G4-SO1) Support in managing the volunteer program before and during the tournament was critical. WM worked with two local organizations, [Keep Phoenix Beautiful](#) and [Keep Scottsdale Beautiful](#) to assist with recruiting, planning and managing the Zero Waste Station volunteers. Managing the ZWS volunteers was considered an excellent opportunity to earn a donation for these organizations while providing the support needed to run the program.

WM 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 employees 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

(G4-LA9) 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 and review was conducted after volunteers checked in for their shift at the Zero Waste Stations. This allowed volunteers to have their questions answered and to update them on specific trends and materials seen on the course.

Incentives

(G4-PR1) For each shift they completed, volunteers received a Walking Pass, good for any one day of the event. Volunteers were also able to use this pass prior to the day of their shift.



4.2 Energy

(G4-EN3, G4-EN6, G4-EN7, E012) 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. Energy data was provided by the Thunderbirds and event vendors.

Energy highlights from 2014 were:

- Reduced the number of generators on site, increased the number of generators plugged in to run on renewable power, and replaced the diesel fuel used in the rest of the generators with biodiesel.
- Reduced the diesel and biodiesel used in buses by 650 gallons due to fleet upgrades, a 16% reduction from 2013.
- 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 and solar compactors continue to be used in key locations on the course.



4.3 Water

(G4-EN9, G4-EN11, G4-EN22, G4-EN26, G4-EN27, G4-S02) 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 close to 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 on their courses.

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. Volunteers and employees are educated on conservation measures. For example, hand-washing stations used hand sanitizer instead of water and portable toilets in general use less water than conventional toilets.

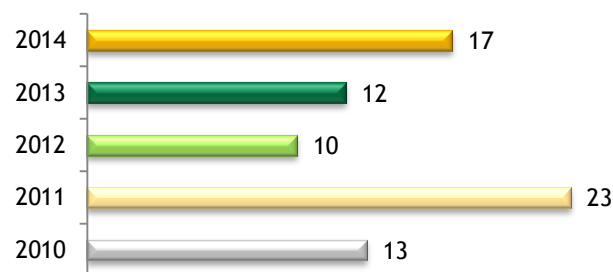
(G4-15, G4-EN1, G4-EN2, G4-EN8, G4-EN10, G4-EN23, G4-EN27, E012) In 2011, a pilot project was initiated to reuse water from cooking and cleaning in the portable toilets, resulting in a savings of approximately 1,476 gallons. In 2013, this graywater initiative resulted in a savings of roughly 4,800 gallons. In 2014, WM collected and reused 4,645 gallons, and we continue to evaluate collection methods to increase the event's water conservation.

This year, WM standardized a best practice for this collection. Graywater is captured from the main kitchen areas at Holes 16, 17 and 18; every night between Thursday and Saturday, two POL collection trucks pumped graywater from these kitchens' holding tanks, which varied from 100 to 800 gallons depending on usage. The two trucks then discharged the graywater into the large banks of POLs closest to those kitchens. The remaining available graywater was dispersed to the units located in the parking lots, police centers and tram stops until the trucks were empty.

For the 2014 event, WM again tracked fresh water usage to estimate that approximately 76,320 gallons of fresh water was used at TPC during the tournament. This represents a 36.8% increase, or 25,686 more gallons of fresh water usage compared to the 2013 WMPO. About 16,342 gallons of water



Chart 4: Ounces of Metered Water Use Per Attendee



was sold as bottled water in 2014, down from 25,313 gallons in 2013. At the same time, there was slight decrease in the water used in POLs from 19,184 gallons in 2013 to 19,060 gallons in 2014. There were 37,000 more attendees over the course of the week in 2014 than 2013, a 7% increase and not enough to explain the surge in water usage.

To demonstrate commitment to water conservation, WM purchased Bonneville Environmental Foundation's (BEF) Water Restoration Certificates (WRC) for the 95,380 gallons of metered fresh water consumed at the 2014 WMPO. Ninety-six credits were purchased, each credit representing 1,000 gallons of water that is restored to a critically dewatered river, stream or wetland during vital times of the year. BEF works with local Water Trusts to ensure that all WRC create a Verified Instream Flow Benefit. All WRC projects are certified by the National Fish and Wildlife Foundation.

WM will continue to look for opportunities to conserve water at the source, reuse as much water as possible, engage the local community in water conservation efforts, and offset water use through BEF.

4.4 Transport

(G4-EN7, G4-EN19, G4-EN27, EO2, EO3) Fuel use and associated greenhouse gas (GHG) emissions from transportation at the WMPO comes from vehicles used for hauling waste, servicing portable toilets, sponsor vehicles used by golfers and their families, golf carts, and shuttle buses. Diesel and gasoline are the two conventional, non-renewable fossil fuels used with relatively high greenhouse gas emissions. Low emissions are possible using flex fuel, natural gas, propane, hybrid, plug-in hybrid, all-electric vehicles, ultra-low sulfur diesel, fuel cell, bicycles 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.

(G4-EN1, G4-EN4, G4-EN17, G4-EN30) In addition to emissions from transport that we have some control over, in 2014 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. Data collected from spectators via surveys conducted with spectators during the tournament week and vendors after the tournament allows WM to estimate the following:

- Approximately 1.4% of fans walked to the tournament.
- Approximately 3.4% of the fans took a local bus or party bus to the tournament.
- Approximately 8.0% of fans took a taxi to the tournament.
- Approximately 15.5% of the fans flew to the tournament.
- Approximately 70.5% of the fans drove, parked, and took a WMPO shuttle to the tournament.
- Spectator air travel generated approximately 35,885 metric tons of carbon dioxide equivalent (MTCO₂e).
- Spectator auto travel generated approximately 12,948 MTCO₂e.
- Vendor air travel generated approximately 69 MTCO₂e.
- Vendor auto travel generated approximately 413 MTCO₂e.

WM tracked the ratio of conventional versus alternative energy transportation. Alternative energy transportation included 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 62.1% of vehicles used for the 2014 WMPO were alternative energy transportation, compared to 63.3% at last year's tournament.

(G4-EN6, G4-EN27, EO12) The WMPO encouraged the use of public transportation through an educational campaign using signage, marketing and advertising prior to the event. 2014 was the first year of a bike valet pilot program, which was limited due to traffic concerns. This initiative will be expanded in 2015, with earlier input from the Parking Chairman and local police. Like previous years, shuttle buses or other low-impact transportation methods were available to move tournament attendees to and from the event. Shuttle buses were again 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.



4.5 Greenhouse Gas Emissions

(G4-2, G4-EN1, G4-EN2, G4-EN3, G4-EN5, G4-EN6, G4-EN7, G4-EN8, G4-EN10, G4-EN15, G4-EN16, G4-EN17, G4-EN18, G4-EN19, G4-EN20, G4-EN21, G4-EN22, G4-EN23, G4-EN27, G4-EN30, G4-SO2 G4-EO3, G4-EO9) Table 2 below shows inputs, outputs and associated greenhouse gas (GHG) emissions from the WMPO between 2010 and 2014. 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.

Table 2: Inputs and Outputs of WMPO, 2010 - 2014

FUEL USE		2010	2011	2012	2013	2014	2010	2011	2012	2013	2014
		(GALLONS)					(MTCO ₂ e) ¹				
Propane	heat, cooking	8,890	14,053	13,195	6,408	7,587	52	82	81	37	42
Diesel	shuttle buses	4,750	6,332	5,207	2,829	2,714	48	64	53	29	28
Biodiesel	shuttle buses	-	-	-	1,213	679	-	-	-	11	6
Diesel	generators/equipment	3,220	4,668	5,577	3,883	0	33	47	57	39	0
Gasoline	sponsor cars	3,000	2,300	2,325	2,279	1,954	27	21	21	13	17
Diesel	sponsor cars	-	-	-	24	35	-	-	-	0.2	0.4
Diesel	waste/portable toilet service	2,270	1,166	1,624	1,657	2,701	23	12	17	17	27
CNG ²	portable toilet service	-	-	-	207	185	-	-	-	0.3	0.2
Biodiesel	generators	190	-	1,099	2,969	2,504	5	-	10	28	24
CNG ²	waste hauling service	-	1,804	482	519	1,097	-	2	0.4	0.1	1.0
Cooking Oil	recycled	600	325	350	350	700	-	-	-	-	-
ELECTRICITY		(KILOWATT HOURS)					(MTCO ₂ e) ¹				
Electricity	conventional energy	125,691	-	-	-	-	76	0	0	0	0
Electricity	renewable energy	-	141,595	117,031	131,513	132,630	-	0	0	0	0
Electricity	solar	-	119	24	56	62	-	0	0	0	0
WASTE END-OF-LIFE MANAGEMENT ³		(TONS)					(MTCO ₂ e) ¹				
Composted	food scraps, food and beverage serving materials, wood	21	86	136	160	154	7	33	76	106	115
Recycled	plastics, metals, fiber	107	106	149	134	161	-178	-90	-274	-175	-192
Waste-to-energy	residuals	-	-	22	49	40	-	-	4	16	8
Landfilled	residuals	77	102	67	63	45	2	3	2	2	1
Donated	unused food products	-	-	-	8	5	-	-	-	-0.3	-2
WATER		(GALLONS)									
Water	fresh, metered	44,200	65,570	40,400	50,510	76,320					
Water	fresh, used in POLs	-	-	18,520	19,184	19,060					
Water	graywater, used in POLs	-	-	3,138	4,800	4,645					
Water	bottled	-	-	19,780	25,313	16,342					
TOTAL GREENHOUSE GAS EMISSIONS							2010	2011	2012	2013	2014
							19	173	47	130	79

1 MTCO₂e is metric tons of carbon dioxide equivalent.

2 CNG volume is provided in gas gallon equivalent.

3 The WARM model uses defaults and averages to calculate GHG emissions from end-of-life management. In 2014, the model was used to recalculate emissions back to 2010.

(G4-EN6, G4-EN15, G4-EN16 G4-EN19, G4-EN27) 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, 2013, and 2014 alone.

Chart 5: MTCO₂e per Emission Source, 2010 - 2014

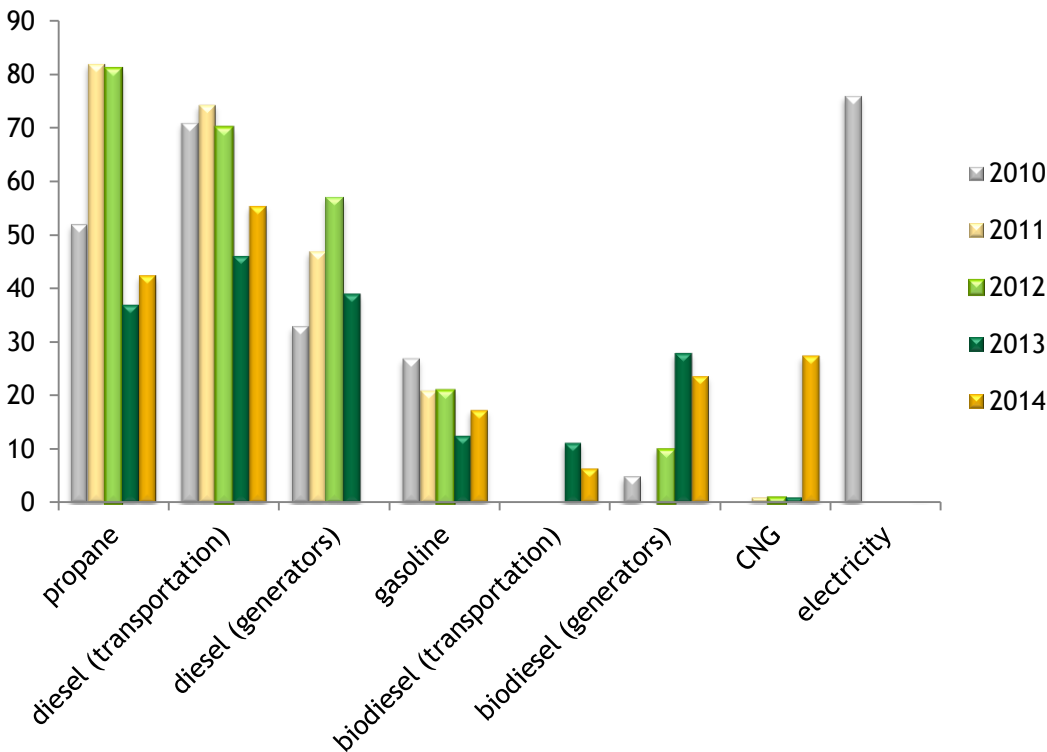
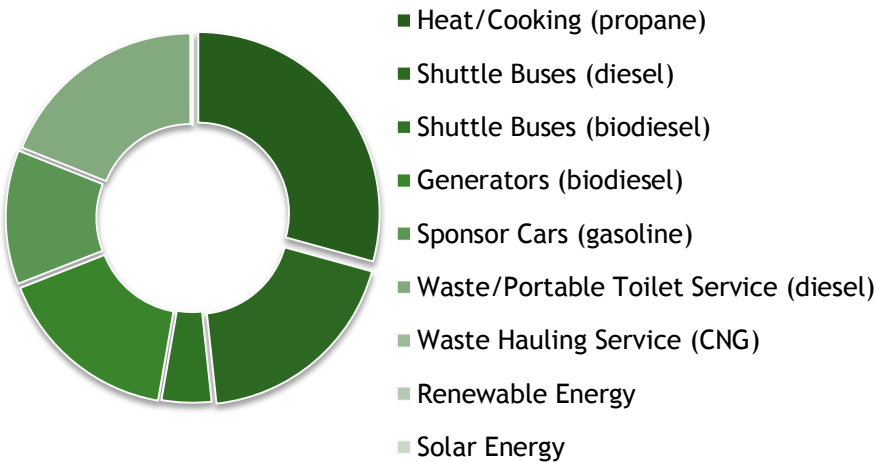


Chart 6: MTCO₂e per Emission Source, 2014



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

(G4-18, G4-19, G4-25, G4-26, G4-37, G4-45, G4-47, G4-44, G4-56, G4-PR1, E05, E012) The success of many of these initiatives was dependent on the participation of the vendors, employees, volunteers and fans attending the 2014 WMPO. WM engages these stakeholders through surveys, partnerships and meetings to help determine what is material to the event.

Local Vendor Material Management

(G4-45, G4-47, G4-56) Each year we try to improve the vendor engagement process so it is more efficient, more effective, and generally easier for everyone involved. This year, WM again worked with local recycling and composting facilities to create an “Acceptable Materials” guidance document for all vendors. It contained a list of products and materials that can be easily recycled or composted locally as well as the local vendor who can supply only products that meet these standards. The Thunderbirds then sent all vendors an e-mail about the upcoming Zero Waste Challenge, updates to the material and product requirements, and included the list of acceptable materials as a contract addendum for vendors to sign. For 2014, the major adjustment was that all food service items—anything that touched food and poured drinks—had to be compostable, including cold cups. Shortly after this update, the Thunderbird Concession Chairman, who also began acting as the Thunderbirds’ new Sustainability Chairmen position in 2014, invited vendors to a meeting to discuss acceptable materials, general operations, and get other questions answered by representatives from WM operations, the recycling facility, and the composting facility.

For 2014, WM engaged vendors earlier, with a specific point of contact year round. The Thunderbirds hosted two vendor meetings, one in late October and another in the middle of January. The first meeting was an opportunity to introduce new operational details and changes in materials allowed on course in 2014. Following the first vendor meeting, WM contacted vendors for phone interviews to review program operations, what materials could be used, expectations for back of house diversion and to outline event sustainability goals. WM worked closely with the Sustainability Chairman to identify solutions to material challenges. This allowed event organizers and vendors to work towards shared goals of maximizing waste reduction and minimizing material usage. Two weeks before the tournament, the Thunderbirds hosted the second vendor meeting to again review operational details, walk through the Zero Waste Challenge with new vendors, and address any outstanding concerns.

In 2014, WM arrived at TPC Scottsdale to meet vendors as they arrived on site to set up their booths and kitchens. This initial check-in allowed for increased management of waste volumes generated during event setup. During the tournament, vendor employees were provided training about the back-of-house waste streams, and each item that the vendor brought on site was reviewed as to whether it was compostable or recyclable and which container it should go in. If vendors offered products that were not complicit with event material standards, WM or the Thunderbirds requested replacement.



Spectator Engagement

(G4-26, G4-27, G4-44) Educational materials were displayed during the WMPO to communicate the event's overall sustainability goals and encourage fans to participate in diversion efforts. Other educational methods included, messaging on the golf course, signage and videos on event shuttles, information posted on the event website and tickets, the WMPO app, and local advertising prior to the event.

WM conducted a spectator survey with 443 event attendees to determine that:

- 70.8% noticed that there are no trash bins on the course during the WMPO
- 28.0% were aware of what the tournament does to conserve water
- 30.9% 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. Please see [Appendix F](#) for survey results.



The Waste Management Executive Sustainability Forum

(G4-26, G4-27, G4-44, G4-45, G4-47, E05) Since 2011, Waste Management has capitalized on the WMPO to attract spectators and golf fans from throughout the business world. These unique groups of stakeholders are the industry's movers and shakers, eager to be a part of WMPO's groundbreaking sporting event. By attending this forum, they are equally curious to discover the value that sustainability can bring to their respective companies. The one-day forum is a carefully orchestrated, high-level discussion about sustainability, attracting business executives from various industries and public sectors. One of WM's specific goals of is to attract a mix of experts, customers and business prospects, all contributing to an open-minded dialogue around sustainability principles, best management practices and bottom-line results.

The 2014 Waste Management Executive Sustainability Forum featured a unique format. Keynote Speakers included William McDonough, a leader in sustainable development and author of *Cradle to Cradle* and *The Upcycle*, and Andrew Winston, a green business strategist and author of *Green to Gold* and *The Big Pivot*, and David Steiner, President and CEO of Waste Management, North America's leading provider of comprehensive environmental services. Additional "Rapid-Fire" presentations focused on key movements in sustainability, including transparency, education, and innovation. Afternoon breakout session included further discussion with Bill McDonough on eliminating waste, effectively managing construction recycling projects, simplifying sustainability for municipalities, and moving beyond sustainability in manufacturing and industrial settings. For the first time, GreenBiz.com continuously streamed all of the main stage presentations, so over 12,300 people were able to experience the WM Executive Sustainability Forum.

Table 3: Sustainability Forum Information

Information on the Sustainability Forum	
Total number of Attendees	214
Change from previous year	+16%
Ratings by Attendees responding to Forum Satisfaction Survey	
Very Satisfied	93%
Somewhat Satisfied	7%
"Waste Management is a sustainability leader"	
Responded "very favorable" before forum	26%
Responded "very favorable" after forum	75%



Below are a few quotes from Sustainability Forum attendees:

"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."

"I would love to come back again. Because of a number of things I saw and heard, we will be making changes within my organization. The changes began to occur within the first week of my arrival back home after the WM Executive Sustainability Forum."

PGA TOUR Inaugural Sustainability Challenge

(G4-EC8, E011 E012, E013) For the 2014 WMPO, WM worked with the PGA TOUR to establish the Sustainability Challenge in an effort to recognize and spread sustainability-driven event planning. The voluntary contest invited all PGA TOUR tournaments to fill out a questionnaire to provide details their respective sustainable event initiatives. The sustainability services team at Waste Management graded 24 participating tournaments.

The Shell Houston Open was named the winner of the inaugural Sustainability Challenge after receiving the highest ranking out of the 24 tournament submissions for its cumulative score in the following categories: Materials Management, Natural Resources Tracking and Conservation, Economic Impact and Overall Sustainability. As the winners of the Sustainability Challenge, Shell Houston Open executives were invited to attend the 2014 Waste Management Phoenix Open and Waste Management's fourth annual Executive Sustainability Forum during tournament week (Jan. 27 - Feb. 2, 2014).

"In addition to honoring us for our sustainability initiatives at the Shell Houston Open, Waste Management was also responsible for driving much of the behind-the-scenes efforts that are helping us build the most sustainable event possible," said Steve Timms, tournament director for the Shell Houston Open and president and CEO of the Houston Golf Association. "We are committed to the belief that sustainability is the right thing to do."

"Waste Management is not only dedicated to greening the game of golf and raising the bar in sustainability and sports, but we also have a social responsibility to educate and engage others," said Dave Aardsma, chief sales and marketing officer, Waste Management. "The Sustainability Challenge has provided us the opportunity to recognize the successes of PGA TOUR tournaments like the Shell Houston Open so that others will be encouraged to follow our lead."

For years the Shell Houston Open, played at the Golf Club of Houston in Humble, Texas, has committed to executing a sustainable tournament and to reduce the amount of materials sent to the landfill. Through the development of an enhanced triple-bottom-line sustainability strategy (incorporating three dimensions of performance: social, environmental and financial) the 2013 tournament exceeded environmental goals and expectations and achieved an 87.3% overall diversion rate.

Third Party Event Certifications

(G4-15, G4-33, G4-EN27, E09) For the 2013 and 2014 tournaments, WM pursued two new, third-party certifications to reinforce the legitimacy of the WMPO's economic, social and environmental efforts. To highlight the diverse WMPO initiatives and impacts, WM worked with the Council for Responsible Sport in 2013 to earn a Gold Certification, the first PGA TOUR tournament to receive this designation. To achieve this two-year certification, WM coordinated new data tracking efforts and initiatives with WM Four Corners Market Area and corporate marketing groups, the Thunderbirds, all tournament vendors, the Fairmont Scottsdale Princess, and other nearby hotels. WM compiled documentation about the WMPO's site selection, purchasing, resource management (energy, water, and waste), transportation, food, accessibility, community legacy and innovations.

WM also worked with Underwriters Laboratories Environment Inc. (ULE) for a third-party verification of the 2013 event's waste diversion, achieving "100% landfill diversion rate with 12% incineration with energy recovery." ULE's stringent diversion verification required an in-person review of the tournament operations to demonstrate how waste is generated and collected throughout the course. Following the tournament, all waste diversion data was submitted including weight tickets from each final waste processing facility, background on all processing facilities, declaration forms from all event waste haulers, as well as general operations and site information. ULE does not simply review where recycling and compost are initially delivered, but where these materials go further down the line.

In 2014, WM worked with ULE to achieve an even higher level of diversion, "Zero Waste to Landfill Operations with 10% incineration with energy recovery." Waste Management hopes to elevate standards for all sustainable events, and these types of third-party certifications offer real legitimacy to sustainability initiatives.



5.2 Best Practices Application

(G4-EN27, E012) 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 effectively 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, WM participated in 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

(G4-SO10, G4-EC8, E06) Social benefits from the 2014 WMPO came from charitable giving, community stakeholder engagement, and involving students and underrepresented groups as much as possible.

Charitable Donations

(G4-SO1, G4-EC1, G4-EC8, G4-SO10, E01) The 2014 WMPO is expected to generate over \$7 million for charity when the final number is announced later this year; this will surpass the \$6.2 million donated from the 2013 WMPO. 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 WMPO.

This total includes the "Green Out for Charity" campaign, which enabled everyone to vote for their favorite charity by "liking" it on Facebook. Saturday at the WMPO is "Green Out Day." For every person who wears green, the Thunderbirds donate "green." A total of \$70,000 was raised for three local environmental groups based on 2,039 unique Facebook votes.



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 2014, WM donated \$25,000 to "Keep America Beautiful" and the Arbor Day foundation. Another \$10,000 was donated to "Keep America Beautiful" and the local "Keep Phoenix Beautiful" for their help with the Zero Waste Stations.

The Thunderbirds donated over \$100,000 to charities chosen by participants in the 2014 Phoenix Suns Charities Shot at Glory. Jim Pittman, General Manager for the Phoenix Mercury, won \$40,000 for the Phoenix Suns Charity. Actor Joel Murray came in second to win \$25,000 for CureDuchenne, and Ed Rapp of Caterpillar came in third to win \$15,000 for Keep America Beautiful. Each of the remaining participants, which included country music star Jake Owen, O.A.R. lead vocalist Mark Roberge and drummer Chris Culos, and former NBA star Julius "Dr. J" Erving, won \$1,000 for their charity.

Many of the funds donated by the Thunderbirds 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 Thunderbirds support free booth space for one non-profit organization daily in the WMPO Expo Booth during the event through Birdies for Charity. In 2014, this included:

- Tuesday 1/28/14: [Delta Dental Foundation of Arizona](#)
- Wednesday 1/29/14: [Future for Kids](#)
- Thursday 1/30/14: [Power Paws Assistance Dogs](#)
- Friday 1/31/14: [Banner Health Foundation](#)
- Saturday 2/1/14: [Liberty Wildlife Rehabilitation Foundation](#)
- Sunday 2/2/14: [Girl Scouts Cactus Pine Council](#)

#GreenestShow Fan Engagement

(G4-S01, G4-EC8, E06) For the 2014 WMPO, the hashtag #greenestshow was developed to generate a deeper level of engagement and expand the reach of the WMPO. WM encouraged the community, attendees, sponsors and followers to share their passion for golf, the WMPO and green practices both on and off the course using the hashtag #greenestshow. There were over 15,500 #greenestshow posts from the 2014 WMPO and over 22 million impressions.

WM held daily photo and trivia contests on its social media properties during each of the tournament's four rounds (Thursday - Sunday). Daily winners were announced on the WMPO Facebook and Twitter pages. Prizes include WM Green Gear vouchers and passes to the WM hospitality suite on the 18th Hole.

For the aforementioned "Green Out for Charity" campaign, WM enabled anyone to vote for their favorite local charity by "liking" it on Facebook. The Thunderbirds divided the \$70,000 raised for "Green Out Day" by three environmental groups. Waste Not Perishable Food Rescue and Delivery received the most votes, followed by the Solid Waste Association of North America (SWANA), and the AZ Recycling Coalition.

This year, the WMPO launched the "Go for the Glory" Contest, a virtual closest-to-the-pin contest using the free to download Aquimo Pin High App. The contest ran from December 11, 2013 through February 9, 2014 and included three Qualifying Rounds. Prizes were awarded to the top 50 closest-to-the-pin entries in December, January and daily during tournament week. The top Finalist with a single shot closest-to-the-pin in the Final Round was named the "Grand Prize Winner," and will receive hospitality tickets for two persons for three days to the WM 16th Hole Sky Box at the 2015 WMPO, and a three-night hotel stay at the Fairmont Scottsdale Resort.



Community Stakeholder Engagement

(G4-24, G4-25, G4-26, G4-27, G4-S01, E06) The WMPO also continues to support multiple avenues to promote positive local community interactions including:

- 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.
- Free event entry is provided to all law enforcement, firefighters/emergency services, active, reserve and retired military personnel (and family members or one accompanying guest).
- The Thunderbirds again set up the Brave Patriots' Outpost, which was free to all military personnel and their guests. Food and drinks are offered free along with a great view of the 18th Hole. WM additionally staffed multiple human resources representatives at the Patriots' Outpost for a few days to discuss WM job opportunities in the surrounding communities.
- Volunteering opportunities (with a complimentary access pass) and donations are provided to local groups who send members as WMPO volunteers.
- The solar array at WM's 18th hole hospitality tent, powered by American Solar.



Youth Involvement

(G4-SO1, 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. In 2014, 252 students between the ages of 10 and 18 participated in the Standard Bearer program at the WMPO.

First Tee Dream Day activities occur Tuesday of tournament week. In 2014, 339 kids were bussed in from area schools, most from the inner city who have never experienced the game of golf on an actual golf course in any form, for a morning of fun activities finishing with a bagged lunch. Ten lucky juniors were selected from The First Tee of Phoenix, JGAA, SWSPGA, LPGA Girls Golf Program and Special Olympics to participate in Practice with the Pros, where they got to practice with PING Tour Professionals. All students were given a behind the scenes tour to see how things work at the tournament. The breakdown of who was involved with these activities at the 2014 WMPO is shown in Table 4.

There were also First Tee activities on the Monday and Wednesday of the WMPO. This included practicing with the Pros for selected juniors, and caddying on the 16th Hole. These students had the opportunity to practice with PING Tour Professionals. Students also received a Behind the Scenes Tour. During the tournament, two students acted as Junior Course Reporters and wrote a blog each evening.

Table 4: Youth Participation in Dream Day Activities

SCHOOL	SCHOOL DISTRICT	NUMBER OF STUDENTS
Eisenhower School for Innovation	Mesa	125
Chandler School District	Chandler	60
Scottsdale Country Day School	Scottsdale	40
De Los Ninos	Kyrene	31
Sonoran Sky	Pendergrast	83
Other Individuals	With First Tee	24
TOTAL ATTENDEES		363

Participation of Differently-Abled Individuals

(G4-SO1, E06) 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 2014, PGA TOUR pros Padraig Harrington, Ricky Barnes and Kiradech Aphibarnrat helped lead a nine-hole charity putting challenge with the Special Olympics Arizona chapter.

Arizona Cardinals' Head Coach Bruce Arians and kicker Jay Feely, Diamondbacks pitcher JJ Putz and outfielder AJ Pollock, former Diamondbacks Randy Johnson and Mark Grace and former Phoenix Suns Steven Hunter and Tom Chambers headlined the CBS Outdoor Special Olympics Open on Tuesday, January 28th. 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. This pre-tournament event was open to all ticket holders and media.



New Security Procedures

The WMPO and the PGA TOUR continuously conduct reviews of its security procedures and makes appropriate adjustments when necessary to provide the safest experience for both players and fans.

In January 2014, the PGA TOUR implemented a host of new measures that required enhanced security procedures be implemented seamlessly and informing the public of them prior to arriving at the main tournament entrance. WM recommended that potential attendees visit the [WMPO website](#) for a list of key changes to the security policy so that they may appropriately plan for the upcoming 2014 WMPO. Some key changes to the security policy included:

- Bag inspection was performed at all Admission Gates while gates are open.
- Opaque bags could not to exceed 6" x 6" x 6" (in their natural state).
- Clear tote bags, plastic, vinyl, or other carry items were not to exceed 12" x 6" x 12".
- All spectators passed through a security checkpoint prior to entering the golf course.
- Everyone attending the tournament was subject to search at all locations at any time.
- Metal detecting wands were used at each entrance gate on everyone including volunteers, spectators, working staff, media, etc.



5.4 Economic Benefits

(G4-EC1, E01) Although there were no economic impact evaluations conducted for the 2014 WMPO, WM was able to project an estimate based on data from a previous study. 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. ASU calculated a total economic impact of the 2012 WMPO at \$222 million. These results demonstrated that the Waste Management Phoenix Open is among the largest contributors of economic impact from a golf event across the nation.

Economic impact projections for the 2013 and 2014 tournaments extrapolated key data from the 2012 WMPO Economic Impact Study onto up-to-date attendee demographics and focused on the financial impact of event attendees. Last year, the economic impact was estimated at almost \$232 million, and for the 2014 event, this was projected to increase to \$268 million.

6.0 Conclusion

In 2014, 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 materials 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 2013 Council for Responsible Sport Credit Certification Index

(G4-EC1, G4-EN1, G4-EN2, G4-EN3, G4-EN5, G4-EN6, G4-EN7, G4-EN8, G4-EN10, G4-EN12, G4-EN16, G4-EN17, G4-EN18, G4-EN26, G4-EN27, G4-EN30, G4-PR1, G4-PR5, G4-SO1, G4-SO2, EO2, EO3, EO6, 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	Documentation in 2013 WMPO Sustainability Report, pages 9-10, 16
Section A: Site Selection		
A5	Choose a site with minimal environmental impact on ecosystems	Documentation in 2013 WMPO Sustainability Report, pages 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 Next 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	Documentation in 2013 WMPO Sustainability Report, pages 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 (www.scottsdaleprincess.com). This location has been deemed a Certified Green Hotel by the Arizona Lodging and Tourism Association. Source: www.stayinaz.com/certified-green-hotels.html .
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.
A13	One energy conservation practice (in accommodations)	Submitted to CRS - Confidential.



A14	Non-toxic cleaning products only	Submitted to CRS - Confidential.
A15	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.
A16	List green hotels at all price points	A list link was posted to thinkgreen.com prior to and during the WMPO.

Section B: Purchasing

B3	Sustainable large format printing	Documentation in 2013 WMPO Sustainability Report, page 12; additional information submitted to CRS.
B6	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.
B7	Event T-shirts distributed only to participants who opt-in to receive them	Participants did not receive event t-shirts.
B8	Maximize the sustainable attributes of official event t-shirts	Appendix F Procurement.
B9	Maximize sustainable attributes of official event giveaways	Documentation in 2013 WMPO Sustainability Report, page 12
B11	Event has a sustainable procurement policy	Documentation in 2013 WMPO Sustainability Report, pages 11-13; additional information submitted to CRS.

Section C: Resource Management

C1	Measure the water footprint of the event	Documentation in 2013 WMPO Sustainability Report, page 13
C2	Measure the total carbon footprint of the event	Documentation in 2013 WMPO Sustainability Report, pages 15-17
C3	Calculate the total carbon footprint from participant travel	Documentation in 2013 WMPO Sustainability Report, page 15
C4	Calculate the total carbon footprint from spectator travel	Documentation in 2013 WMPO Sustainability Report, page 15
C5	Divert at least 60% of waste	Documentation in 2013 WMPO Sustainability Report, pages 9-10, 16; additional information submitted to CRS.
C6	Divert at least 75% of waste	Documentation in 2013 WMPO Sustainability Report, pages 9-10, 16; additional information submitted to CRS.
C7	Divert at least 90% of waste	Documentation in 2013 WMPO Sustainability Report, pages 9-10, 16; additional information submitted to CRS.
C8	Reuse or donate one non-food item	Documentation in 2013 WMPO Sustainability Report, pages 9-10, 16; additional information submitted to CRS.
C9	Divert at least 50% on one hard-to-manage item from landfill	Documentation in 2013 WMPO Sustainability Report, page 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	Documentation in 2013 WMPO Sustainability Report, page 14 (graywater 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	A list link was posted to thinkgreen.com prior to and during the WMPO http://thinkgreen.com/wmphoenixopen2013/HotelsandRestaurants.pdf ; 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	A list link was posted to thinkgreen.com prior to and during the WMPO.
E4	Run Food Donation Program	Documentation in 2013 WMPO Sustainability Report, pages 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	Documentation in 2013 WMPO Sustainability Report, pages 18-22; additional information submitted to CRS - Confidential.
F2	Develop a plan for outreach to under-represented groups	Documentation in 2013 WMPO Sustainability Report, pages 18-22; additional information submitted to CRS - Confidential.
F3	Increase participation of under-represented groups	Documentation in 2013 WMPO Sustainability Report, pages 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	Documentation in 2013 WMPO Sustainability Report, pages 21-22
F8	Provide opportunities for younger children to be participants	Documentation in 2013 WMPO Sustainability Report, pages 21-22
F10	Participation of differently-abled populations	Documentation in 2013 WMPO Sustainability Report, page 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	Documentation in 2013 WMPO Sustainability Report, page 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	Documentation in 2013 WMPO Sustainability Report, page 51
G6	Donate at least \$5 per participant to local non-profit organizations	Documentation in 2013 WMPO Sustainability Report, page 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	Documentation in 2013 WMPO Sustainability Report, pages 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

(G4-2, G4-14, G4-EC2, G4-EN11, G4-EN12, G4-EN13, G4-EN26, G4-SO2) 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.

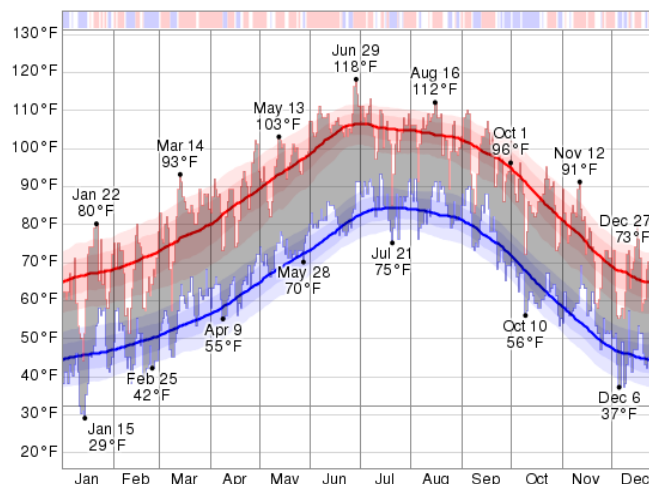
The 2012-2014 North American Droughts, an expansion of the 2010-2012 Southern United States droughts, originated in the midst of a record breaking heat wave. Low snowfall amounts in winter, coupled with the intense summer heat from La Niña, caused drought-like conditions to migrate northward from the southern United States, wreaking havoc on crops and water supply.¹ The drought has inflicted, and is expected to continue to inflict, catastrophic economic ramifications for the affected states. It has exceeded, in most measures, the 1988-1989 North American droughts, the most recent comparable drought, and is on track to exceed that drought as the costliest natural disaster in US history.²

The drought includes most of the US, parts of Mexico, and central and Eastern Canada. At its peak on July 17, 2012 it covered approximately 81 percent of the contiguous United States with at least abnormally dry conditions. Out of that 81%, 64% was designated as at least moderate drought conditions.³ Its area was comparable to the droughts in the 1930s and 1950s but it has not yet been in place for as long.⁴ In March 2013, heavy winter rains broke a three-year pattern of drought in much of the Southeastern United States, while drought conditions still plague the Great Plains and other parts of the US, according to the U.S. Drought Monitor.⁵

As the effects of climate change in the Phoenix area intensify in 2013⁶, 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. While much of the water used on golf courses is reclaimed, 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



The daily low (blue) and high (red) temperature during 2013 with the area between them shaded gray and superimposed over the corresponding averages (thick lines), and with percentile bands (inner band from 25th to 75th percentile, outer band from 10th to 90th percentile). The bar at the top of the graph is red where both the daily high and low are above average, blue where they are both below average and white otherwise.



¹ Freedman, Andrew (21 July 2012). "Causes Of Midwest Drought: La Nina And Global Warming Thought To Contribute To Dry Weather". Huffington Post. Retrieved 14 January 2013.

² Kimery, Anthony (January 6, 2012). "FEMA - Dealing with the Drought". Homeland Security Today. Retrieved 2012-08-24.

³ "United States Drought Monitor > Home". Droughtmonitor.unl.edu. Retrieved 2014-03-03

⁴ Parry, Wynne (19 July 2012). "How Bad Is the US Drought?". LiveScience (Yahoo! News). Retrieved 19 July 2012.

⁵ Rains Bring Relief to Region; Winter Weather Reduces Drought in Southeast, Southwest; Other Areas Still Threatened March 12, 2013 WSJ

⁶ <http://weatherspark.com/history/31259/2013/Phoenix-Arizona-United-States>

areas in Arizona and other states (such as California, Colorado and New Mexico) and a total of thirty million people⁷. 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. These weather-related impacts are anticipated to present challenges to outdoor related activities such as golf in the near term, particularly due to the weather-sensitive nature of the sport.

Climate Change Mitigation Strategies

(G4-EN27) To mitigate the effects of climate change, many golf courses will need:

1. 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.
2. To maximize use of graywater and recycled water for all course activities.
3. To deploy weather sensors to track and minimize use of irrigation system during periods of precipitation.
4. To modify drainage systems that may be necessary to account for larger volumes of precipitation and be capable of storing captured rainwater primarily for landscaping use.
5. To look into using water fixtures with high water efficiency capabilities such as low-flow urinals and water closets.
6. To explore use of alternative energies such as solar photovoltaic panels and wind turbines to power support and back of the house operations for the entire golf facility and electric vehicle fleets.



Courses in the area that maintain the status quo may find themselves unprepared if long term weather events will persist like the 2012-2014 droughts.

⁷ “Life Blood of the American Southwest.” Save the Colorado. <<http://www.savethecolorado.org/river.php>>

The National Climate Assessment 2014 - Southwest

(G4-EC2) The **National Climate Assessment (NCA)**⁸ is a United States government interagency ongoing effort on [climate change](#) science conducted under the auspices of the [Global Change Research Act of 1990](#). NCA is a "major product" of the [U.S. Global Change Research Program](#) (USGCRP) which coordinates a team of hundreds of experts guided by a sixty-member [Federal Advisory Committee](#). NCA research is integrated and summarized in the mandatory ongoing National Climate Assessment Reports. The reports are "extensively reviewed by the public and experts, including federal agencies and a panel of the [National Academy of Sciences](#)."

Key Messages⁹

1. Snowpack and streamflow amounts are projected to decline in parts of the Southwest, decreasing surface water supply reliability for cities, agriculture, and ecosystems.
2. The Southwest produces more than half of the nation's high-value specialty crops, which are irrigation-dependent and particularly vulnerable to extremes of moisture, cold, and heat. Reduced yields from increasing temperatures and increasing competition for scarce water supplies will displace jobs in some rural communities.
3. Increased warming, drought, and insect outbreaks, all caused by or linked to climate change, have increased wildfires and impacts to people and ecosystems in the Southwest. Fire models project more wildfire and increased risks to communities across extensive areas.
4. Flooding and erosion in coastal areas are already occurring even at existing sea levels and damaging some California coastal areas during storms and extreme high tides. Sea level rise is projected to increase as Earth continues to warm, resulting in major damage as wind-driven waves ride upon higher seas and reach farther inland.
5. Projected regional temperature increases, combined with the way cities amplify heat, will pose increased threats and costs to public health in southwestern cities, which are home to more than 90% of the region's population. Disruptions to urban electricity and water supplies will exacerbate these health problems.

The Southwest is the hottest and driest region in the United States, where the availability of water has defined its landscapes, history of human settlement, and modern economy. Climate changes pose challenges for an already parched region that is expected to get hotter and, in its southern half, significantly drier. Increased heat and changes to rain and snowpack will send ripple effects throughout the region's critical agriculture sector, affecting the lives and economies of 56 million people - a population that is expected to increase 68% by 2050, to 94 million.¹ Severe and sustained drought will stress water sources, already over-utilized in many areas, forcing increasing competition among farmers, energy producers, urban dwellers, and plant and animal life for the region's most precious resource.

The region's populous coastal cities face rising sea levels, extreme high tides, and storm surges, which pose particular risks to highways, bridges, power plants, and sewage treatment plants. Climate-related challenges also increase risks to critical port cities, which handle half of the nation's incoming shipping containers. Agriculture, a mainstay of the regional and national economies, faces uncertainty and change. The Southwest produces more than half of the nation's high-value specialty crops, including certain vegetables, fruits, and nuts. The severity of future impacts will depend upon the complex interaction of pests, water supply, reduced chilling periods, and more rapid changes in the seasonal timing of crop development due to projected warming and extreme events.

Climate changes will increase stress on the region's rich diversity of plant and animal species. Widespread tree death and fires, which already have caused billions of dollars in economic losses, are projected to increase, forcing wholesale changes to forest types, landscapes, and the communities that depend on them. Tourism and recreation, generated by the Southwest's winding canyons, snow-capped peaks, and Pacific Ocean beaches, provide a significant economic force that also faces climate change challenges. The recreational economy will be increasingly affected by reduced streamflow and a shorter snow season, influencing everything from the ski industry to lake and river recreation.

⁸ http://en.wikipedia.org/wiki/National_Climate_Assessment

⁹ U.S. National Climate Assessment, U.S. Global Change Research Program, May 2014, Page 463



Appendix C More About TPC Scottsdale

Written by Jeff Plotts, TPC Scottsdale Golf Course Superintendent

(G4-14, G4-56, G4-EN8, G4-EN11, G4-EN12, G4-EN13, G4-EN14, G4-EN26, G4-EN27, G4-SO2, 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 effectively.

The use of native landscape plantings around tees enables us to reduce turfgrass and water consumption. On course water treatments with N-Control and pH airway 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) 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



Waste Management Phoenix Open Guidelines for Acceptable Materials & Zero Waste Challenge Participation Agreement

(G4-25, G4-26, G4-27, G4-EC6, G4-EN32, G4-EN33, G4-SO1, G4-PR1, E012)

Zero Waste Challenge

What does “Zero Waste” mean at the WMPO?

In 2012, we launched the Zero Waste Challenge, a campaign to reuse materials and reduce waste so that eventually zero waste from the WMPO is sent to the landfill. Together we surpassed our goals, recycling or composting 100% 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.

[Learn more!](#)

Now we need to focus on maintaining that high level of commitment. There will continue to be no trash receptacles on the course. Instead, WM offers two alternatives to waste disposal - recycling bins and compost bins - which will collect and keep separate recoverable recyclable material and recoverable compostable material. As part of the ongoing Zero Waste Challenge campaign, we will continue to ensure that everyone is using **reusable, recyclable and compostable materials**. Our goal is to make this easy for you because **you are the key** to the success of the Zero Waste Challenge.

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.

After reading through this packet, please sign and return the agreement form (last page) to Sustainability Chairman by **November 30, 2013**.

We are looking forward to another successful WMPO!

The Thunderbirds & Waste Management

Material Streams Collected at the WMPO

As mentioned above, only recycling bins and compost bins will be available to you. Below is a full list of materials accepted in each of these streams.

RECYCLE	COMPOST
<p>Paper: flyers, brochures, programs, tickets, office paper, newspaper, magazines, paperboard,</p> <p>Cardboard</p> <p>Glass: green, brown, clear</p> <p>Plastic: #1 polyethylene (PET) plastic , #2 high density polyethylene (HDPE), #5 polypropylene (PP) cups/containers, water/juice/soda bottles, plastic bags, plastic film (clean)</p> <p>Metal: Aluminum/tin/steel cans</p> <p>Wrappers</p>	<p>Food of any kind: fruit, vegetables, meat, fish, bones, baked goods, coffee grounds, tea bags</p> <p>Liquids</p> <p>Utensils</p> <p>Hot and cold cups/lids</p> <p>Napkins, tissue paper, wax paper</p> <p>Plates, bowls, boats, clam shells</p> <p>Condiment cups</p> <p>Wooden toothpicks, stir sticks, chopsticks</p>

Guidelines for Acceptable Materials

The following guidelines serve as the governing policy for all materials that can be brought on site for use and distribution during the WMPO. Please note that any alternative materials or substitutions purchased other than those listed **will not be allowed**.

Food and Beverage Service Supplies

Any material used to serve food to patrons must be compostable.

Your existing suppliers may be able to provide you with appropriate compostable supplies. Please note that not all items that claim to be “compostable” or “biodegradable” can be processed at organics composting facilities. Before placing orders for compostable supplies, please cross reference the brands and items with the Biodegradable Products Institute (BPI) Certified Compostable Products Catalog: <http://products.bpiworld.org/>

To make it easy for you to comply with this requirement, a catalog of products made with approved materials has been created by Western Paper. Please contact the Sustainability Chairman for a copy of the catalog.

The following table provides requirements for food and beverage service supplies used at the WMPO.

ITEM	REQUIRED MATERIAL
Cold beverage cups (wine, beer, spirits)	BPI certified plant-based plastic
Utensils	Sugar cane fiber, cornstarch, plant based (NO plastic utensils)
Hot beverage cups	Sugar cane fiber (bagasse), cornstarch, paper (preferably recycled fiber), PLA lining only (NO polystyrene)
Hot beverage lids	Paper (preferably recycled fiber) or plant based
Tissue/wax paper wraps	Paper, wax paper (preferably recycled fiber) (NO foil wraps)
Napkins	Paper (preferably recycled fiber)
Plates/Boats	Sugar cane fiber (bagasse), cornstarch, paper (preferably recycled fiber), PLA lining only
Bowls (hot/cold)	Sugar cane fiber (bagasse), cornstarch, paper (preferably recycled fiber), PLA lining only
Clamshells	Sugar cane fiber (bagasse), cornstarch, paper (preferably recycled fiber), PLA lining only
Single-serving condiment cups	Sugar cane fiber (bagasse), cornstarch, paper (preferably recycled fiber), PLA lining only (NO individual foil or plastic condiment packets)

Food Preparation Supplies

Materials for food preparation and back-of-house supplies can be a challenge to our Zero Waste goals. We understand that many of the ingredients and supplies you use are made of or come packaged in non-recyclable and non-compostable materials. Where possible, please select ingredients and supplies that are made of and come packaged in **reusable**, **recyclable** or **compostable** materials (*see Material Streams Collected at the WMPO for detail*). Otherwise, please follow the guidelines for back-of-house disposal below.

ITEM	REQUIRED DISPOSAL METHOD
Gloves	Used plastic or latex gloves must be collected in a separate, specially marked bin.
Packaging	Clean, dry food packaging can be placed in recycling. Dirty, wet or food soiled plastic packaging must be collected in a separate, specially marked bin.
Sterno	Sterno must be at least 90% empty before cans are recycled. Cans with over 90% flammable material remaining are the responsibility of the vendor.

Giveaway Items

Whether you are a food vendor, an expo booth vendor or a sponsor, the purpose of your giveaway item is to promote your business and make a positive impression on WMPO participants. Giveaway items must be of value to the participants, resulting in them going home with the recipient and not disposed of on course.

All giveaway items and their packaging must be **reusable**, **recyclable** or **compostable**. *See Material Streams Collected at the WMPO for details.*

Any giveaway items that will be disposed of at the end of the event must be **recyclable** or **compostable** or leave the WMPO with you.

Sustainable Materials for Giveaway Items

As part of our continued commitment to make the WMPO “The Greenest Show on Grass,” we invite you to provide giveaways that have one or more of the following sustainable attributes. For more information on sustainable manufacturing, see www.global-standard.org, www.fairtradecertified.org, or www.bluesign.com.

ITEM	SUGGESTED MATERIALS
Sustainable Fiber	<ul style="list-style-type: none"> Recycled polyester (rPET) Certified organic cotton Fair Trade cotton Better Cotton Initiative cotton Upcycled materials Hemp Tencel Soy Coconut
Sustainable Materials (for non-wearables)	<ul style="list-style-type: none"> 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 Substrates	<p>Substrates (e.g., note pads, playing cards, signage material) that are environmentally responsible, socially beneficial and economically viable. Examples include substrates made from recycled material (at least 30% post consumer), FSC certified paper, and 100% recyclable materials.</p>

Printed Materials

The following guidelines must be adhered to when ordering any printed materials related to the WMPO:

ITEM	REQUIRED DISPOSAL METHOD
Inks	Plant or water based inks low VOC heavy metal free
Paper	Forest Stewardship Council (FSC) certified OR 100% recycled-content paper with at least 30% post-consumer reclaimed content (includes recycled alternative paper sources, such as recycled cotton or other post-consumer waste)

Use the following best practices whenever possible:

Use printing equipment with an Energy Star Rating to reduce energy costs.

Set printer default to double-sided to reduce paper consumption and lower costs.

Provide recycled paper to decrease our burden on natural resources. 100% recycled paper is recommended.

Refill or recycle toner cartridges.

Reuse or recycle equipment after event.

Signs

All signs made for the WMPO must be created for reuse at future events 100% recyclable, including aluminum, bioboard, paper, paperboard, cardboard and polypropylene.

Signs made from foamcore, polystyrene, or vinyl **CANNOT** be disposed of at the WMPO.

Décor

All decorations must be **reusable**, **recyclable** or **compostable**. See *Material Streams Collected at the WMPO for details*. Decorations may include but are not limited to:

- Table cloths
- Floral arrangements
- Balloons
- Displays

Items you wish to dispose of at the end of the event must be recyclable or compostable; otherwise they must leave the WMPO with you.

Prohibited Items

The following items are not permitted for use at the WMPO.

PROHIBITED ITEMS
Styrofoam® or polystyrene
Individual condiment packets (ketchup, mustard, relish, mayonnaise, soy sauce, hot sauce, etc.)
Individually wrapped plastic utensil kits
Non-recyclable packaging NO polystyrene (Styrofoam®), multiple combined material types
Non-compostable food ware NO plastic cups, plastic plates, plastic utensils, plastic hot cup lids, polystyrene (Styrofoam)
Non-recyclable signs unless they will be reused by vendor NO foamcore, polystyrene, vinyl

Zero Waste Challenge Participation Agreement

As a participant in the Waste Management Phoenix Open, I have read the Acceptable Materials Guidelines and 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 arrange training for my staff for sorting waste before, during and after the event.

Business Name

Employee (print name) _____ Title _____

Signature

Date

Please sign and return this form to the Thunderbirds Sustainability Chairman by **November 30, 2013**

KJ Wagner
2013 Thunderbird Concessions Chairman & Sustainability Chairman
Email: kj.wagner@willis.com



Appendix E Procurement

(G4-EN2, G4-EN28, G4-PR1, G4-SO2, G4-SO10, G4-PR3, E09) 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 2014 WMPO are listed in the table below.

ITEM NAME	ECO DESCRIPTION	QUANTITY (#)	QUANTITY (%)	PRICE (%)
¾ in. x 32 in. Recycled PET Lanyard	100% Recycled Content; 100% Recyclable; Reusable	300	27.7%	3.5%
Certified Organic Cotton Lanyard - .75 in. wide	100% Certified Organic Cotton; Reusable	200	18.5%	2.6%
SPF 30 Sunscreen Tottle Attached to SPF 30 Lip Balm	30% post-industrial recycled polypropylene; 100% Recyclable; Reusable	100	9.2%	1.4%
Men's Eco Soft-Shell Dura Nimbus Jacket	92% Post-Consumer Recycled Polyester; Reusable	76	7.0%	30.9%
Eco Visor with Velcro Adjustment	100% Recycled Polyester; Reusable	48	4.4%	4.3%
Men's Recycled Polyester Performance Pique	54% Recycled Polyester; Reusable	48	4.4%	8.7%
The Skins Game Recycled Vertical Drop Needle Polo	100% Recycled Polyester; Reusable	45	4.2%	8.0%
Men's Recycled Polyester Performance Birdseye Polo	50% Recycled Polyester; Reusable	45	4.2%	7.2%
Adams Natural Organic Twill Cap	100% Certified Organic Cotton; Reusable	44	4.1%	2.5%
Tempo Men's Recycled Polyester Performance Polo	50% Recycled Polyester; Reusable	38	3.5%	6.0%
Men's Organic Cotton Pique Polo	100% Certified Organic Cotton; Reusable	33	3.0%	4.1%
Ladies' Eco Soft-Shell Dura Nimbus Jacket	92% Post-Consumer Recycled Polyester; Reusable	21	1.9%	7.9%
Ladies' Recycled Polyester Performance Pique	54% Recycled Polyester; Reusable	17	1.6%	3.0%
The Skins Game Ladies Recycled Vertical Drop Needle Polo	100% Recycled Polyester; Reusable	16	1.5%	2.6%
Ladies Recycled Polyester Performance Birdseye Polo	50% Recycled Polyester; Reusable	16	1.5%	2.4%
Tempo Ladies Recycled Polyester Performance Polo	50% Recycled Polyester; Reusable	16	1.5%	2.4%
Ladies' Organic Cotton Pique Polo	100% Certified Organic Cotton; Reusable	14	1.3%	1.6%
Port Authority Poly-Bamboo Charcoal Birdseye Jacquard Polo	Reusable	2	0.2%	0.3%
The Champ Unisex Eco Fleece Crewneck Sweatshirt - Phoenix Open	Some Recycled Polyester; Some Certified Organic Cotton; Reusable	1	0.1%	0.2%
Wooden Garbage Truck	Reusable	1	0.1%	0.1%
Custom Coil Duffel Bag - 19 in. (1PC)	Reusable	1	0.1%	0.1%
Mini Toter (1PC)	Reusable; 100% Recyclable	1	0.1%	0.0%
Gripper Water Bottle - 30 oz.	Reusable	1	0.1%	0.0%
Total		1,084		

Appendix F Survey Results

(G4-2, G4-25, G4-26, G4-27, G4-EN28, G4-PR5, EO6, EO11, EO12) Several surveys were used to collect stakeholder feedback and gauge the satisfaction of fans and participants during and following the tournament. In 2014, surveys were sent to local leaders and influential business people, vendors, and fans on course. Descriptions and summaries of results are provided below.

After the 2014 WMPO, WM sent a survey to “civic-minded opinion leaders,” “influential business people,” and “customers and prospects” in the Phoenix area to determine the impact of our sustainability initiatives and how the WMPO effects their community. Below are sustainability-related highlights from the survey.

LOCAL LEADER AND BUSINESS PERSON SURVEY RESPONSE

When asked to select the initiatives that need to be improved within the Phoenix Open most respondents focus on continuing to educate patrons about the “Zero Waste Challenge,” using sustainable food service items, increasing renewable energy and alternative fuel throughout the event, and expanding graywater capture along with other water conservation efforts.

Across all surveyed audiences, very few respondents mentioned that they have concerns or suggestions about how the WMPO influences surrounding communities.

The civic-minded opinion leaders displayed a more positive outlook toward how the WMPO impacts their community on a 10-point scale; 67% reported an 8-10 rating. The other groups indicated lower ratings, roughly 50% in the 8-10 range. Despite this distinction, an overall positive impact (6-10 rating) was high across all audiences. More importantly, there was little evidence of active critical perceptions, the 1-3 ratings average was 4% across all groups.

WM conducted interviews around the course, asking individuals 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. More information was provided to all people surveyed who wanted to learn more about these initiatives.

ON-COURSE INITIATIVES RECOGNIZED	%
No trash cans on course	70.8%
Water reuse and conservation	28.0%
Tournament powered by renewable energy	30.9%

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

VENDOR SURVEY RESPONSES

73.3% found that their vendor area had the appropriate amount of waste service during the event; 6.7% were not sure.

80.0% found that they had all of the containers, signage and waste bags they needed.

100% reported that their waste containers were serviced properly every night; this was not applicable to all vendors.

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:

- 60.0% said “Very clear”
- 33.3% said “Somewhat clear”
- 6.7% reported that they did not receive the guidelines

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



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- 26.7% said their costs remained the same
 - 67.7% said their costs increased
 - 6.8% were not sure
 - One vendor added, “While our supply costs increased, our goal and sales all increased as well.”
-

47% reported that they have been asked to adhere to a “recycling and compostable only” guideline at other events.

Regarding their opinion of Waste Management, on a scale of 1 (Very poor) to 10 (Excellent) vendors reported an average response of 8.5, with 26.7% reporting a perfect score.

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:

- 13.3% said Much more favorable
 - 26.7% said Somewhat more favorable
 - 60.0% said No more or less favorable
-

The following are some of the verbatim responses vendors provided when asked, “This year, you had a WM consultant assigned to help you through all WMPO activities. Please provide any perspectives about how this was helpful, and any areas where WM could improve on assisting vendors.”

- “Recycle our grease, compost and use washable materials when ever possible.”
 - “We keep large recycle boxes in every area that there is a printer. This makes it easy to recycle any unwanted items that may have been printed on accident. We also recycle any junk mail we receive rather than just tossing it in the trash.”
 - “We recycle our cardboard and plastic.”
 - “Work on recycling programs with distributors.”
 - “We try to use as many compostable products as possible as well as buy from local farms and producers.”
 - “Paper, cardboard, other recycling, weekly food donations, community support.”
 - “We recycle ALL paper, plastics, and cardboard.”
-

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?”

- “Being environmental.”
 - “Knowing that it is so easy. All you have to do is take an extra 5 seconds to separate the waste from the recyclables and that's one step in the right direction for a green initiative.”
 - “Our generations that follow us.”
 - “Global Warming.”
 - “It's the right thing to do within reason.”
 - “Helping my kids and grandkids not be impacted by our lack of doing.”
 - “Awareness to making a difference.”
 - “Two vendors left this question blank.”
-

Appendix G Management

(G4-9, G4-12, G4-24, G4-25, G4-26, G4-34, G4-42, G4-45, G4-47, G4-56, G4-LA1) Management of the sustainability aspects of the WMPO is undertaken by Waste Management Sustainability Services, which in 2014 included five consultants working part-time year-round and full-time during the tournament. 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. Stakeholder groups and roles for the 2014 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 \$93 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), 15 Featured Sponsors, and 1,446 other sponsors.
Media	Broadcast, news, press.
Players	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	Over 3000 volunteers annually: concessions, Zero Waste Station volunteers, Marshalls, scoring, and security.
Fans	For the week, total attendance in 2014 was 563,008.
Beneficiaries	With more than \$93 million raised for Arizona charities, countless individuals and groups have benefited from the monies raised through the Phoenix Open.

Training

(G4-41, G4-LA5, G4-LA9) 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. Zero Waste Station volunteers and vendors are trained or instructed in the practical requirements of WM's sustainability management system.

Contacts

(G4-12, G4-24) The table below lists contact information for those responsible for specific data and information for the 2014 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	Laura Eggen	602-792-3131	leggen@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	Dean Schwindt	623-879-7606	dschwindt@wm.com
Waste Transport CNG Usage (gal/mi)	WM	Dean Schwindt	623-879-7606	dschwindt@wm.com
Volunteer Training Information	WM	Jessica Lagreid	602-725-7248	jlagreid@wm.com
Portable Toilet Transport Diesel Usage (gal/mi)	WM	Travis Burke	602-323-3733	tburke@wm.com
Portable Toilet Water Use (gal)	WM	Travis Burke	602-323-3733	tburke@wm.com
Portable Toilet Graywater Reuse (gal)	WM	Travis Burke	602-323-3733	tburke@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, Sustainability Chairman	602-847-6159	Wagner_kj@willis.com
Sustainability Reporting; Third Party Certifications	WM	Michele Grossman	510-847-6159	mgrossm1@wm.com
	WM	Lee Spivak	323-388-7673	lspivak@wm.com

Event Planning and Evaluation

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.

For the last two years, WM asked employees from across the company to come to Phoenix to help manage the operations and labor at the WMPO. These individuals have typically demonstrated a strong work ethic and commitment to WM's core values, so participating in WMPO operations serves as a reward.

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.

After the WMPO tournament, WM collects data from the Thunderbirds, vendors and WM Four Corners Market Area to incorporate into the annual WMPO Sustainability Report. Feedback from stakeholders is reviewed and new emerging issues are identified. Feedback from the report is solicited from WM top management and the Thunderbirds. All of these perspectives enable WM to review operations critically and propose new approaches to correct any issues.

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

(G4-2) 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, collection of hauling tickets to document tons hauled and to where. WM identifies lessons learned from each event and feeds this learning into the planning and delivery of future events/event-related activity and makes the information available to others. A WMPO Sustainability Report is generated for each event and made publicly available on Waste Management's website. 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

(G4-15, G4-44) 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

(G4-2, G4-25, G4-26, G4-43) 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

Appendix H Global Reporting Initiative G4 Index

(G4-2, G4-18, G4-19, G4-25, G4-26, G4-43) This report follows the Global Reporting Initiative's (GRI) G4 Comprehensive Guidelines and Event Operations Sector Supplement (EOSS). The report was prepared to meet the GRI's comprehensive guidance and all possible material aspects were chosen to be included in the scope of the report. The table below shows how and where the GRI disclosures and indicators are addressed.

General Standard Disclosures	Description	Omissions	Page / Direct Response
Strategy and Analysis			
G4-1	Statement from the WM and 2014 Big Chief	N/A	4, 5
G4-2	Description of key impacts, risks, and opportunities	N/A	4-5, 9, 16-17, 31, 46, 50
Organizational Profile			
G4-3	Name of the organization	N/A	3, 7
G4-4	Primary brands, products, and/or services	N/A	7, Calendar of Events
G4-5	Location of organization's headquarters	N/A	3, 7
G4-6	Number of countries where the organization operates	N/A	7
G4-7	Nature of ownership and legal form	N/A	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.
G4-8	Markets served	N/A	7
G4-9	Scale of the reporting organization	N/A	7, 48
G4-10	Total workforce	N/A	At the 2014 WMPO there were 55 Thunderbird Chairmen, 105 WM employees, 486 temporary workers, up to 3,000 volunteers, and 28 vendors.
G4-11	Total workforce covered by collective bargaining agreements	N/A	SEC Filings , WM is also working toward better understanding its third party vendor workforce next year.
G4-12	Organizational supply chain	N/A	48 - 49
G4-13	Significant changes during the reporting period	N/A	There were no significant changes.
G4-14	Precautionary Approach / Principle	N/A	6, 8, 9, 31, 34
G4-15	External charters, principles or initiatives endorsed	N/A	6, 9-11, 14-15, 20, 50
G4-16	Memberships in associations and/or national/international advocacy organizations	N/A	WM does not currently report or publicly state this information.
Identified Materials and Boundaries			
G4-17	Operational structure of the organization	N/A	7, WM Financial Information
G4-18	Process for defining report content	N/A	6, 51-58
G4-19	List of material aspects	N/A	6, 51-58
G4-20	Boundary of the report (Within Organization)	N/A	6
G4-21	Boundary of the report (Outside Organization)	N/A	6
G4-22	Explanation of the effect of any re-statements	N/A	Re-statement of data is used to compare to baseline year.
G4-23	Significant changes from previous reporting periods	N/A	No significant changes from previous reporting periods.
Stakeholder Engagement			

G4-24	List of stakeholder groups engaged by the organization	N/A	22, 48-49
G4-25	Basis for identification and selection of stakeholders	N/A	18, 22, 38, 46, 48, 50, 51-58
G4-26	Approaches to stakeholder engagement	N/A	18-19, 22, 38, 46, 48, 50, 51-58
G4-27	Key topics and concerns raised through stakeholder engagement	N/A	19, 22, 38, 46
Report Profile			
G4-28	Reporting period	N/A	6
G4-29	Date of most recent previous report	N/A	6
G4-30	Reporting cycle	N/A	6
G4-31	Contact point for questions regarding the report or its contents	N/A	58
G4-32	GRI Content Index	N/A	51-58
G4-33	Policy and current practice with regard to external assurance	N/A	6, 9-10, 20
Governance			
G4-34	Governance structure of the organization	N/A	7, 48
G4-35	Process for delegation of authority		Authority for economic, environmental, and social topics for the WMPO is delegated from WM Sustainability Services and Corporate Marketing and the Thunderbirds Executive Director, Tournament Chairman, and Sustainability Chairman.
G4-36	Executive level responsibility		4, 7
G4-37	Report processes for consultation between stakeholders		18; WM and the Thunderbirds actively engage local and regional stakeholders when preparing for and operating the tournament.
G4-38	Independent, non-executive directors on Board		7, WM: Board of Directors
G4-39	Position of Chair of Board		Jack Pope is WM Non-Executive Chair. Tom King is Thunderbird Non-Executive Tournament Chairman.
G4-40	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.
G4-41	Processes in place for the highest governance body to ensure conflicts of interest are avoided.		48
G4-42	Report the highest governance body's roles in the development, approval, and updating of the organization's purpose, value or mission statements.		4, 48
G4-43	Governance development		The Waste Management Phoenix Open 2014 Sustainability Report evaluates the performance of the Thunderbirds and Waste Management. Also see 18-19, 54.
G4-44	Processes for evaluating the highest governance body's own performance		The Waste Management Phoenix Open 2014 Sustainability Report evaluates the performance of the Thunderbirds and Waste Management. Also see 18-19, 54.
G4-45	Board procedures for overseeing sustainability management		18-19, 48
G4-46	Report the highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental and social topics.		6
G4-47	Report the frequency of the highest governance body's review of economic, environmental and social impacts, risks, and opportunities.		Yearly; see WM Sustainability Report
G4-48	Report the highest committee or position that formally reviews and approves the organization's sustainability report.		Waste Management's Legal and Executive Team
G4-49	Report the process for communicating critical concerns to the highest governance body.		WM SEC Filings
G4-50	Number of critical concerns		Zero

G4-51	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.
G4-52	Remuneration processes	Omit	Confidentiality constraints
G4-53	Shareholders / employees communication to Board		WM is a publicly traded company. Thunderbirds are 501c3 non-profit.
G4-54	Report the ratio of the annual total compensation for the organization's highest-paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country	Omit	Confidentiality constraints
G4-55	Report the ratio of percentage increase in annual total compensation for the organization's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual) in the same country.	Omit	Confidentiality constraints
Ethics and Integrity			
G4-56	Mission and values statements, codes, sustainability principles	N/A	18, 34, 48
G4-57	Report the internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity, such as helplines or advice lines		Executive Direction of the Thunderbirds organization is the compliance chair and assists in these regards.
G4-58	Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines.		Executive Direction of the Thunderbirds organization is the compliance chair and assists in these regards.

Specific Standard Disclosures			
Material Aspects	Description	Omissions	DMA and Indicators
Economic Performance			
G4-EC1	Direct economic value generated and distributed		3, 16, 21, 24, 26
G4-EC2	Financial implications, risks and opportunities due to climate change		31, 33
G4-EC3	Benefit plan obligations		WM Benefit Obligations
G4-EC4	Significant financial assistance received from government		No significant financial assistance is received from government.
Market Presence			
G4-EC5	Minimum wage		At the time of the event Arizona's minimum wage was \$7.90
G4-EC6	Policy, practices, and proportion of spending on locally-based suppliers		11, 37; Approximately 80% of food and beverage at the tournament were locally based companies.
Indirect Economic Impacts			
G4-EC7	Infrastructure investments		Charity Investments
G4-EC8	Development and impact of infrastructure investments and services		11, 20-22
Procurement Practices			
G4-EC9	Local supplier		Approximately 80% of food and beverage vendors were locally based.

Environmental Disclosure on Management		
Materials		
G4-EN1	Materials used by weight or volume	9-10, 14-16, 26
G4-EN2	Percentage of materials used that are recycled input materials	10-15, 16, 26-30
Energy		
G4-EN3	Direct energy consumption by primary energy source, Indirect energy consumption by primary source	14, 16, 26-30
G4-EN4	Energy consumption outside of the organization	15
G4-EN5	Energy Intensity	16; 1.95 kilowatt hours of energy used per 1 attendee
G4-EN6	Reduction of energy consumption	14-16, 26-30
G4-EN7	Initiatives to provide energy-efficient or renewable energy based events and reductions in energy requirements	14, 16, 26-30
Water		
G4-EN8	Total water withdrawal by source, conservation and improvement initiatives and results	14-16, 26-30, 34-36
G4-EN9	Water sources significantly affected by withdrawal of water	8, 14-15
G4-EN10	Percentage and total volume of water recycled and reused	14-16, 26-30
Biodiversity		
G4-EN11	Land in / next to high biodiversity value	8, 14, 31-33, 34-36
G4-EN12	Impacts on Biodiversity	8, 16, 26-30, 31-33
G4-EN13	Habitats protected or restored	31-33, 34-36
G4-EN14	IUCN Red List species	No species are on the IUCN Red List
Emissions		
G4-EN15	Total direct greenhouse gas emissions by weight (scope 1)	16-17, 26-30
G4-EN16	Total indirect greenhouse gas emissions by weight (Scope 2)	16-17, 26-30
G4-EN17	Other relevant indirect greenhouse gas emissions by weight (Scope 3)	15-17, 26-30
G4-EN18	Greenhouse gas emissions intensity	16; 0.96 lbs. of CO ₂ e per attendee
G4-EN19	Initiatives to reduce greenhouse gas emissions	9, 15-16
G4-EN20	Emissions of ozone depleting substances	Ozone depleting substances may be found in limited quantities in refrigerators at the event; these are not tracked
G4-EN21	NOX, SOX and other significant air emissions	16
Effluents and Waste		
G4-EN22	Total water discharge by quality and destination	10, 14-16
G4-EN23	Total weight of waste by type and disposal method	10-11, 14-16
G4-EN24	Total number and volume of significant spills	There were no significant spills in the reporting period.
G4-EN25	Transported, imported, exported or treated hazardous waste	There was no waste that was deemed hazardous within the reporting period.
G4-EN26	Water bodies and related habitats affected by discharges	8, 14, 16, 26-28, 31-33, 34-36
Products and Services		
G4-EN27	Mitigating environmental impacts from products and services	9-12, 14-17, 20-21, 26-30, 31-33, 34-36
G4-EN28	Products sold or provided and packaging reclaimed	11, 45-46
Compliance		
G4-EN29	Fines and sanctions for non-compliance legislation	No fines or non-monetary sanctions were incurred.

Transportation			
G4-EN30	Environmental impacts of transportation		15-16, 26-30
Overall			
G4-EN31	Total environmental protection expenditures	Omit	Confidentiality constraints
Supplier Environmental Assessment			
G4-EN31	Percentage of new suppliers screened		100%
G4-EN32	Significant environmental impacts in the supply chain	Omit	The information is currently unavailable. Currently working toward implementing data collection systems to better understand the holistic impacts of its supply chain.
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken		37-44
Environmental Grievance Mechanisms			
G4-EN34	Number of grievances		No grievances were reported
Labor Practices and Decent Work Disclosures			
Employment			
G4-LA1	Total new employee hires and volunteers		48
G4-LA2	Benefits provided		WM Benefits
G4-LA3	Return to work and retention rates provided	Omit	Not applicable
Labor/Management Relations			
G4-LA4	Minimum notice periods regarding operational changes	Omit	Not applicable
Occupational Health and Safety			
G4-LA5	Percentage of workforce represented in joint management		48
G4-LA6	Rates of injury		Zero injuries, occupational diseases, lost days, absenteeism, and work-related fatalities occurred.
G4-LA7	Workers with high incidence or high risk of diseases related to their occupation	Omit	Confidentiality constraints
G4-LA8	Health and safety topics covered in formal agreements with trade unions	Omit	Confidentiality constraints
Training and Education			
G4-LA9	Average hours of training per year per employee by gender, and by employee category		13, 48
G4-LA10	Skills management		
G4-LA11	Performance and career development reviews	Omit	Confidentiality constraints
Diversity and Equal Opportunity			
G4-LA12	Composition of governance bodies and breakdown of employees	Omit	Confidentiality constraints
Equal Remuneration for Women and Men			
G4-LA13	Performance and career development reviews	Omit	Confidentiality constraints
Supplier Assessment for Labor Practices			
G4-LA14	Suppliers that were screened using labor practices criteria		100%
G4-LA15	Significant impacts for labor practices in the supply chain	Omit	Information is currently unavailable. Currently working toward implementing data collection systems to better understand the holistic impacts of its supply chain.

Labor Practice Grievance Mechanisms			
G4-LA16	Number of grievances about labor practices filed		None
Human Rights Disclosure on Management Approach			
Investment			
G4-HR1	Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	Omit	Confidentiality constraints
G4-HR2	Total hours of employee training on human rights policies		None
Non-discrimination			
G4-HR3	Discrimination		There were no incidents of discrimination reported.
Freedom of Association and Collective Bargaining			
G4-HR4	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.
Child Labor			
G4-HR5	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.
Forced or Compulsory Labor			
G4-HR6	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.
Security Practices			
G4-HR7	Security personnel or volunteers trained in human rights policies		There were no security personnel or volunteers trained in policies or procedures concerning human rights.
Indigenous Rights			
G4-HR8	Total number of incidents of violations involving rights of indigenous peoples and actions taken		There were no incidents of violations involving rights of indigenous people reported.
Assessment			
G4-HR9	Total number and percentage of operations that have been subject to human rights reviews or impact assessments		There were no operations subject to human rights reviews and/or impact assessments.
Supplier Human Rights Assessment			
G4-HR10	Percentage of new suppliers that were screened using human rights criteria		100%
G4-HR11	Significant actual and potential negative human rights impacts in the supply chain and actions taken	Omit	Information is currently unavailable. Currently working toward implementing data collection systems to better understand the holistic impacts of its supply chain.
Human Rights Grievance Mechanisms			
G4-HR12	Grievances related to human rights		There were no grievances related to human rights filed.

Society Disclosure on Management Approach			
Local Communities			
G4-S01	Local community engagement, impact assessments, and development programs.		12, 13, 16, 21-22, 26-30, 37
G4-S02	Operations with significant potential or actual negative impacts on local communities		9, 11-14, 16, 26-30, 31, 34, 45
Anti-Corruption			
G4-S03	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified		Zero business units are analyzed for risks related to corruption.
G4-S04	Workforce trained in anti-corruption policies		Zero percent of the workforce is trained in anti-corruption policies and procedures.
G4-S05	Incidents of corruption and wrong-doing		Zero incidents of corruption and wrong-doing have been reported.
Public Policy			
G4-S06	Total value of political contributions by country and recipient/beneficiary	Omit	Confidentiality constraints
Anti-Competitive Behavior			
G4-S07	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.
Compliance			
G4-S08	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.
Supplier Assessment for Impacts on Society			
G4-S09	Suppliers screened using criteria for impacts on society		100%
G4-S010	Prevention and mitigation measures for negative impacts on local communities		21, 45
Grievance Mechanisms for Impacts on Society			
G4-S011	Number of grievances about impacts on society filed		None
Product Responsibility Disclosure on Management Approach			
Performance Indicators			
G4-PR1	Life cycle stages in which wellbeing and the health and safety impacts are assessed for improvement		9, 11-13, 18-19, 26-30, 37-45
G4-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.
G4-PR3	Product information required by procedures		12, 45
G4-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.
G4-PR5	Practices related to customer satisfaction		26-30, 46

G4-PR6	Sale of banned or disputed products	No banned or disputed products were sold
G4-PR7	Incidents of non-compliance concerning marketing communications	There have been no incidents of non-compliance with regulations and voluntary codes concerning marketing communications.
G4-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.
G4-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.
EO Indicators		
EO1	Direct economic impacts and value creation as a result of sustainability initiatives	3, 21, 24
EO2	Modes of transport taken by attendees and participants and initiatives to encourage the use of sustainable transport options	15, 26-30
EO3	Impacts of transporting attendees and participants to and from the event	15-16, 26-30
EO4	Expressions of dissent	7
EO5	Socially inclusive environment	13, 18-19
EO6	Accessible environment	16, 21-23, 26-30, 46
EO7	Injuries, fatalities and notifiable incidents	Unfortunately, there was one casualty on the course - an elderly man tragically suffered heart complications while attending the event.
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, 21, 26-30, 37, 47
EO10	Financial and in kind benefits received from suppliers	
EO11	Sustainability initiatives designed to raise awareness and impact behavior change	8, 13, 16, 18-22, 23-28, 48-50
EO12	Knowledge transfer of best practice and lessons learned	16-20, 21, 26-30, 48-50, 52-55
EO13	Technological legacies	8, 21

(G4-31) Inquiries related to the content of this report should be directed to Michele Grossman, Managing Principal, Waste Management at mgrossm1@wm.com.

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