



Waste Management Phoenix Open 2015 Sustainability Report



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2015 Waste Management Phoenix Open - The Greenest Show on Grass



ZERO WASTE CHALLENGE

Waste Management established policies to control materials brought into the event and educates vendors and patrons about the proper placement of materials so that zero waste is sent to the landfill.



TRANSPARENT REPORTING

- Achieved "Zero Waste to Landfill Operations" with 10% incineration with energy recovery validation from Underwriters Laboratories Environment, Inc.
- Evergreen Certification from the Council for Responsible Sport
- Global Reporting Initiative Reporting Framework
- ISO 20121 Sustainable Event Management



"GREENEST SHOW ON GRASS"

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



WASTE DIVERSION

- 100% Materials diverted from landfill: 49% Recycled; 36% Composted; 10% Waste-to-Energy; 5% Donation



WATER CONSERVATION

- Started WMPO Water Campaign with Change the Course to restore 35 million gallons of water to the Colorado River Basin and Verde River
- Worked with Bonneville Environmental Foundation, National Geographic, and Participant Media to engage WMPO fans about reducing their embedded water footprint
- Reused a record 6,100 gallons of graywater from cooking and cleaning in the portable toilets, resulting in significant water savings



REUSE & DONATIONS

- Reused 40 cubic-yards roll-off dumpsters repurposed as three Zero Waste Stations in 2014
- Donated 30,000 pounds of unused food to local non-profits
- Donated over 25,000 pounds of mesh fencing, carpet, turf and used vinyl banners to the Habitat for Humanity ReStore
- Reused 53,082 square feet of signage from 2014; Over 75% stored for potential reuse at the 2016 tournament
- Reused 140,000 golf balls and 750,000 recycled-content golf tees to create WM's two tournament water features



RENEWABLE ENERGY

- 100% of electricity provided by renewable energy
- Solar power used to power WM's hospitality tent at the 18th hole
- Biodiesel replaced diesel in generators

COMMUNITY IMPACT

Through charitable giving, community stakeholder engagement, and involvement of students, the Waste Management Phoenix Open impacts the lives of citizens in the surrounding community.

In 2015, the WMPO generated
Over \$8 Million
 in charitable donations

Giving Back

- Donated to Keep America Beautiful and Keep Scottsdale Beautiful for providing Zero Waste Station volunteers
- Provided free tournament access to law enforcement, emergency services, and military personnel
- The Patriot's Outpost on the 18th Hole welcomed over 3,800 active and retired military personnel with their guests



Community Engagement Programs & Events

- Youth Engagement through Standard Bearer Program and First Tee's Dream Day
- CBS Outdoor Special Olympics Open
- The WMPO's Executive Sustainability Forum
- Continued the PGA TOUR Sustainability Challenge

Social Engagement

- Everyone was encouraged to share their passion for golf, the WMPO and green practices using #greenestshow
- Annual GREEN OUT day on Saturday raised \$75,000 for local charities thanks to fans and players sporting green to support the many green attributes of the WMPO



1.0 Introduction

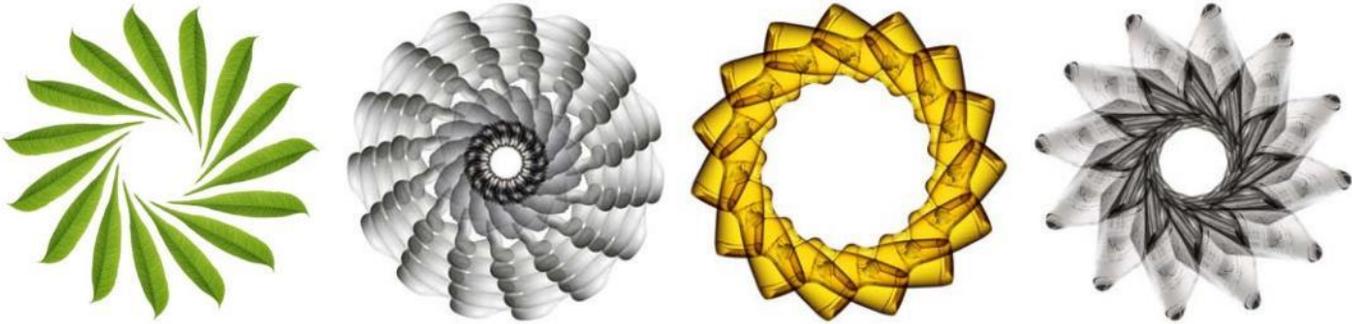
(G4-3, G4-5) The Waste Management Phoenix Open (WMPO)—the best-attended golf tournament in the world—takes place each year in Scottsdale, Arizona. This city, with a population of 227,000, welcomes more than 500,000 fans annually to the “Greatest Show on Grass.”

(G4-EC1, E01) Waste Management (WM) 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 trailblazers 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, with a total economic impact from the 2015 tournament estimated at more than \$227 million, the WMPO has one of the largest economic impacts of any golf event in the nation.



1.1 Statement from Waste Management



Innovation

(G4-1, G4-2, G4-36, G4-42) This year, the Waste Management Phoenix Open drew more fans than any golf tournament ever. It raised over \$8 million for charity. And it produced some amazing golf!

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, donation, and waste-to-energy facilities. In simple terms: 7 days, 564,368 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.

We first achieved the zero waste goal in 2013. We did it again in 2014 and once again 2015. 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 (for the second time) and UL Environment (for the third year in a row). In their report, UL noted that the WMPO improved upon its methods of diversion for the third straight year, this year again achieving "Zero Waste to Landfill Operations with 10% incineration with energy recovery." Donation programs through Michael's Catering, Waste Not, and Habitat for Humanity ReStore made that possible. The Council for Responsible Sport elevated the tournament's two-year certification to Evergreen, making the WMPO the first PGA TOUR event and, in fact, the largest event ever with Evergreen certification.

This year, Waste Management also increased our focus on water conservation. Water scarcity is a growing concern in Arizona and across the Southwest region. We joined Change the Course to utilize the WMPO's widespread impact to educate people about embedded water consumption. We are proud to announce that the WMPO Water Campaign raised funds to restore 35 million gallons of water to the Colorado River Basin and Verde River.

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.

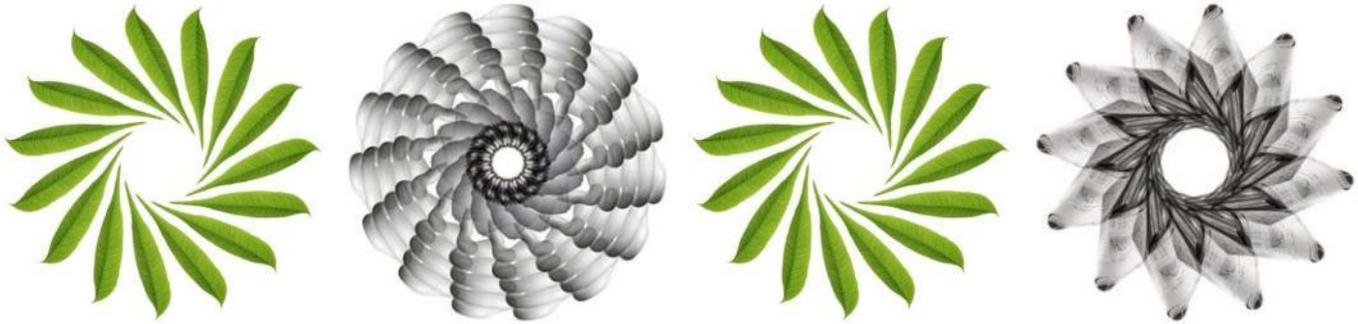
See you all at the tee box next year!

Jim Trevathan



Jim Trevathan
Chief Operating Officer
Waste Management

1.2 Statement from The Thunderbirds



Beyond Golf

(G4-1, G4-2) The 2015 Waste Management Phoenix Open was a tremendous success. 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, over 564,000 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 third 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 2015 alone, over \$8 million was generated for local charities, bringing the overall total to over \$100 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 \$277 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 2016!

Danny Calihan



Danny Calihan
Tournament Chairman
2015 Waste Management
Phoenix Open
The 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 sixth annual WMPO Sustainability Assessment Report; 2010 was our baseline year. Since 2011, we have operated under a standard for sustainable events management, ISO20121 and before that BS8901, which 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 we continue to self-certify. In 2013, we worked with the Council for Responsible Sport (the Council; CRS), which formally recognizes the successful completion of a socially and environmentally responsible sporting event with a two-year certification. We achieved Gold certification from the Council, marking the first certification for a golf tournament, and we improved in 2015, reaching Evergreen certification for the first time. Please see Appendix A for a list of credits achieved. WM also worked with Underwriters Laboratories Environment Inc. (UL) 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 worked with UL to achieve an even higher level of diversion, "Zero Waste to Landfill Operations with 10% incineration with energy recovery," and in 2015, we maintained the UL validation. Waste Management hopes to set the standard by which all sports 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 2015 WMPO event address the full range of material economic, environmental, and social impacts of the WMPO. See Appendix H for a full list of material aspects identified and reported using GRI standards. The reporting period is November 1, 2014 through May 1, 2015. 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 from event operations that have no or discard-associated reductions in market value. Examples of non-product outputs include trash, carpet, scrim, used bottles and cans, greenhouse gas emissions, food waste, gray water, and sewage.

3.0 About the Waste Management Phoenix Open

(G4-8) 2015 marks the 80th 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 2015, the WMPO was played January 29 through February 1, at TPC Scottsdale and attended by 564,368 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 \$100 million through their WMPO activities. The active Thunderbirds, of which there are 55, volunteer as chairs of specific aspects of the WMPO, with activities that change each year. The Thunderbirds Concessions Chair again served as the Sustainability Chair as well, acting 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 14 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) In 2014, Beyond Sport recognized WMPO with its [Sport for the Environment Award](#) and Environmental Leader recognized WMPO as a [2014 Project of the Year](#). The WMPO was also awarded "Best Title Sponsor Integration" by the PGA TOUR in 2013. In addition, the WMPO received the PGA Tour's "Best Promotional Idea" award for powering the event by renewable sources (solar, wind and biomass), diverting 100% of tournament waste to recycling, composting and waste-to-energy with no trash cans on site.

Furthermore, in 2013 the PGA TOUR awarded WMPO "Best Special Event," "Best Promotional Idea," and "Most Engaged Community." 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.



(E011, E012, E013) This year, WM also continued with the second annual PGA TOUR Sustainability Challenge. All PGA tournaments were invited to complete a questionnaire detailing their respective sustainable event initiatives. The winner was invited to attend the 2015 WMPO as well as Waste Management's Fifth Annual Executive Sustainability Forum during 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. Owned by the Bureau of Reclamation, the property is a flood control basin for the Central Arizona Project. 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 six years, with the 2010 WMPO as a baseline, use of alternative energy sources has increased, overall greenhouse gas emissions reduced, and all greenhouse gas emissions from WMPO operations and player travel offset. A graywater pilot project has become a regular fixture at WMPO and this year, WM joined Bonneville Environmental Foundation's (BEF) Change the Course campaign to restore over 35 million gallons of water to the Colorado River Basin and Verde River. 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 fourth year of the Challenge, we strived to improve the management of event material inputs, outputs and disposal, and to expand vendor and fan education of proper waste disposal.

In continuing with the Zero Waste theme from the previous three 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 2015, WM also continued utilizing three Zero Waste Stations (ZWS), repurposed 40-cubic yard roll-off dumpsters that WM transformed into eye-catching kiosks where fans can drop off their waste items. Three Zero Waste Stations were set up in high traffic areas on course, with volunteers who collected and sorted materials from attendees. In 2015, WM made donations to Keep Phoenix Beautiful and Keep Scottsdale Beautiful for their representatives who served as volunteers. This year, WM additionally set up interactive games to teach attendees about recycling and composting at the WMPO.

Waste data is 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 and compostable food and beverage materials.

The keys to our success with the Zero Waste Challenge over the last four 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 2015 and in years to come

(G4-15, G4-33 G4-EN1, G4-EN2, G4-EN22) In 2015, 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 UL verify our waste diversion rate, achieving “100% landfill diversion rate with 12% incineration with energy recovery.” In 2014, the WMPO elevated its certification and in 2015, we maintained this achievement of “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. In the end, “diversion” for its own sake has no value if the materials collected for recycling and composting are not turned into worthwhile commodities. 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 optical sensing 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 windrows, 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.

In 2015, Michael’s Catering helped optimize the WMPO food donation program, helping donate over 30,000 pounds of perishable food. WM additionally worked with Habitat for Humanity’s ReStore to donate 25,239 pounds of green mesh scrim, carpet and turf. Waste reduction is prioritized before recycling and reuse where possible. Due to ongoing changes in commodity markets, certain materials could not be recycled. 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 and is included in third-party calculations since it was thoroughly processed before disposal.

Chart 1: Materials Diverted by Percentage, 2015

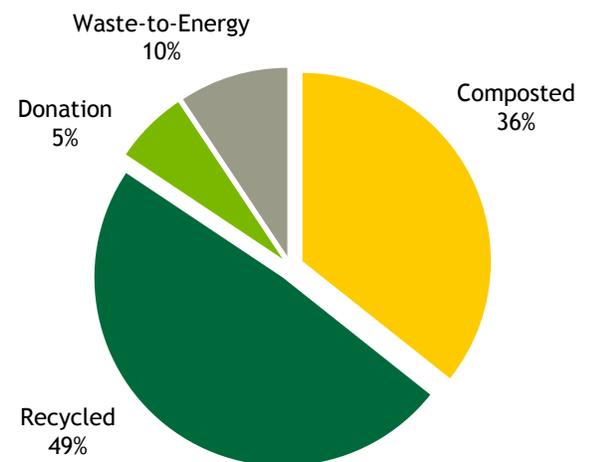
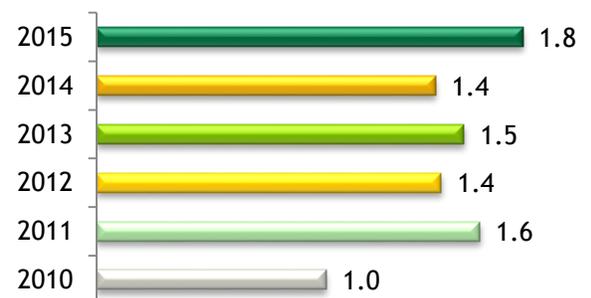


Chart 2: Pounds of Recovered Waste Per Attendee, 2015



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 2015, the WMPO displayed 88,337 square feet of signage, 60% of which was reused from 2014. Over 75% of the 2015 signage is stored for potential reuse. 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 golf balls and the second WM water feature incorporated 750,000 reused golf tees made from 100% recycled content. Both the golf balls and tees have been reused since 2012 and will be reused next year.

In 2015, over 30,000 pounds of unused, perishable food from the WMPO was donated to Waste Not Perishable Food Rescue and Delivery as well as Church on the Street. WM and The Thunderbirds with work with Michael’s Catering, further expanding this vendor food donation program in 2016 by organizing a convenient pickup for all food vendors.

WM additionally worked with Habitat for Humanity ReStore locations in 2015 to capture and donate 25,239 pounds of green mesh scrim, carpet and turf, along with 682 pounds of vinyl fence signage, most of which WM had reused outdoors since the 2010 event.

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.

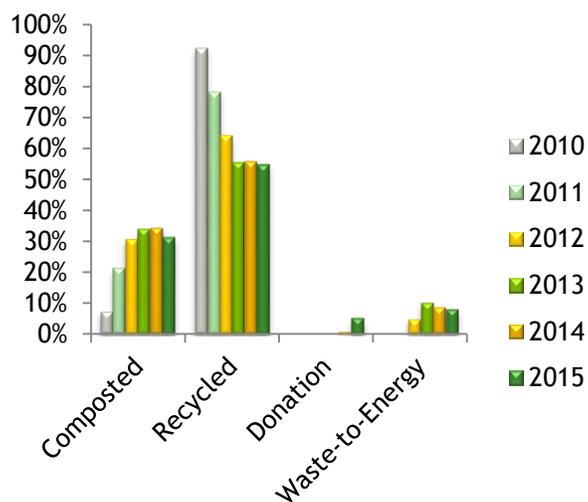
(G4-EN2, G4-EN23, G4-EN27, G4-EN28, G4-SO1, E06, E012) Reusing materials each year and contracting with vendors who reuse materials prevents tons of waste from going to landfill. The amount of materials used to set up the WMPO requires a firm commitment to reuse.

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 to address any issues that arose. For the 2014 WMPO, WM revised these requirements so all food and beverage service packaging were composted, and these expectations remained the same for the 2015 WMPO. 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	2015
Composted	21	86	136	160	154	159
Recycled	184	208	216	197	206	216
Waste-to-Energy	-	-	22	49	40	41
H4H Donation	-	-	-	-	-	13
Food Donation	-	-	-	8	5	15

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, E09) 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, 2% of all products were made from 100% organic cotton, 94% were manufactured from 100% recycled content (up from 18% in 2014), and another 2% included 30% recycled content.

When considering the number of promotional items procured, 100% were reusable. In addition, 10% of all products were made from 100% organic cotton, 59% were manufactured from 100% recycled content and another 8% included 30% recycled content.

For more information on the specific items purchased, please see Appendix E.

Vendor Giveaways

(PR4, E09) 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. Since then, 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 also made from sustainable materials. If WM encountered a giveaway that was not divertible 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-S01, G4-S02, E09) 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 2015, the WMPO used 88,337 square feet of signage. WM tracks the sustainability of this material: 6% of all signs used were recyclable and made with high post-consumer recycled content, 16% was made from recyclable material, and 78% was reusable. In addition, 60% of this signage was reused from previous tournaments and 75% of all 2015 signage is being stored for reuse for the 2016 event. Sign manufacturers are sourced locally in the Phoenix area and prioritize using water-based, latex inks in their printing process.

Daily tickets, 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. All manufacturing and production data for signs and printing processes came from local printing companies.

Cleaning Products

(G4-PR1, G4-PR3, G4-EN2, E09) 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

(E05, E011) 2015 marked the second year of a revised volunteer engagement program in the form of Zero Waste Stations. Three Zero Waste Stations 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. In addition to sorting materials from attendees at a Zero Waste Station, volunteers also helped educate tournament attendees, increased awareness of the diversion goals, and coordinated with operations staff if service issues arose.

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. WM had 199 individual volunteers for the Zero Waste Stations. In an effort to engage the community, WM donated to both Keep Phoenix Beautiful and Keep Scottsdale Beautiful for the time their representatives served as Volunteer Managers. The two organizations contributed 29 volunteers and over 200 total hours. Managing the Zero Waste Station volunteers was 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 get updates 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, Waste Management, and event vendors.

Energy highlights from 2015 were:

- Mitigated the use of diesel 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.
- Since 2011, 100% of electricity has been provided by renewable energy, purchased through the local utility, Arizona Public Service.
- 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.



In addition, WM worked with ClimeCo Corporation to offset all greenhouse gas emissions from WMPO operations as well as all player travel, a total of 300 metric tons of carbon dioxide equivalent (MTCO₂e) through a landfill gas capture to energy project in Rodman, NY. Greenhouse gas emissions from WMPO operations totaled 154 MTCO₂e while player travel generated 86 MTCO₂e.

4.3 Water

(G4-EN9, G4-EN11, G4-EN22, G4-EN26, G4-EN27, G4-SO2) 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.

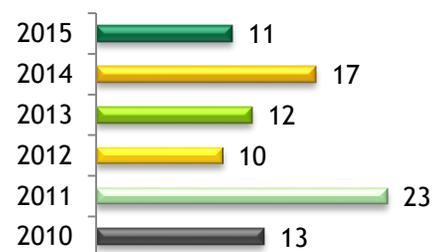
The event implements conservation measures to ensure that this valuable resource is used responsibly and limits pressures on the municipal water supply. Volunteers and employees are educated on conservation measures. For example, hand-washing stations used hand sanitizer instead of water and portable 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. Since then, approximately 12,500 gallons of water was been reused through this initiative, and in 2015, WM estimates we collected a record 6,100 gallons for reuse.

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

For the 2015 event, WM again tracked fresh water usage to estimate that approximately 47,340 gallons of fresh water was used at TPC during the tournament. This is 28,980 fewer

Chart 4: Ounces of Metered Water Use Per Attendee



gallons of fresh water usage compared to the 2014 WMPO. About 24,996 gallons of water were sold as bottled water in 2015, and 21,047 gallons of fresh water were used in the portable toilets.

In 2015, WM also started the WMPO Water Campaign, becoming a Change the Course (CtC) sponsor by restoring 10 million gallons to the Colorado River Basin and the Verde River in Arizona, and working with National Geographic and Participant Media for online and on-course engagement. The Thunderbirds built on the Campaign by selecting Change the Course campaign one of three recipients of funds raised on Green Out Day, resulting in another 25 million gallons restored. To highlight the WMPO Water Campaign a month in advance of the event and on course, the Change the Course team created a microsite (wmpo.changethecourse.us) where people could learn about the campaign as well as make pledges and donations. They also created a special text campaign (“Text WMPO to 77177”) that enabled anyone to pledge from their phone for free.

WM also coordinated with National Geographic to create mug boards for attendees to pose with and to engage attendees around a Life Without Water is Awkward theme. Furthermore, the WMPO donated an Expo booth space to CtC, highlighted CtC at WM evening events with athletes and celebrities, included CtC advertisements on the 16th Hole and Fan Zone leaderboards, and added a CtC Life Without Water is Awkward commercial to the video on the daily shuttle buses from WMPO parking lots to the course. 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. BEF works with local Water Trusts to ensure that all water restoration projects are tracked and create a Verified Instream Flow Benefit. All projects are certified by the National Fish and Wildlife Foundation.



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. Many WM 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 largely electric and so fueled by renewable energy. Fuel data is provided by WM operations and 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 tracking 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 allow WM to estimate the following:

- Approximately 3% of fans biked, took a motorcycle, or walked to the tournament
- Approximately 6% of fans drove from another city and stayed in a hotel
- Approximately 9% of the fans took a local bus or party bus to the tournament
- Approximately 10% of fans took a taxi to the tournament
- Approximately 16% of the fans flew to the tournament
- Approximately 57% of the fans drove, parked, and took a WMPO shuttle to the tournament
- Spectator air travel generated approximately 40,798 MTCO_{2e}
- Spectator auto travel generated approximately 11,889 MTCO_{2e}

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.

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 from 2010 through 2015. 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 - 2015

FUEL USE		2010	2011	2012	2013	2014	2015	2010	2011	2012	2013	2014	2015
		(GALLONS)						(MTCO _{2e}) ¹					
Propane	heat, cooking	8,890	14,053	13,195	6,408	7,587	9,863	52	82	81	37	42	60
Diesel	shuttle buses	4,750	6,332	5,207	2,829	2,714	2,688	48	64	53	29	28	27
Biodiesel	shuttle buses	-	-	-	1,213	679	896	-	-	-	11	6	7
Diesel	generators/ equipment	3,220	4,668	5,577	3,883	-	-	33	47	57	39	-	-
Gasoline	sponsor cars	3,000	2,300	2,325	2,279	1,954	1,842	27	21	21	13	17	16
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	23
CNG ²	portable toilet service	-	-	-	207	185	192	-	-	-	0.3	0.2	0.1
Biodiesel	generators	190	-	1,099	2,969	2,504	1,630	5	-	10	28	24	17
CNG ²	waste hauling service	-	1,804	482	519	1,097	-	-	2	0.4	0.1	1.0	3.4
Cooking Oil	recycled	600	325	350	350	700	500	-	-	-	-	-	-
ELECTRICITY		(KILOWATT HOURS)						(MTCO _{2e}) ¹					
Electricity	conventional energy	125,691	-	-	-	-	-	76	-	-	-	-	-
Electricity	renewable energy	-	141,595	117,031	131,513	132,630	130,387	-	-	-	-	-	-
Electricity	solar	-	119	24	56	62	62	-	-	-	-	-	-
WASTE MANAGEMENT ³		(TONS)						(MTCO _{2e}) ¹					
Composted	food scraps, F&B serving materials, wood	21	86	136	160	154	159	-21	19	54	77	86	66
Recycled	plastics, metals, fibers	184	208	216	197	206	216	-300	-104	-316	-208	-280	-259
WTE	residuals	-	-	22	49	40	41	-	-	-5	40	-9	-10
Donated	Food	-	-	-	8	5	15	-	-	-	-0.3	-6	-18
Donated	Scrim, carpet, turf, vinyl signage	-	-	-	-	-	13	-	-	-	-	-	-21
WATER		(GALLONS)											
Water	fresh, metered	44,200	65,570	40,400	50,510	76,320	47,340						
Water	fresh, used in POLs	-	-	18,520	19,184	19,060	21,047						
Water	graywater, used in POLs	-	-	3,138	4,800	4,645	6,100						
Water	bottled	-	-	19,780	25,313	18,842	24,996						
TOTAL GREENHOUSE GAS EMISSIONS								-133	143	-28	90	-63	-89

1 MTCO_{2e} is metric tons of carbon dioxide equivalent.

2 CNG volume is provided in gas gallon equivalent.

3 The [EPA's WARM model](#) uses defaults and averages to calculate GHG emissions from end-of-life management.

(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 through 2015, and 2015 alone.

Chart 5: MTCO₂e per Emission Source, 2010 - 2015

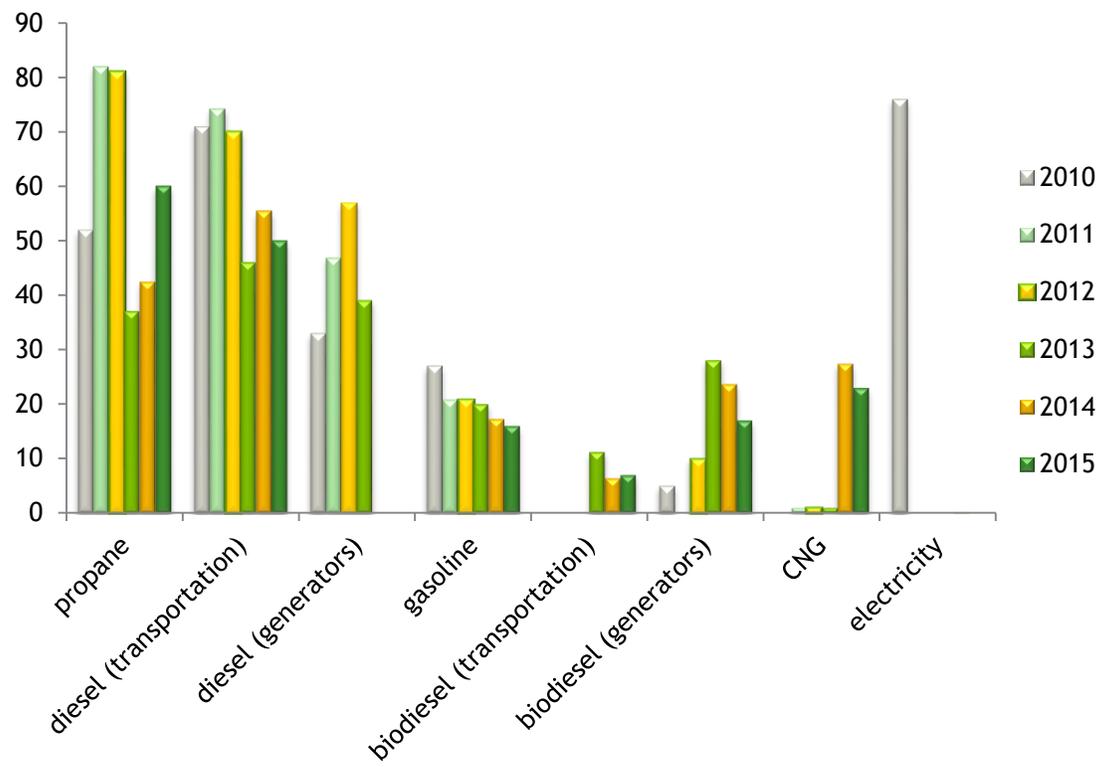
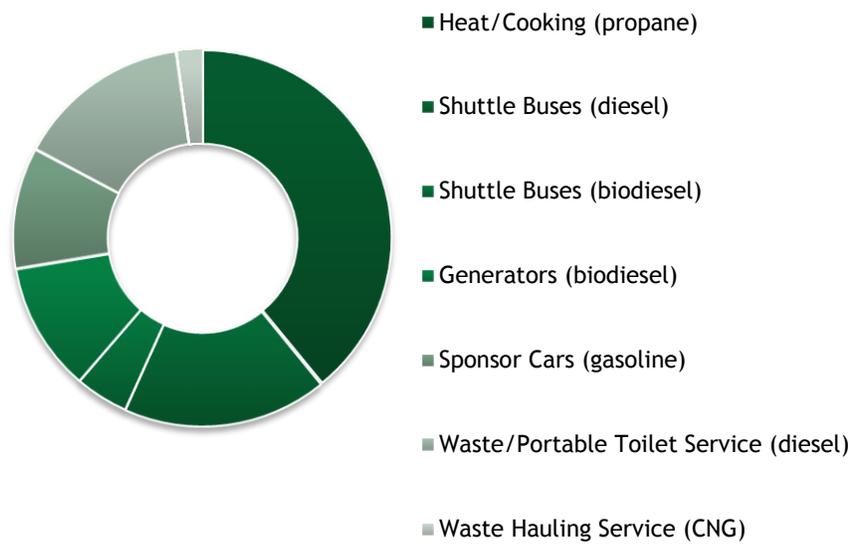


Chart 6: MTCO₂e per Emission Source, 2015



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 testament to the fact 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 2015 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 2015, WM engaged vendors earlier, with a specific point of contact year round. The Thunderbirds hosted one vendor meeting in the middle of January. Since there were no new operational details and changes in materials allowed on course in 2015, WM sent all vendors an online survey along with the Guideline for Acceptable Materials 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 Thunderbirds’ Sustainability Chairman to identify solutions to material challenges. This allowed event organizers and vendors to work toward shared goals of maximizing waste reduction and minimizing material usage. A few weeks before the tournament, The Thunderbirds hosted the vendor meeting to review operational details, walk through the Zero Waste Challenge with new vendors, and address any outstanding concerns.

In 2015, 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 compliant 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 400 event attendees to determine that:

- Almost 39% were aware of the WMPO's gray water recycling initiative
- Over 25% were aware that WM's 18th Hole Hospitality Tent was powered by solar
- More than 76% were aware that there are no trash cans on course; only compost and recycling bins

These initiatives and others 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. When 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 as well as prominent non-governmental organizations. One of WM's specific goals 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.

This year's Forum, with a theme of "Energy Evolution: Powering Change Through Innovation, Efficiency and Technology," saw a 23% increase in attendance from the previous year, and an online engagement reached 30,898 viewers. "Waste Management is committed to accelerating the evolution of energy and sustainability," said WM President and CEO, David Steiner. "Because the key to moving forward is knowledge, the Executive Sustainability Forum will bring together environmental experts, industry pioneers and business leaders to explore recent innovations and better understand, embrace and drive changes that will contribute to a cleaner, greener, more sustainable future."

This year's forum featured keynote presentations from David Steiner; Amory Lovins, American physicist, environmental scientist, writer, Co-founder/Chief Scientist of the Rocky Mountain Institute and considered among the world's leading authorities on energy; and Gwen Ruta, Vice President, Programs for Environmental Defense Fund, a leading nonprofit organization linking science, economics and law to solve the planet's most serious environmental problems. The program also featured three "Future Views" presentations: Yalmaz Siddiqui, Senior Director of Environmental and Supplier Diversity Strategy at Office Depot; Gregory Kallenberg, Director and Producer of the Rational Middle Energy Series; and Allen Hershkowitz, President of the Green Sports Alliance and Distinguished Professor in Sustainable Management, Presidio Graduate School. The Forum concluded with a panel discussion featuring high-profile representatives from sports franchises, including the NFL, NHL, NASCAR and the WMPO, who examined what businesses and communities can learn from the world of sports.

In addition, WM took a zero waste approach to this year's event. The Zero Waste Challenge at the Sustainability Forum is an extension of the sustainability plan outlined at the WMPO that, for two consecutive years, has successfully achieved 100% diversion from landfill. The Four Seasons Resort Scottsdale served as host for the Forum. With a limited recycling program already in place, WM set up temporary containers for compost and other recyclables. WM also worked with the Forum's planning committee and the Four Seasons' staff to ensure proper sustainability practices such as purchasing items in bulk and serving in reusable containers were used. In addition, WM worked with the Four Seasons' steward team to develop a waste conveyance plan and provide training. As a result of their efforts, WM was able to capture 300 pounds of compost and 460 pounds of recyclable materials from the Forum, accounting for nearly all of the materials leaving the Four Seasons Resort Scottsdale. The success of the 2015 Forum set an aggressive benchmark for next year's forum and showed attendees that zero waste initiatives are achievable on any level - from conferences of 300 to tournaments of 550,000 and everything in-between.



PGA TOUR 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. In 2015, the Sustainability Services team at WM continued this evaluation and graded 22 participating tournaments.

The RBC Canadian Open received the highest cumulative score for Materials Management, Natural Resources Tracking and Conservation, Economic Impact and Overall Sustainability. Waste Management sustainability experts scored participating tournaments' submissions and were pleased to note that ninety-one percent of the 22 PGA TOUR tournaments that submitted applications have a recycling program in place and track their diversion of waste from landfills. As the winner, RBC Canadian Open leadership will attend the upcoming Waste Management Phoenix Open and Waste Management's fifth annual Executive Sustainability Forum.

RBC Canadian Open employs numerous sustainable practices at the carbon-neutral tournament including: reducing waste by diverting it from landfills and into recycling and organics facilities; providing sorting stations where spectators bring their waste and volunteers place it in proper recycling or composting receptacles; donating unused food to local food banks; offering sustainable transportation options and more. The Royal Montreal Golf Club, home of the 2014 RBC Canadian Open, is also certified as an Audubon Cooperative Sanctuary golf course, a designation earned for its certification in six categories: Environmental Planning, Chemical Use Reduction and Safety, Water Conservation, Water Quality Management, Wildlife & Habitat Management, and Outreach and Education.

"We are committed to making the RBC Canadian Open a green event," said Bill Paul, chief championship officer and tournament director of the RBC Canadian Open. "We are proud to work with RBC and all of our partners to ensure our tournament continues to be a positive example of best practices to reduce the event's environmental impact within the markets where we conduct the championship."

"As a zero waste event, the award-winning Waste Management Phoenix Open has set the 'green' standard for sustainability in sports," said Jim Trevathan, WM's Executive Vice President and COO. "The Sustainability Challenge provides Waste Management the opportunity to recognize the successes of a growing number of PGA TOUR tournaments like the RBC Canadian Open that are expanding their green initiatives so that others will continue to be encouraged to 'green' the game of golf."

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. (UL) for a third-party verification of the 2013 event's waste diversion, achieving "100% landfill diversion rate with 12% incineration with energy recovery." UL'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. UL 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 UL to achieve a higher level of diversion, "Zero Waste to Landfill Operations with 10% incineration with energy recovery." Again, in 2015, the WMPO achieved "Zero Waste to Landfill Operations with 10% incineration with energy recovery," but exceeded our goal by reaching Evergreen certification from the Council. 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 2015 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 2015 WMPO is expected to generate over \$8 million for charity when the final number is announced later this year; this will surpass the \$7 million donated from the 2014 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 \$75,000 was raised for three local environmental groups.



The Thunderbirds donated over \$100,000 to charities chosen by participants in the 2015 Phoenix Suns Charities Shot at Glory. Former Florida Gators Heisman Trophy winning quarterback Tim Tebow won the Shot at Glory by knocking his shot 11'3" from the cup in this unique closest-to-the-pin contest. New York Post sports writer and 2008 Shot at Glory winner Mark Cannizzaro finished second at 35'2" and country music artist Jake Owen finished third at 54'4". With the win, Tebow earned \$40,000 for the Tim Tebow Foundation. Cannizzaro earned \$25,000 for Val Skinner's Life Event by Susan G Komen for second place, while \$15,000 was donated to Jake Owen's charity, the Jake Owen Foundation, for third place. Each of the remaining participant's charities received \$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 2015, this included:

- Tuesday 1/27/15: Power Paws Assistance Dogs (www.azpowerpaws.org)
- Wednesday 1/28/15: Spina Bifida Association of Arizona (www.sbaaz.org)
- Thursday 1/29/15: Delta Dental Foundation of Arizona (www.deltadentalaz.com/foundation)
- Friday 1/31/14: Banner Health Foundation (www.bannerhealth.com)
- Saturday 2/1/15 Hacienda Healthcare (www.haciendahealthcare.org)
- Sunday 2/2/15: Liberty Wildlife Rehabilitation Foundation (www.libertywildlife.org)

Fan Engagement

(G4-S01, G4-EC8, E06) WM launched the “Green in 15” social media video contest in advance of the 2015 WMPO. All legal residents of the 50 United States and the District of Columbia who are 21 years of age or older were invited to creatively demonstrate how they commit to going green in 2015, in 15 seconds or less, using Instagram’s video platform.

Videos were judged on the following criteria: the effective communication of ideas around sustainability (illustrate one or all of the Four R’s: Reduce, Reuse, Recycle and Recover); creativity and originality; entertainment value and suitability of video content to be used by WM. Selected finalists had their videos available for online fan voting on WM’s Facebook page during the WMPO tournament week and the winner was announced the Monday after the event. Finalists received various prizes, including QN Green Gear, solar powered phone chargers and other prizes. One grand prize winner received a “Green Your Home” experience from The Home Depot to be used toward the remodel or “greening” of the winner’s chosen living space.

“Waste Management developed the ‘Green in 15’ video contest to demonstrate to fans, followers and tournament attendees that making changes to go green isn’t just simple, but takes less than 15 seconds,” said Jim Trevathan, WM’s Executive Vice President and COO. “Waste Management continues to leverage our title sponsorship of the Waste Management Phoenix Open to challenge consumers to make small changes in their daily lives and commit to a more sustainable lifestyle.”

The “Green in 15” video contest is one of the many ways that WM continues to educate and engage consumers about sustainability at the WMPO. WM continued to promote the use of the hashtag #GreenestShow to provide an outlet for fans to share their green practices and support for sustainability and sports.



Community Stakeholder Engagement

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

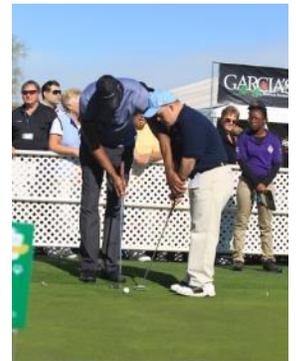
- The Thunderbirds meet with the presidents or heads of the neighborhood associations each fall. They review the event times, parking operations, street closures and specifically the Bird’s Nest schedule. There are five neighborhoods involved every year. All nearby residents in these areas are informed about the meeting and invited to attend. Neighborhood association heads typically 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. At the 2014 tournament, attendance was 3,800, and this year attendance increased to 4,250 people.
- 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 is powered by American Solar.

Youth Involvement

(G4-SO1, E06) Youth engagement is another important social benefit 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 play an integral part of the WMPO experience for the spectators, holding the player score signs and walking 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, thereby earning an opportunity to attend the WMPO Pro-Am or Pro event during the school week. Some volunteers are not students. During a round, a Standard Bearer can walk up to seven miles. In 2015, 288 students between the ages 18 and under participated in the Standard Bearer program at the WMPO.

First Tee Dream Day activities occur Tuesday of tournament week. These students would likely not have the opportunity to attend the WMPO, and would certainly never have the chance to engage in the First Tee Dream Day Activities without these efforts. In 2015, a record 390 students participated from six schools in four school districts (Mesa, Chandler, Kyrene and the newest NSP district, Paradise Valley). Staff included a record 61 volunteers, 24 PGA Members, 12 First Tee staff, and four JGAA Staff. For the Dream Day activities, eight students from The First Tee, JGAA and Girls Golf of Phoenix participated in “Practice with the Pro’s,” getting to work with Stan Utle, Carlos Ortiz, and Luke Guthrie. Ten students were led on the “Behind the Scene’s Tour,” visiting the PING equipment trailer, the Thunderbird office, the media center, the Police Department Canine division, the 16th Hole tee and the Golf Channel set. For “Caddy Day,” 19 students participated and The First Tee raised \$9,020.

Furthermore, for the “Wells Fargo Succeeding Together @ PGA Tour Superstore,” 18 students joined Scott Langley for a book reading and then clinic at the PGATSS. Students were each given a backpack filled with goodies and several won prizes given away by Scott. Two lucky “Junior Reporters” from The First Tee also wrote a blog that appeared on the WMPO website Thursday and Friday evenings. After the WMPO, The First Tee was involved in more activities with the WMPO for students who would otherwise never have the chance to partake in these opportunities. After the 2015 WMPO, eight students participated on the par 3 holes, 3 students participated on the long drive challenge hole, and 13 volunteers helped with shuttles, witnesses on par 3’s and providing snacks to the groups. The First Tee also raised \$400 from Sky to Green and \$1980 from the Long Drive Challenge.



CBS Outdoor Special Olympics

(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 2015, 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 ten Special Olympians, ten celebrities/sports stars, ten business leaders and PGA TOUR professionals all competing in a putting challenge. This pre-tournament event was open to all ticket holders and media.



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 (www.wmphenixopen.com) for a list of key changes to the security policy so that they may appropriately plan for the upcoming 2015 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 2015 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 2015 tournament 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 to be \$268 million. For the 2015 WMPO, it was projected to increase by roughly \$9 million to \$277 million.

6.0 Conclusion

In 2015, the WMPO again attracted more fans 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 2015 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
Section 1: Planning and Communications		
1.1	Develop a formal plan to reduce event's environmental footprint and increase social impact	Documentation submitted to CRS - Confidential.
1.2	Publicize intentions and plans	WM submitted a press release, website press release, on course signage and social media posts to CRS.
1.3	Choose sites and/or facilities that minimize environmental impacts	Documentation in 2015 WMPO Sustainability Report - Appendix C More about TPC Scottsdale.
1.4	Choose sites that allow for the participation of people with disabilities	WM submitted background on the TPC of Scottsdale's ADA compliance and the WMPO's CBS Outdoor Special Olympics during tournament week to CRS; http://wmphoenixopen.com/spectator-info/faqs/ .
1.5	Solicit stakeholder feedback regarding sustainability efforts	WM submitted results from an attendee survey that assessed what WMPO attendees know about our sustainability programs, and post-event local research. Documentation submitted to CRS - Confidential.
1.6	Notify community and solicit feedback on how to mitigate any negative impacts of your event on the surrounding neighborhoods/communities	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. Documentation submitted to CRS - Confidential.
1.7	Publish a sustainability report	Documentation is the 2015 WMPO Sustainability Report.
1.8	Promoting sustainable options for food & lodging	The documentation was available on thinkgreen.com at (http://www.wm.com/thinkgreen/pdfs/WMPO-2015-Restaurants-Hotels.pdf), and through social media posts like: https://twitter.com/WasteManagement/status/558648559491641344 .



WM wanted to highlight the WMPO Water Campaign a month in advance of the event, and on site. The CtC team created wmpo.changethecourse.us with WM where people could learn more about the campaign, make the pledge, and/or make a donation. After taking the pledge, visitors saw five water saving behaviors or actions they could pledge to take.

In addition, National Geographic created four mug boards for the WMPO, coordinating with WM. Two were permanent and set into the ground on the course next to the Zero Waste stations. The image of two people rafting in a dry riverbed was stationed at the Zero Waste Merchandise Tent, and the image of one person taking a shower with no water was stationed next to the Zero Waste station at the 18th hole.

As a title sponsor of the event, WM also gave CtC their spot in the Expo booth. It was the front and center 10x10 booth location. Two “mobile” mug boards were placed at the booth. Initially one board was supposed to move around the course, but they were not sturdy enough to be placed on the course. One board was an image of someone pouring a bucket of water in the river. The other was a person fishing in a dry river bed. The remaining space was used for two vertical infographic banners that contained detailed campaign information. National Geographic also created a pledge tracker board, and we placed the Kohler enter to win sign (11x17) on the expo booth table. They created 1,000 3x5 business cards with the microsite, the call to action, and the text code to pledge. They handed out all of the cards at the event and they turned out to be one of the best tools. All volunteers wore green shirts that said “Life Without Water is Awkward” with the WMPO logo on the back and additional campaign information with the text code to pledge. In addition, Waste Management was able to add a 30-second Life Without Water is Awkward commercial to run on the parking lot shuttle buses. WM also gifted leaderboard inventory on the course and in the Fan Zone to CtC, where the Life Without Water is Awkward theme was shown with the “Text WMPO to 77177” call to action.

1.9 Having an interactive education space or activation

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.

1.10 Develop a Safety and Security Plan

Documentation submitted to CRS - Confidential.

1.11 Innovation: 2015 WMPO Executive Sustainability Forum

The WMPO Executive Sustainability Forum; WM is holding the Forum on the Tuesday of the WMPO week, and GreenBiz is streaming it on repeat; WM has also organized the ability for anyone to get SWANA CEUs from attending. The intent is to expand the impact of the WMPO's sustainability programs by sharing them with a wider audience than in 2014 (12,000 streaming viewers), and continuing the Forum as a unique element of the WMPO that brings in high level sustainability experts to foster conversations with corporate leaders, experts, innovators and companies for an interactive, engaging discussions. The forum is implemented through months of planning for speakers and sessions, and success is measured by the speakers, how many people attend and view the speakers on GreenBiz. Documentation in Section 5.1 of the Sustainability Report.

Section 2: Procurement

2.1	Event has a written sustainable procurement policy	Documentation in 2015 WMPO Sustainability Report - Appendix D Guidelines for Acceptable Materials; additional information submitted to CRS.
2.2	Event organizers rely upon online systems for both participant and volunteer registration and communications	<p>WMPO Pro-Am participants register online only. The Thunderbirds have in place the ability to do all the registration as well as ongoing communication with the players to be handled through our online system. Players must request physical registration materials. Of the 200+ amateur player spots, only 1 person indicated that they needed printed material to register, due to a lack of online connectivity. Registration for the PGA TOUR Pro Tournaments are also completed online. Some individuals must submit physical documentation to join the PGA TOUR, but registration for the WMPO is online.</p> <p>All Zero Waste Station and Change the Course volunteer registration was completed online through WM, The Thunderbirds, and BEF.</p>
2.3	Provide athletes, volunteers and spectators easy access to food and beverages that are locally and/or sustainably produced	The WMPO did not pursue these credits.
2.4	Procuring at least one product or service from a locally owned business	Trademark Visual provides all signage for the WMPO. This included the wooden CtC Mug Boards. They are based in Phoenix, Arizona. Additional information submitted to CRS - Confidential.
2.5	Maximizing sustainable attributes of official event mementos.	Documentation in the 2015 WMPO Sustainability Report -WM Promotional Items and Giveaways and Appendix E Procurement.
2.6	Signing contracts with women and/or minority owned businesses	The Herb Box is female-owned; the Herb Box provides all of the concessions for The Thunderbirds hospitality tent off of the 18th Hole.
2.7	Innovation: Zero Waste Stations	<p>In 2014 and 2015, WM utilized three Zero Waste Stations to help educate attendees about WM diversion and collect material as well. Zero Waste Stations were constructed from 40-cubic yard open top dumpsters that were no longer useable. In the past, WM spent a lot of time engaging hundreds of volunteers, who were not always engaged in helping attendees. By creating three Zero Waste Stations, we demonstrated WM's commitment to reuse and we engage attendees in a new, fun way. In 2015, we wanted to increase this effort by incorporating games and prizes to attendee engagement at the Stations. WM exceed expectations by collecting over 1,000 email addresses were provided for people to commit to WM's Recycle Often, Recycle Right campaign, and reaching thousands of WMPO fans. Additional information submitted to CRS.</p>

Section 3: Resource Management

3.1	Event has a written waste diversion plan	The Waste Diversion Plan for the WMPO is developed over a series of phone calls that begin between 10 and 11 months before the tournament. WM develops a waste flow document and spreadsheet based on the WMPO zones. WM's wheeled totes are used for back of house collection and cardboard compost/recycling bins are used front of house. In kitchens, we add a third waste stream to capture difficult-to-recycle materials and prevent against diversion contamination. In addition, WMSS worked with Habitat for Humanity ReStore locations to have them capture scrim, carpet and turf after the event. All other material is brought to WM's transfer station where it is evaluated and hauled to compost, WM's MRF or another location if necessary; additional documentation submitted to CRS - Confidential.
3.2	Event tracks waste diversion from landfill	All WM trucks are weighed before and after material is processed so all waste is tracked thoroughly. Documentation submitted to CRS - Confidential.
3.3	Event strives for "zero waste"	WM captured, diverted, sorted, and tracked all waste from the WMPO. Documentation submitted to CRS - Confidential.
3.4	Event composts organic waste	Composting was available at all public locations at the WMPO; additional documentation submitted to CRS.
3.5	Reusing or donating one non-food item	140,000 golf balls and 750,000 recyclable golf tees will be reused in the WM water features. It is stored at a nearby WM facility in a packed container, and they will be unpacked shortly before the 2016 WMPO.
3.6	Having a robust food donation program	WM supported The Thunderbirds and Michael's Catering to capture and donate 15 tons of perishable food to Waste Not. Michael's provided a freezer space where Waste Not and Church on the Street could easily pick up food with less of a rush; additional documentation submitted to CRS.
3.7	Educating participants and/or spectators about waste diversion efforts	Documentation for signage on course, WM social media postings and press releases submitted to CRS.
3.8	Waste Diversion Innovation: Habitat for Humanity	WM worked with Habitat for Humanity ReStore and Clayton Floor Covering & Design to capture and donate over 12.5 tons of scrim, carpet and turf. The material was picked up for over 2 weeks during the site breakdown, and trucks from the five Habitat ReStore locations in the area picked up material from TPC Scottsdale, weighed their load at WM's Deer Valley Transfer Station, and brought the material back to their stores. All trucks were also weighed empty at the WM location. Following the event, 786 pounds of old WMPO vinyl signage was also donated through Trademark Visual; there was no weight on this load, but Trademark Visual weighed the signage before the donation.

3.9	Measure the water use of the event	Documentation in 2015 Sustainability Report - Water section.
3.10	Implementing an initiative that conserves water at the event	<p>Grey Water Initiative - In 2011, water conservation measures included a pilot project to reuse graywater from cooking and cleaning in the portable lavatories and portable toilets that used less water than conventional toilets, resulting in a savings of approximately 1,476 gallons. In 2013, this gray water initiative resulted in an increased savings of approximately 4,800 gallons. The 2 CNG POL trucks only pumped out the Hole 16, Corporate Village and several 250-350 gal holding tanks. The grey water from the 2 CNG trucks were used in POL units. For the 2014 event, WM standardized a best practice for this collection. Grey water is captured from the main kitchen areas at Holes 16, 17 and 18; every night between Thursday and Saturday, two POL collection trucks pumped grey water from these kitchens' holding tanks, which varied from 100 to 800 gallons depending on usage. The two trucks then discharged the grey water into the large banks of POLs closest to those kitchens. The remaining available grey water was dispersed to the units located in the parking lots, police centers and tram stops until the trucks were empty. The signage to the right is in most portable toilets on site to inform attendees of this program. In 2015, WM continued its grey water collection program and strived to improve the program, making minor adjustments to capture more kitchen waste water. WM increased grey water capture to an estimated 6,800 gallons, up from roughly 4,500 gallons from the 2014 WMPO.</p>
3.11	Raising awareness of local water related issues	<p>The WMPO Water Campaign's promotions (microsite, social media, leaderboards, mug boards) provide information or direction to more information on local and regional water-related issues; additional documentation submitted to CRS - Confidential.</p>
3.12	Raising awareness of water conservation issues in general	<p>The WMPO Water Campaign's promotions (microsite, social media, leaderboards, mug boards) provide information or direction to more information on general water-related issues; additional documentation submitted to CRS - Confidential.</p>
3.13	Water Conservation Innovation: Change the Course Engagement on Course	<p>To reach people in an engaging way, we worked with BEF and National Geographic to create multiple mug boards around the theme that Life is Award without Water. Expectations were exceed; we expected to get one Mug Board on course and we got two permanent mug boards as well as two mobile mug boards. This required Thunderbird and PGA approval, as did getting campaign information on the 16th Hole leaderboards; additional documentation submitted to CRS.</p>
3.14	Calculating carbon footprints	<p>Documentation in 2015 WMPO Sustainability Report - Greenhouse Gas section.</p>
3.15	Using alternative and/or renewable energy sources	<p>Documentation submitted to CRS - Confidential.</p>



3.16	Offset carbon footprint of event operations	Through a collaboration with ClimeCo Corporation, WM offset 300 MtCO ₂ e. This covers all internal operations (153.5 MtCO ₂ e). Documentation submitted to CRS.
3.17-19	Offset Long Distance Travel	Through a collaboration with ClimeCo Corporation, WM offset 300 MtCO ₂ e. This covers all internal long distance player travel (86.1 MtCO ₂ e). Documentation submitted to CRS.
3.20	Innovation: Mitigation of Diesel Fuel in On Course Generators	WM mitigated the usage of diesel generators on course in 2014; we removed two generators, hooked three generators up to renewably sources electricity, and converted the others to biodiesel. The intent was to continue to reduce the event's reliance on conventional fuels, and was achieved by replacing some with biodiesel and hooking others up to the electricity grid where we purchased all renewably sourced power. Success was measured by not using any diesel generators for WM and Thunderbirds operations on site during the 2015 WMPO.
Section 4: Access and Equity		
4.1	Event has a formal access and equity policy	Documentation submitted to CRS - Confidential.
4.2	Develop plan for outreach to under-represented group(s) in your community and implement plans to reduce barriers to their participation	WM wrote a WMPO Outreach plan before the event. It targeted military personnel (active and retired) as well as students. The obstacle to reaching veterans (and emergency service personnel) was reduced by offering free admission and the Patriots Outpost on the 18th hole, while students who would otherwise not be able to attend the WMPO were engaged through The First Tee's Dream Day and the Standard Bearers Program; additional documentation submitted to CRS - Confidential.
4.3	Stage events to include differently abled athletes/sports	The CBS Outdoor Special Olympics Open (putting contest) occurred at on Tuesday of Tournament week on the TPC Scottsdale Putting Green. 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 is open to all ticket holders and media, and lasted about an hour. This year, some participants included: Bruce Arians, Head Coach of the Arizona Cardinals, Paul Goldschmidt, First Baseman for the Arizona Diamondbacks, Patrick Corbin, Pitcher for the Arizona Diamondbacks, Rickie Fowler, PGA TOUR Golfer, Luis Gonzalez, former player for the Arizona Diamondbacks, and Justin Upton, Outfielder for the San Diego Padres; additional documentation submitted to CRS.
4.4	Host a volunteer or staff training session on access & equity	Volunteers all received a training based on the training document. Documentation submitted to CRS.
4.5	Provide an accessibility service freely to participants and/or visitors	Free seated scooters were provided for all people who need them.



Documentation from Thunderbirds Charities submitted to CRS. The intent of these donations is serve those populations who encounter obstacles to

from the WMPO, and the success of this funding is specifically measured by reaching those in the community who need the most help with basic access and equity:

4.6 Access and Equity Innovation:

- Homeward Bound to support their children’s services programming for homeless youth in Maricopa County, including a new afterschool program, and general children’s services programming, which provides year-round activities to enhance homeless children’s development and academic growth,
- Military Assistance Missions to support E6 and lower active duty Arizona military members with financial grants for basic everyday needs like food, utilities, rent, mortgage, vehicle assistance and more
- Playworks Arizona to support programming in Maricopa County schools for low-income elementary school students for the 2015-16 school year; with the support of Thunderbirds Charities, Playworks Arizona expects to serve up to 20,000 children at Title 1 Elementary schools during the 2015-16 school year

In this category grouping, the success was measured is the permanence of the programs. They are more than temporary solution, and while more help is always needed, these initiatives will help people for year to come.

Section 5: Community Legacy

5.1 Measure the event’s economic impact on the host county or city

WM utilized ASU’s 2012 WMPO Economic Impact Study and 2015 attendee and charitable donation data to estimate that the 2015 WMPO generated an economic impact of over \$277 million. Documentation submitted to CRS - Confidential.

5.2 Promote locally-owned businesses

The WMPO supported free booth space for one non-profit organization daily in the Expo through Birdies for Charity (BFC). This included:

- Tuesday 1/27/15: Power Paws Assistance Dogs (www.azpowerpaws.org)
- Wednesday 1/28/15: Spina Bifida Association of Arizona (www.sbaaz.org)
- Thursday 1/29/15: Delta Dental Foundation of Arizona (www.deltadentalaz.com/foundation)
- Friday 1/31/14: Banner Health Foundation (www.bannerhealth.com)
- Saturday 2/1/15: Hacienda Healthcare (www.haciendahealthcare.org)
- Sunday 2/2/15: Liberty Wildlife Rehabilitation Foundation (www.libertywildlife.org)

The charities that at the 2015 WMPO BFC Expo booth were able to solicit additional pledges and accept donations during their day. Besides being listed on the booth’s banner, they received an ad in the program and The Thunderbirds posted on social media each day, telling people to check out the organization and included pictures. Reportedly, the charities promoted themselves on social media similarly.



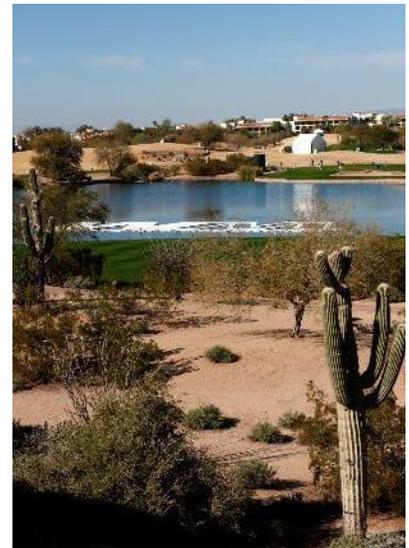
5.3	Partner with a non-profit organization to promote the mission of the organization through co-branding or publicity initiatives	WM has partnered with BEF on a microsite (wmpo.changethecourse.us) and provided leaderboard promotions at the 16th Hole; additional documentation submitted to CRS.
5.4	Actively fundraise on behalf of the organization	The WMPO raised over \$35,000 for Change the Course through corporate donations, Green Out for Charity and the WMPO Microsite.
5.5	Make a donation to the organization	The Thunderbirds choose BEF and CtC as one of the Green Out for Charity recipients and the WMPO donated \$25,000 to CtC as a result.
5.6	Community Legacy Innovation:	<p>Documentation from Thunderbirds Charities submitted to CRS. The intent of these donations is leave a lasting community legacy from the WMPO, and the success of this funding is specifically measured by reaching those in the community who need more assistance:</p> <ul style="list-style-type: none"> • UPWARD for Children and Families to help the community's most severely disabled and medically fragile children • The Phoenix Children's Hospital for a new pediatric emergency department and level 1 pediatric trauma center • The Phoenix Children's Hospital to purchase a new Crews'n Healthmobile, a mobile medical unity that provides free medical services directly to young adults up to the age of 25 who are homeless or at-risk of becoming homeless <p>In this category grouping, the success was measured is the permanence of the legacy, in this case multiple infrastructure projects for health programs.</p>



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.

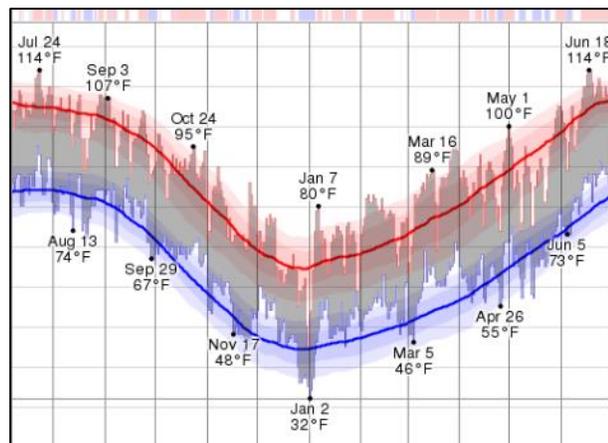


The 2012-2014 North American Droughts, an expansion of the 2010-2012 Southern United States droughts, originated in the midst of a record breaking heat wave. Low snowfall amounts in winter, coupled with the intense summer heat from La Niña, caused drought-like conditions to migrate northward from the 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

In 2015, there is no change to the long-term drought conditions across the state. The only drought free area continues to be the in the Lower Gila and Lower Colorado River basins in the southwestern part of the state. Northern Arizona is abnormally dry as that is where the tail end of the few winter storms crossed into Arizona. Unfortunately the majority of Arizona's winter storms were relatively dry or relatively warm, so snowpack was minimal this year across the higher elevations of northern Arizona and the Mogollon Rim. Roosevelt Reservoir is only slightly lower than this time last year due to water conservation efforts, but the Colorado River reservoirs are expected to drop much lower than this time last year due to dry conditions on the Upper Colorado watershed.³

As the effects of climate change in the Phoenix area intensify in 2015⁴, 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 areas in Arizona and other states (such as California, Colorado and New Mexico) and a total of thirty million people⁵.

The daily low (blue) and high (red) temperature during 2014-2015 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 <http://www.azwater.gov/azdwr/StatewidePlanning/Drought/DroughtStatus2.htm>. Retrieved 2015-07-10.

⁴ <https://weatherspark.com/history/31259/2015/Phoenix-Arizona-United-States>. Retrieved 2015-07-03.

⁵ "Life Blood of the American Southwest." Save the Colorado. <<http://www.savethecolorado.org/river.php>>. Retrieved 2014-06-01.



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 gray water 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 2012-2015 droughts.

The National Climate Assessment 2015 - Southwest

(G4-EC2) The **National Climate Assessment (NCA)**⁶ 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 Messages⁷

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.

⁶ http://en.wikipedia.org/wiki/National_Climate_Assessment

⁷ 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-S01, 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 two years in a row. It was a truly impressive feat that could not have been accomplished without teamwork. [Learn more.](#)

Our focus this year is on continuing to maintain this high level of commitment. Again there will be no trash receptacles on the course, only two methods of disposal - recycling bins and compost bins. As part of the ongoing Zero Waste Challenge campaign, everyone must provide 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: **there are no changes to the Acceptable Materials Guidelines for the 2015 WMPO.**

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, 2014.**

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, straws</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, straws	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	<i>Used plastic or latex gloves must be collected in a separate, specially marked bin.</i>
Packaging	Clean, dry food packaging can be placed in recycling. <i>Dirty, wet or food soiled plastic packaging must be collected in a separate, specially marked bin.</i>
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 <ul style="list-style-type: none">• NO polystyrene (Styrofoam®), multiple combined material types
Non-compostable food ware <ul style="list-style-type: none">• NO plastic cups, plastic plates, plastic utensils, plastic hot cup lids, polystyrene (Styrofoam)
Non-recyclable signs unless they will be reused by vendor <ul style="list-style-type: none">• 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, 2014**

Tim Woods

2015 Thunderbird Concessions Chairman & Sustainability Chairman

Email: tim-woods@leavitt.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 2015 WMPO are listed in the table below.

ITEM NAME	ECO DESCRIPTION	QUANTITY (#)	QUANTITY (%)	PRICE (%)
¾ in. x 32 in. Recycled PET Lanyard wMA3 - Metal Bulldog Clip	100% Recycled Content; 100% Recyclable	600	31.09%	5.08%
Portrait Folders	100% Recyclable	300	15.54%	1.04%
Certified Organic Cotton Lanyard - 34 in.	100% Certified Organic Cotton; Reusable	200	10.36%	2.03%
SPF 30 Sunscreen Tottle Attached to SPF 30 Lip Balm	30% Post-industrial recycled polypropylene; 100% Recyclable	150	7.77%	1.60%
Magellan Drawstring Backpack Bag - 16 x 20	Reusable	145	7.51%	0.90%
North End Lightweight Recycled Polyester Hat	100% Recycled Content; Reusable	72	3.73%	2.99%
Men's Eco Soft-Shell Dura Freestyle Jacket - Phoenix Open	100% Recycled Content; Reusable	70	3.63%	23.75%
Recycled PET Eco-Drytech Visor - Phoenix Open	100% Recycled Content; Reusable	48	2.49%	3.58%
Men's Eco-Drytech Triple-Stitch Polo Shirt - Phoenix Open	100% Recycled Content; Reusable	43	2.23%	6.77%
Men's Green Eco-Drytech Jericho Polo Shirt - Phoenix Open	100% Recycled Content; Reusable	41	2.12%	6.45%
Men's Eco-Drytech Relay Polo Shirt - Phoenix Open	100% Recycled Content; Reusable	39	2.02%	6.14%
Men's Red Eco-Drytech Jericho Polo Shirt - Phoenix Open	100% Recycled Content; Reusable	37	1.92%	5.82%
Men's Eco-Drytech United Polo Shirt - Phoenix Open	100% Recycled Content; Reusable	37	1.92%	5.82%
Ladies' Eco Soft-Shell Dura Freestyle Jacket - Phoenix Open	100% Recycled Content; Reusable	26	1.35%	8.82%
Ladies' Green Eco-Drytech Jericho Polo Shirt - Phoenix Open	100% Recycled Content; Reusable	25	1.30%	3.93%
Ladies' Eco-Drytech Triple-Stitch Polo Shirt - Phoenix Open	100% Recycled Content; Reusable	25	1.30%	3.93%
Ladies' Eco-Drytech Relay Polo Shirt - Phoenix Open	100% Recycled Content; Reusable	24	1.24%	3.78%
Ladies' Eco-Drytech United Polo Shirt - Phoenix Open	100% Recycled Content; Reusable	24	1.24%	3.78%
Ladies' Red Eco-Drytech Jericho Polo Shirt - Phoenix Open	100% Recycled Content; Reusable	24	1.24%	3.78%
Total		1,930	100%	100%

Appendix F Survey Results

(G4-2, G4-25, G4-26, G4-27, G4-PR5, E06, E011, E012) Several surveys were used to collect stakeholder feedback and gauge the satisfaction of fans and participants during and following the tournament. In 2015, surveys were sent to local leaders and influential business people, as well as fans on course. Descriptions and summaries of results are provided below.

After the 2015 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

Nearly all respondents found achieving 100% waste diversion believable, but fewer find it believable to have no trash receptacles on site. Both of these initiatives provide a positive impact on Waste Management favorability.

The initiatives with the greatest impact were food donated to Waste Not, recyclable or compostable vendor items, and Change the Course. However, the initiatives that are believed to make the event the greenest tournament on the circuit are greywater in lavatories, having the goal of 100% waste diversion, all items from vendors recyclable or compostable, and the Zero Waste Challenge. CMOLs felt more strongly than Business Influentials about the top 3 items to make it the greenest tournament.

Continuing the Zero Waste Challenge was considered the initiative that needed the most improvement in order to make it a greener event by both audiences. However, it was also the most highly rated theme across the board for almost all concepts by both audiences.

Both audiences significantly believe that the sustainability activities add value to the tournament, as well as WM adding value as the title sponsor.

The initiatives have a very positive effect on sentiment towards Waste Management among the CMOL group. Although “much more favorable” changes are generally on par with last year, the “total more” has improved significantly from last year for most initiatives. Two of the new initiatives have the greatest impact on favorability – Waste Not and Change the Course.

Most initiatives exhibit significant improvement in total impact from last year among the BI audience, as well as a good number of initiatives increasing in “much more favorable” impact. Composting food waste and materials exhibits the greatest improvement in overall impact and has the biggest overall impact, although new initiatives ‘Waste Not’ and ‘Habitat for Humanity’ also have very strong impact on company favorability.

Roughly half of respondents across both audiences report no concerns or suggestions for how the WMPO influences surrounding communities. Those who do have concerns, however, believe that facilitating traffic and providing alternative transportation options should take precedence, followed by offering more environmental and sustainability education.

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.

ARE YOU AWARE OF ANY OF THE WMPO'S WATER CONSERVATION AND RESTORATION INITIATIVES?	%
The Water Campaign/Change the Course	14.75%
Graywater reuse from the kitchen to the Port-o-lets	38.75%
Hand sanitizer stations instead of hand washing stations	28.25%
Environmentally-conscious Port-o-let chemicals	4.00%
Water restoration for fresh water usage at the WMPO	10.75%
No	43.00%

DID YOU HEAR OR LEARN ABOUT THE WMPO'S RENEWABLE ENERGY USAGE?	%
Only purchasing renewably-sourced electricity	6.50%
WM 18th Hole section powered by solar power	25.50%
Solar light towers and compactors	21.75%
Only biodiesel used in generated that require fuel	3.00%
No	66.75%

WHAT YOU LEARN ABOUT DIVERSION STRATEGIES AT THE WMPO?	%
There are no trash cans on course, only compost and recycling	76.50%
WMPO received UL certification for 100% waste diversion rates	15.75%
140,000 golf balls and 750,000 golf tees reused each year	21.25%
Most signage materials are reused each year	0.50%
Nothing	21.50%
Other	0.50%



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 2015 included multiple 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 2015 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 \$100 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), over 15 Featured Sponsors, and more than 1,440 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 3,000 volunteers annually: concessions, Zero Waste Station volunteers, Marshalls, scoring, and security.
Fans	For the week, total attendance in 2015 was 564,368.
Beneficiaries	With more than \$100 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 2015 WMPO.

DATA/INFORMATION NEEDS	ORGANIZATION	CONTACT	PHONE	EMAIL
Printing Inventory	Creative Litho, Inc.	Chris Baker	602-558-4916	chris@gocreativelitho.com
Generator Diesel (gal)	Thunderbirds	John Goff	602-757-8390	jgoff@wmphoenixopen.com
Propane (gal)	Thunderbirds	John Goff	602-757-8390	jgoff@wmphoenixopen.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	Janette Micelli	480-457-4702	jmicelli@wm.com
Waste Diversion (tons)	WM	Melina Oakes	602-323-3703	moakes@wm.com
Waste Transport Diesel Usage (gal/mi)	WM	James McNeil	623-879-7600	jmcneil@wm.com
Waste Transport CNG Usage (gal/mi)	WM	James McNeil	623-879-7600	jmcneil@wm.com
Volunteer Training Information	WM	Katie Symons	303-486-6166	ksymons@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, F&B, Sustainability Chairman	602-847-6159	tim-woods@leavitt.com; brettransom@spyglassstalent.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, 34, 50-51, 54-62
Organizational Profile			
G4-3	Name of the organization	N/A	3, 7
G4-4	Primary brands, products, and/or services	N/A	7
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, 52
G4-10	Total workforce	N/A	At the 2015 WMPO there were 55 Thunderbird Chairmen, 60 WM employees, 451 temporary workers, up to 199 volunteers, and over 30 vendors.
G4-11	Total workforce covered by collective bargaining agreements	N/A	WM SEC Filings ; WM is also working toward better understanding its third party vendor workforce next year.
G4-12	Organizational supply chain	N/A	53-54
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, 34, 37
G4-15	External charters, principles or initiatives endorsed	N/A	6, 9-11, 14-15, 20, 54
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, 18, 55-62
G4-19	List of material aspects	N/A	6, 18, 55-62
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, 52-53
G4-25	Basis for identification and selection of stakeholders	N/A	18, 22, 40-48, 50-62
G4-26	Approaches to stakeholder engagement	N/A	18-19, 22, 40-48, 50-62



G4-27	Key topics and concerns raised through stakeholder engagement	N/A	19, 22, 40-48, 50-51
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	62
G4-32	GRI Content Index	N/A	55-62
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, 52-54
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.		52-54
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, 52-54
G4-43	Governance development		The Waste Management Phoenix Open 2015 Sustainability Report evaluates the performance of The Thunderbirds and Waste Management. Also see 18-19, 54, 55-62.
G4-44	Processes for evaluating the highest governance body's own performance		The Waste Management Phoenix Open 2015 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, 52
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, 37, 52-54
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			
<i>Material Aspects</i>	<i>Description</i>	<i>Omissions</i>	<i>DMA and Indicators</i>
Economic Performance			
G4-EC1	Direct economic value generated and distributed		3, 21, 24, 26-33
G4-EC2	Financial implications, risks and opportunities due to climate change		34, 36
G4-EC3	Benefit plan obligations		http://www.wm.com/careers/benefits-overview/index.jsp
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 \$8.05
G4-EC6	Policy, practices, and proportion of spending on locally-based suppliers		11, 40-48; 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, 26-33
G4-EN2	Percentage of materials used that are recycled input materials	10-16, 26-33, 49
Energy		
G4-EN3	Direct energy consumption by primary energy source, Indirect energy consumption by primary source	14, 16, 26-33
G4-EN4	Energy consumption outside of the organization	15
G4-EN5	Energy Intensity	16, 26-33; 1.95 kilowatt hours of energy used per 1 attendee
G4-EN6	Reduction of energy consumption	14-17, 26-33
G4-EN7	Initiatives to provide energy-efficient or renewable energy based events and reductions in energy requirements	14-16, 26-33
Water		
G4-EN8	Total water withdrawal by source, conservation and improvement initiatives and results	14-16, 26-33, 37-39
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, 26-33
Biodiversity		
G4-EN11	Land in / next to high biodiversity value	8, 14, 34-39
G4-EN12	Impacts on Biodiversity	8, 26-39
G4-EN13	Habitats protected or restored	34-39
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
G4-EN16	Total indirect greenhouse gas emissions by weight (Scope 2)	16-17, 26-33
G4-EN17	Other relevant indirect greenhouse gas emissions by weight (Scope 3)	15-17, 26-33
G4-EN18	Greenhouse gas emissions intensity	16, 26-33; 0.96 lbs. of CO ₂ e per attendee
G4-EN19	Initiatives to reduce greenhouse gas emissions	9, 15-17
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	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, 26-33, 34, 37-39
Products and Services		
G4-EN27	Mitigating environmental impacts from products and services	9-12, 14-17, 20-21, 26-33, 35, 37-39
G4-EN28	Products sold or provided and packaging reclaimed	11, 49
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, 26-33

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		40-48
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		52
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		52
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, 52
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.		11-13, 21-23, 26-33, 37-48
G4-S02	Operations with significant potential or actual negative impacts on local communities		9, 11-14, 16, 26-33, 34-39, 49
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, 37-39, 49
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, 26-33, 40-49
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, 49
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		26-33, 50-51
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-51	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, 26-33
EO3	Impacts of transporting attendees and participants to and from the event	15-16, 26-33
EO4	Expressions of dissent	7
EO5	Socially inclusive environment	13, 18-19
EO6	Accessible environment	11, 21-23, 26-33, 50
EO7	Injuries, fatalities and notifiable incidents	None
EO8	Access to food and beverage that meets policies or local, national or international standards	11
EO9	Type and sustainability performance of sourcing initiatives	11-12, 16, 20, 26-33, 49
EO10	Financial and in kind benefits received from suppliers	None
EO11	Sustainability initiatives designed to raise awareness and impact behavior change	8, 13, 18, 20, 26-33, 50-51
EO12	Knowledge transfer of best practice and lessons learned	8-9, 11, 14, 18, 20-21, 26-33, 40-48, 50-51
EO13	Technological legacies	8, 20

(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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