Every choice we make during the months of planning for the Waste Management Phoenix Open (WMPO) - the best-attended golf tournament in the world - affects our claim to the title of the “The Greenest Show on Grass.”

The Thunderbirds, Waste Management, the PGA TOUR, TPC Scottsdale and all tournament stakeholders continue to be trailblazers on the journey towards increased sustainability. Along the way, we are thrilled to share best practices with other sporting events and venues to green their games.

**ECONOMIC IMPACTS**

2018 marked the 83rd annual Waste Management Phoenix Open tournament, making it one of the five longest established events on the PGA TOUR. Based on Arizona State University’s 2017 analysis, Waste Management estimated the total economic impact from the 2018 tournament and its fans at over **$390 million**, one of the largest financial impacts of any golf event in the nation.

**ENVIRONMENTAL IMPACTS**

The Waste Management Phoenix Open is **water positive, carbon neutral and zero waste**. The use of water, energy and materials all contribute to the greenhouse gas emissions that are warming our planet, so the Waste Management Phoenix Open commits to balancing all environmental impacts from tournament activities.

**SOCIAL IMPACTS**

Making the Waste Management Phoenix Open what it is today takes not only resources, but also commitment from all community stakeholders. Communication and interaction between stakeholders, from managing traffic congestion to ensuring everyone who wants to is able to participate and enjoy the event, is key to positive social impacts and also highlighted in this report.
The table below outlines all WMPO emissions sources and associated GHGs from 2010 through 2018.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane heat, cooking</td>
<td>52</td>
<td>82</td>
<td>81</td>
<td>37</td>
<td>42</td>
<td>60</td>
<td>95</td>
<td>66</td>
<td>44</td>
</tr>
<tr>
<td>Diesel shuttle buses</td>
<td>48</td>
<td>64</td>
<td>53</td>
<td>29</td>
<td>28</td>
<td>27</td>
<td>25</td>
<td>24</td>
<td>18</td>
</tr>
<tr>
<td>Biodiesel shuttle buses</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>6.4</td>
<td>7.0</td>
<td>11</td>
<td>7.6</td>
<td>8.2</td>
</tr>
<tr>
<td>Gasoline sponsor cars</td>
<td>27</td>
<td>21</td>
<td>21</td>
<td>20</td>
<td>17</td>
<td>16</td>
<td>10</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>Diesel sponsor cars</td>
<td>-</td>
<td>-</td>
<td>0.2</td>
<td>0.4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diesel VIP shuttles</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4.3</td>
<td>1.5</td>
</tr>
<tr>
<td>Diesel waste hauling/portable toilet service</td>
<td>23</td>
<td>12</td>
<td>17</td>
<td>17</td>
<td>27</td>
<td>23</td>
<td>21</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td>CNG portable toilet service</td>
<td>-</td>
<td>14</td>
<td>3.7</td>
<td>5.6</td>
<td>9.9</td>
<td>32</td>
<td>18</td>
<td>26</td>
<td>1.6</td>
</tr>
<tr>
<td>Diesel generators</td>
<td>33</td>
<td>47</td>
<td>57</td>
<td>39</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Biodiesel generators</td>
<td>5.0</td>
<td>-</td>
<td>10</td>
<td>28</td>
<td>24</td>
<td>17</td>
<td>31</td>
<td>53</td>
<td>50</td>
</tr>
<tr>
<td>Biodiesel refrigerated trailers</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>Electricity conventional energy</td>
<td>76</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Electricity renewable energy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

| WASTE END-OF-LIFE MANAGEMENT2 |        |        |        |        |        |        |        |        |        |
| Compost food scraps, food/beverage materials, wood | -2.0    | 28     | 54     | 74     | 67     | 67     | 82     | 93     | -17    |
| Waste-to-energy non-recyclable fiber and plastics, MRF residue | -      | -0.2   | -3     | -0.3   | -0.3   | -0.3   | -0.3   | 20     | -0.5   |
| Donation scrim, carpet, turf, programs | -      | -      | -      | -      | -20    | -33    | -29    | -76    |        |
| Donation food                    | -      | -      | -31    | -18    | -58    | -35    | -45    | -47    |        |

TOTAL GREENHOUSE GAS EMISSIONS3

-32   -167   -11   18   96   90   49   131  328

1 MtCO2e is metric tons of carbon dioxide equivalent.
2 CNG volume is provided in gas gallon equivalent.
3 The World Resources Institute GHG Protocol, Climate Registry General Reporting Protocol, and EPA WARM model were used to calculate GHG emissions.

The Waste Management Phoenix Open operates under ISO20121 standard for sustainable events management, which defines the requirements to ensure an enduring and balanced approach to economic activity, environmental responsibility and social progress relating to events.
For years, the WMPO has invited third party certifiers to evaluate our environmental claims. In 2018, we maintained our Evergreen Inspire status with the Council for Responsible Sport and achieved our second Golf Environment Organization certification. The Waste Management Phoenix Open was the first PGA TOUR tournament to achieve both certifications and remains the largest event ever to achieve this level of recognition.

For the sixth straight year, UL also provided a third-party verification of the event’s waste diversion. UL again verified our efforts, awarding the WMPO “100% landfill diversion rate with 9% incineration with energy recovery.” The Waste Management Phoenix Open maintained its status as the largest verified zero waste event in the world.
ENERGY
Since becoming the title sponsor of the Waste Management Phoenix Open, renewable energy practices have avoided 844 MtCO2e, which corresponds to taking 181 cars off the road for one year or recycling an additional 294 tons of waste. For the last 8 years, the tournament purchased 100% renewable energy from Arizona Public Service. The sun continued to be a great source of power for compactors and some light fixtures used around the course.

Generators that could not be plugged into the grid ran on biodiesel, and over one-third of ProEm's attendee shuttle buses ran on biodiesel. Most WM trucks used to haul waste have been powered by compressed natural gas (CNG) since 2011, emitting less than half the GHGs of diesel.

The Waste Management Phoenix Open is a carbon neutral event. WM offset all GHG emissions from WMPO operations (204 MtCO2e), professional and amateur player travel (58 MtCO2e), vendor travel (107 MtCO2e), and volunteer travel (212 MtCO2e). In total, WM offset 720 MtCO2e through Envirofit International’s clean cookstove program with important economic, social and environmental impacts, supporting ten of the UN Sustainable Development Goals.

UN SUSTAINABLE DEVELOPMENT GOALS ALIGNED WITH ENVIROFIT CLEAN COOKSTOVE PROGRAM
WATER

The Waste Management Phoenix Open is a water positive event. The WMPO implements conservation measures to ensure that water is used responsibly and limits pressures on the municipal water supply. Hand-washing stations used hand sanitizer instead of water, and in 2018 WM captured an estimated 6,353 gallons of grey water. Since 2011, approximately 37,787 gallons of water from cooking and cleaning have been reused in the portable toilets.

2018 marked the fourth year of the Waste Management Phoenix Open Water Campaign. Working with Bonneville Environmental Foundation as a Change the Course sponsor, and teaming up with Kohler, M Culinary and The Thunderbirds, WM restored 75 million gallons of water to the Verde River in Arizona, bringing the four-year total to over 236 million gallons restored.
ZERO WASTE CHALLENGE

WM launched the Zero Waste Challenge in 2012 to control event materials and educate attendees on the impact they can have on course and at home. Since then, there have been no trash bins on course, only recycle and compost bins. In 2018, we again diverted 100% of all tournament materials from the landfill! What’s the value of zero? In all, our waste management practices have avoided the equivalent of removing 513 cars off the road for one year.

In 2018, WM continued utilizing three Zero Waste Stations. The repurposed 40-cubic yard roll-off dumpsters transformed into eye-catching kiosks where fans can play an interactive game. Volunteers posted at our Zero Waste Stations used this game to educate attendees about proper disposal on course and at home, highlighting WM’s Recycle Often. Recycled Right.SM campaign that seeks to improve residential and commercial diversion.

All materials brought on site must be locally reused, recycled, or composted. Vendors agree to this in the contract with the Thunderbirds.

SOME RESULTS

- 66% of 2018 signage was reused from previous tournaments
- 87% of the 2018 signage is being stored for potential reuse
- Daily tickets, pairing sheets, parking passes and parking maps were printed on paper that uses 30% post-consumer recycled content
- Over 90% of paper badges are printed on paper made of 50% total recovered fiber
- All paper materials were Forest Stewardship Council Certified
- Volunteer badges were made from recyclable #5 plastic
- The WM logo water feature used 144,000 golf balls, reused every year since 2012
- Vendors donated 24,620 pounds of unused, perishable food to local organizations
- WMPO remains the largest verified zero waste event in the world
SOCIAL IMPACTS
The WMPO has a positive social impact on the local community with programs throughout the week.

Youth, differently-abled individuals, and hometown heroes

The Standard Bearer Program promotes youth involvement, inviting students under 18 to carry the player score signs and walk around with a grouping – up to seven miles in one round! In 2018, over 318 students participated. The R.S. Hoyt Jr. Family Foundation Dream Day allows youth to experience golf through a junior clinic, motivational speaker and trick shot show. In 2018, a record of more than 550 students participated from five schools from five school districts. Differently-abled and disabled individuals are encouraged to participate in tournament activities through the CBS Outdoor Special Olympics Open. The Waste Management Phoenix Open promotes positive community stakeholder engagement, including free event entry to all law enforcement, firefighters, emergency services, active, reserve and retired military personnel, and family members or one accompanying guest. The Birdies for the Brave Patriots’ Outpost has free food and drinks for all military personnel and their guests, along with a great view of the 18th Hole.
CHARITY

The WMPO generated over $12.2 million for charity in 2018, making donations to more than 200 different organizations throughout the year and used to fund additional improvements to the local community. Saturday at the WMPO is “Green Out Day” - for every person who wears green, the Thunderbirds donate “green.” A total of $105,000 was raised for three environmental groups. The Thunderbirds also donated more than $100,000 to charities chosen by participants in the 2018 Phoenix Suns Charities Shot at Glory. The WMPO provides free booth space for one non-profit organization daily in the WMPO Expo Booth through Birdies for Charity.

More information on benefiting charities can be found at the Thunderbirds’ WMPO website.
**TRANSPARENT REPORTING**

Council for Responsible Sport - Evergreen Inspire  
Golf Environment Organization - GEO Certified  
UL - “Zero Waste to Landfill Operations with 9% incineration with energy recovery” validation

**WASTE DIVERSION**

100% materials diverted from landfill  
56% recycled  
26% composted  
9% waste-to-energy  
9% donated

**WATER CONSERVATION**

- **RESTORED**: 75 M gallons of water  
- **REUSED**: 6,353 gallons of greywater

**RENEWABLE ENERGY & GHG OFFSETS**

Offset 720 metric tons of CO2 equivalent with Envirofit International  
100% of electricity provided by renewable energy

**REUSE & DONATIONS**

- **DONATED**: 24,620 pounds of unused food to local non-profits  
- **REUSED**: 51,816 square feet of signage  
- **REUSED**: 140,000 golf balls in WM’s water feature

**COMMUNITY IMPACT**

**THE 2018 WASTE MANAGEMENT PHOENIX OPEN GENERATED**

$12.2M in charitable donations  
Fans shared their passion for golf and green practices using  
#GREENESTSHOW

**GREEN OUT DAY RAISED**

$105K for local charities thanks to fans and players sporting green

**FREE TOURNAMENT ACCESS**

12,000+ military personnel with their guests to the Patriot’s Outpost on the 18th Hole

**STANDARD BEARER PROGRAM | FIRST TEE DREAM DAY | CBS OUTDOOR SPECIAL OLYMPICS OPEN**
THUNDERBIRDS

Organizing the WMPO in the Valley of the Sun since 1937, the mission of the Thunderbirds 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 $134 million through their WMPO activities. For more information on the governance of The Thunderbirds, please consult the WMPhoenixOpen website, the WMPhoenixOpen Sustainability Page, and Thunderbird fact sheet.

WASTE MANAGEMENT

Based in Houston, Texas, Waste Management is the leading provider of comprehensive environmental services in North America. In partnership with the PGA TOUR and The Thunderbirds, Waste Management is dedicated to making the Waste Management Phoenix Open the greenest tournament on the PGA TOUR. For more information on Waste Management’s corporate sustainability efforts and WMPO activities, please visit ThinkGreen.com.

TPC SCOTTSDALE

Sixteen acres on the 400-acre property of TPC Scottsdale have been devoted to naturalized habitat areas, and 200 acres are desert vegetation and landscaping in the McDowell foothills of the Sonoran. TPC Scottsdale is a 36-hole resort and public golf facility, has been part of Audubon International’s Cooperative Sanctuary Program since 1995. This year, TPC Scottsdale is also completing its first Golf Environmental Organization’s sustainable golf course certification.

FORUM

Since 2011, WM has organized a Sustainability Forum, bringing together a mix of experts, customers, government employees, non-government organizations and businesses to contribute to an open-minded dialogue around sustainability principles, best management practices and bottom-line results. With a theme of “Big Ideas. Bold Action. Better World,” the 2018 Forum focused on how to rethink current environmental goals and collectively serve the opportunity to chart a bigger, broader, bolder course forward. Here are the highlights!
CONCLUSION

In 2018, 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 tracking and reporting the tournament’s greenhouse gas emissions, making good use of the materials generated, prioritizing renewable energy and alternative energy, as well as conserving water on course and restoring water to the Southwest region, we will play our part to leave the planet in better shape than we received it.