

GREEN
SPORTS
ALLIANCE



Paper Use

PLAYBOOK

A resource for professional and collegiate sports teams, leagues, and venues to improve their environmental performance related to paper use

This playbook was sponsored by



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PLAYBOOK



AUTHORS

Prepared by the Green Sports Alliance, the Environmental Paper Network, and the Forest Stewardship Council, this Paper Playbook provides a resource for professional and collegiate sports teams, leagues and venues to improve their environmental performance related to paper use.

The Green Sports Alliance leverages the cultural and market influence of sports to promote healthy, sustainable communities where people live and play. The Alliance inspires professional sports leagues, sports governing bodies, colleges, teams, venues, their partners and millions of fans to embrace renewable energy, healthy food, recycling, water efficiency, safer chemicals and other environmentally preferable practices. Visit greensportsalliance.org for more information.

The Environmental Paper Network (EPN) is a collaborative project of organizations across the globe working to protect forests, climate, water and communities through more sustainable production and consumption of pulp and paper products. EPN was created in 2002 to help our member organizations catalyze significant market shifts to responsible supply chains and forestry practices. Our collective results include the protection of millions of acres of endangered forests and growing numbers of large companies developing sustainable paper and forest conservation policies. For more information visit environmentalpaper.org.

The Forest Stewardship Council (FSC), the world's most trusted forest certification system, is an independent nonprofit organization that promotes environmentally sound, socially beneficial, and economically prosperous management of forests. FSC was created in 1993 to set the standards by which forests are certified, offering assurance to consumers and businesses that the wood products they buy originate from well-managed forests. More than 5,000 companies and nearly 170 million acres of forestland are certified under FSC in the United States and Canada. For more information visit onesimpleaction.fsc.org.

Acknowledgments

The authors, the Green Sports Alliance, the Environmental Paper Network, and the Forest Stewardship Council thank the following people for their contributions to this Playbook:

Brad Kahn, Communications Director of the Forest Stewardship Council, Joshua Martin, Director of the Environmental Paper Network - North America, Dania Gutierrez, Kelly Perso, Keri Johns, Kimberly-Clark, Green Seal, America's Cup, Marriott International, The Walt Disney Company, The New England Patriots, the International Olympic Committee, the Portland Trail Blazers, Moda Center, and NatureWorks.

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PLAYBOOK

INTRODUCTION

This Playbook is designed to help your sports and entertainment facility operations achieve efficient and responsible paper use. It provides a game plan for leadership actions for sustainability to reduce your organization's impact on the environment and the world's declining forests.

An average event from conception to cleanup consumes large volumes of paper materials; marketing, ticketing, concessions, programs, sanitary needs, souvenirs, and more overflow trash and recycling bins after each event. Paper is critical to operations and the entertainment of your guests, but what is in your paper and how it lives out its life cycle matters.

Evaluation of paper consumption, procurement, and waste management uncovers abundant opportunities for sustainability leadership, immersive fan involvement, and streamlined operations.

Some categories of paper use are in decline, but overall paper consumption continues to rise globally, putting more and more pressure on the world's forests and plantations to supply the fiber. This enormous demand and a lack of adequate safeguards are leading to risks in the paper supply chain for deforestation, forest degradation, and social conflict.

Responsible solutions exist. By using this Playbook to identify where your organization can improve and how it can move forward in its sustainability efforts, the organization and the forests win. The sports sector has an outstanding opportunity through responsible paper use to support climate change solutions, good forestry, and benefits for local people while providing a remarkable positive impact on the venue and the fans.



Forests provide the air we breathe and the water we drink.

1

large tree can provide a day's supply of oxygen for up to four people.¹

50%

of all species – and 80 percent of all land-based species – live in forests.

300M

people around the world live in forests.

1.6B

people depend on forests for their livelihoods.²

¹ <https://www.arboday.org/Trees/treefacts/>

² <https://www.worldwildlife.org/habitats/forest-habitat>

³ <https://www.worldwildlife.org/habitats/forest-habitat>

WHY FORESTS MATTER³

Covering roughly one-third of the Earth's land area, it is no exaggeration to say that forests make life possible.

In terms of climate change, there is no solution without healthy functioning forest ecosystems. Forests soak up and store massive quantities of carbon as they grow. It is estimated that forests store nearly 900 gigatons of carbon, 23 times the total amount emitted annually by human activities. At the same time, deforestation and forest degradation cause more carbon emissions than the entire transportation sector of the world, 10-15 percent of all emissions. Paper purchasers will continue to play a critical role in protecting the environment and climate and including recycled content in printing and writing paper – and all other grades – reduces energy, water, chemical use, pollution, greenhouse gases and solid waste, as well as demand for trees.

If we could

stop all deforestation and restore forests to healthy conditions, we could offset up to one-third of all carbon emissions.



Yet, every 1 minute

the world is losing...

48 football fields

of forest, according to research conducted by the World Wildlife Fund.



The pressure

on forests grows as demand for forest-based products continues to increase.

Forests are essential for life on earth.

They provide habitat for a vast array of plants and animals — many of which are still undiscovered - protect our drinking water, create the oxygen we breathe, and supply raw materials for products we use every day. Forests inspire wonder and provide places for recreation, which is what brings together organizations, teams, leagues, and fans.



Forest as a Provider



80%

Forests are home to 80% of terrestrial biodiversity.¹



1.6B

1.6 billion depend on forests for their livelihoods.²



75%

Forested watersheds and wetlands supply 75% of the world's accessible fresh water.³



500M/170M

Nearly 500M acres of forest globally and nearly 170M acres in the US and Canada are Forest Stewardship Council certified.⁴



129M

Between 1990 and 2015, the world lost some 129M hectares of forest, an area the size of South Africa.⁵

1 <https://www.worldwildlife.org/habitats/forest-habitat>

2 <https://www.worldwildlife.org/habitats/forest-habitat>

3 <http://www.worldbank.org/en/news/feature/2016/03/18/why-forests-are-key-to-climate-water-health-and-livelihoods>

4 <https://ic.fsc.org/en/facts-and-figures>

5 <http://www.fao.org/news/story/en/item/326911/icode/>



Forest as a Supplier



2B+

The United States publishes more than 2 billion books, 350 million magazines, and 24 billion newspapers each year.⁶



5-7

Paper fibers can be recycled 5 to 7 times.⁷



50%

The United States currently recycles only 50% of copy and office paper.⁸



31%

Producing recycled pulp over 100% virgin fiber paper reduces overall energy use by 31% on average.⁹



33%

Papermaking materials in the US come from recycled paper (33%), whole trees and other plants (33%) and wood chips and scraps from sawmills (33%).¹⁰

6 <https://archive.epa.gov/wastes/conserve/materials/paper/web/html/faqs.html>

7 <https://archive.epa.gov/wastes/conserve/materials/paper/web/html/papermaking.html>

8 <http://environmentalpaper.org/wp-content/uploads/2017/08/recovered-office-paper.pdf>

9 <https://www.greenamerica.org/save-trees/why-recycled-paper>

10 <https://archive.epa.gov/wastes/conserve/materials/paper/web/html/faqs.html>



The Human Connection



7 trees

The average American uses seven trees a year in paper, wood, and other products made from trees. This amounts to about 2,000,000,000 trees per year!¹¹



258B

Global paper cup consumption reached 258 billion units in 2016 and is expected to reach 274 billion by 2022.¹²



121.25lbs

The global average paper use per person per year: 121.25 pounds per person per year. North American consumption is 473.99 pounds, EU is 324.08 pounds per capita, and China's per capita consumption is 167.55 pounds.¹³



165 gallons

Every ton of paper recycled can save the energy equivalent of 165 gallons of gasoline.¹⁴



22.4M

22,400,000 tons of paper end up in the landfill each year, the equivalent of 1,866,667 fully loaded, 12 ton capacity garbage trucks.¹⁵

11 <https://www.usi.edu/recycle/paper-recycling-facts/>

12 <http://www.expertmarketresearch.com/pressrelease/global-paper-cups-market>

13 http://environmentalpaper.org/wp-content/uploads/2018/04/StateOfTheGlobalPaperIndustry2018_FullReport-Final.pdf

14 http://large.stanford.edu/courses/2014/ph240/fujimoto2/docs/2012_msw_fs.pdf

15 <http://paperrecycles.org/statistics/paper-recovery-landfill>

HOW TO USE THIS PLAYBOOK

This Playbook is designed to make developing a sustainable paper use program or policy easy. The Playbook provides a list of useful “plays” that help organizations choose products that are not only better for the environment, but take into consideration unique facility and regional needs, product availability, and cost. This Playbook also provides recommendations and case studies that promote source reduction and effective waste management when it comes to paper use.

Play #1: Eliminate Wasteful Use and Use Paper Efficiently

Eliminating waste and maximizing the efficiency of movement has long been a strategy for increasing a player’s performance. The same idea works for reducing your environmental impacts associated with paper – eliminate the wasteful use and efficiently use what is essential for maximum effect.

Combining these tenets is beneficial for forests, the climate, and public health. Rethinking how you use paper can also benefit the bottom line by reducing the purchase costs of not only paper, but also items like printer ink, storage space, filing equipment, and postage costs. Follow the tips below to reduce your paper use and visit [the Environmental Paper Network’s website](#) for more detailed information and tools to help you use paper more efficiently.

Efficiency Action Steps:

1

Determine the different ways your organization uses paper.

2

Measure and monitor the volumes of paper for different uses.

3

Assess the importance of the different uses of paper to your organization and identify the “high volume, low utility” paper uses.

4

Make a plan and set goals to eliminate or drastically reduce “high volume, low utility” paper and re-think all other low utility paper end uses.



Tips to Reduce Paper Waste at Venues:

- Select napkin and paper towel dispensers that allow only one at a time, as opposed to an open stack of napkins or an endless paper towel roll. Many vendors can provide options for dispensers designed in this way.
- Deploy signage encouraging and reminding customers to join you in achieving the positive benefits of less waste. Consider contests or other fun guest engagement that encourages behavior minimizing paper waste.
- Sell as many souvenirs and store items “naked” and without packaging if possible.
- Set all office printers to default to double-sided printing, and smaller default margins in company provided word processing software.
- Transition to digital ticketing, and digital programs to the extent possible.
- Explore other innovative technologies, such as signage with QR codes for guests to access more information and services instead of high volume paper handouts.
- Eliminate receipts for small transactions and/or train staff to ask guests if they need one before printing.

Motivate your staff and your guests to actively participate in the organization’s goals for paper use reduction and smarter paper procurement by using the Environmental Paper Network’s **Paper Calculator life cycle estimation tool**. This innovative tool calculates the number of resources needed to produce your baseline paper use and measures the environmental savings achieved by your reduction efforts. It produces easy to understand reports and charts for sharing with the staff team or on the video screen at your venue to include guests in celebrating the results.

Venue Paper Use

Front of house venue

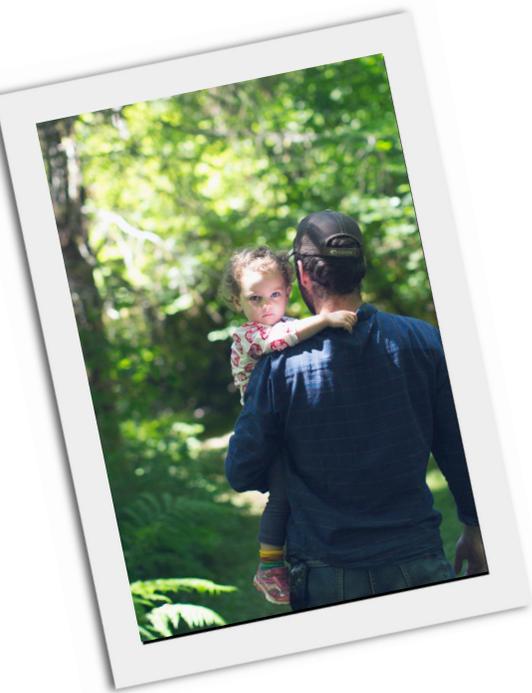


- paper tickets
- programs
- paper napkins
- plates
- food serviceware
- paper towels
- toilet paper

Back of house offices

- printing paper
- envelopes
- file folders
- boxes
- packaging material





Play #2: Work with Your Stakeholders

Working toward responsible and sustainable paper use is a team effort, and your current vendors, suppliers, and sponsors are significant components of your sustainability team. Initiate discussion with them about your organization's move to use your paper resources more efficiently and to use more sustainable options for your paper product. Use their expertise and knowledge of their industry to increase your sustainability efforts.

Maybe your venue or team has a sponsor who supplies paper products. Let them know your venue is looking for opportunities to enhance the relationship and one of the venue's goals is to source responsible paper products. Ask them to help you reach your sourcing goals and inquire about their options. You now have engagement from the sponsor in your goal and provided an incentive to go greener.

Ask your janitorial services and products company about options for purchasing responsibly sourced paper towels and tissue paper. Go a step further and ask which janitorial staff procedures promote source reduction and waste diversion. Share with them the ideas and options for Sanitary Paper Products Implementation and work with them to add your choices to the mix.

Sanitary Paper Products Implementation

Reduce Consumption (and Save Money)

Reducing paper consumption is ecologically and economically valuable. Consider using paper hand towels or toilet tissue on large rolls. Using large rolls and dispensers that hold multiple rolls can reduce overall paper consumption by 30 percent and minimize restrooms left without sanitary paper during busy events. Coreless options also reduce waste and increase the linear feet of product to ensure that paper towels and toilet tissue doesn't run out.

Quality Matters

Ecologically preferable paper, with high post-consumer recycled content and/or certified by the Forest Stewardship Council, should be used in all areas of your venue, suites as well as concourse restrooms and in offices. Product Selection Standards; "Bronze, Silver, and Gold".

Select products that meet one or more of the following requirements:

- **GOLD:** 100 percent post-consumer recycled content and processed chlorine-free (PCF) bleaching. This may include products certified by Green Seal¹ or EcoLogo/UL². The FSC Recycled label offers a way to verify recycled content.
- **SILVER:** Products that meet EPA's Comprehensive Procurement Guidelines³ for tissue products made with 100 percent total recycled content and a minimum amount of post-consumer recycled content including 40 percent for paper hand towels, 20 percent for toilet tissue, 30 percent for napkins, and 40 percent for wipes.

¹ Green Seal Standards, Sanitary Paper Products, <http://www.greenaseal.org/GreenBusiness/Standards.aspx?vid=ViewStandardDetail&cid=11&sid=25>

² EcoLogo, Sanitary Paper Products, <http://industries.ul.com/environment/certificationvalidation-marks/ecologo-product-certification#cleaning>

³ EPA's Comprehensive Procurement Guidelines for Paper Products, <https://www.epa.gov/smm/comprehensive-procurement-guidelines-paper-and-paper-products>

- **BRONZE:** FSC certification for fiber procurement. FSC certification is important for ensuring virgin fiber content comes from well-managed forests (and for verifying sources of recycled fiber); however, you should prioritize purchasing janitorial paper products made from 100 percent recycled content, not from fiber sourced from forests.

Dispensing Options

Prefer paper hand towel dispensers that are “hands-free”, as compared to those that use mechanical levers or cranks because the latter can transfer harmful microorganisms from one user to the next. Dispensers where the towel is simply pulled by hand are preferable to electric or battery powered paper towel dispensers as they work equally as well and eliminate the electrical components and sensors reducing the environmental impacts associated with the manufacturing and disposal of these components. A possible caveat to this is when addressing ADA issues.



Green Seal

Transforming the Economy for a Healthier, Greener World

Green Seal® is a leading ecolabel program in the US. Over the last thirty years, Green Seal's team of experts has developed more than 40 life-cycle-based standards and certified thousands of products and services. Green Seal-certified products are chosen by stadiums, schools, restaurants, and government facilities because they are guaranteed to be the healthiest, greenest options available on today's market. Green Seal certifies more than 450 product types, including paper, cleaning products, paints and coatings, windows, foodservice packaging, cleaning services, hotels, and restaurants. All Green Seal standards are available for free download on our website at greenseal.org.

Green Seal certifies the following types of paper products:

- Bathroom tissue, facial tissue, paper towels, napkins, placemats (Sanitary Paper, GS-1 Standard)
- Printing and writing paper, including signs, copy paper, cover paper, sketching paper, file folders, uncoated groundwood papers, gift wrapping paper, coated printing paper for design projects (Paper, GS-7, and GS-10)
- Paper used in food preparation and foodservice packaging products including rigid containers and single-use plates and bowls (Food Preparation and Packaging, GS-18 and GS-35)

Requirements include fiber type, recycled content, compostability and biodegradability, prohibitions on carcinogens, mutagens, reproductive toxins, and optical brighteners, manufacturing requirements, reduced packaging.



Play #3: Choose Responsibly

Responsible sourcing of forest products is like building a team roster; one size does not fit all, and multiple options exist. With the full range of products and uses of paper, considerations may also vary. What works in office paper may not be the best choice for food service, for example. Moreover, your organization may have specific values or goals that it is trying to achieve that are a priority. Below are considerations for common product types in sports and entertainment venue operations.

Fiber Choices

This section explores the benefits of using Forest Stewardship Council (FSC) certified and recycled products, as well as the use of products made from alternative fiber sources.

Recycled Materials

Recycled paper is made from the paper collected from residential, office, and commercial recycling programs. Post-consumer recycled fiber is from paper that has been delivered all the way to a consumer and then collected through recycling and made into new products. Pre-consumer recycled fiber is from material such as floor scraps from a paper converting facility, or from unsold magazines, which never reached a consumer and are commonly recycled. Choosing a high percentage of post-consumer recycled content helps to create market demand and greater value for the fiber and increases collection and landfill avoidance.

Recycling old paper into new paper minimizes solid waste, reduces pressure on forests and recycles resources into new products instead of wasting them. On average, it takes approximately 24 trees to produce one ton (40 cases) of virgin paper. The world uses approximately 15 billion trees⁵ each year to produce paper and paper products, so using recycled content can reduce pressure on forests and increase the efficiency of forest-based materials. Because virgin fiber can typically be used more than one time (with some exceptions), it makes sense to recycle materials and use them again. The United States Environmental Protection Agency has recognized the benefits of recycled paper and developed procurement guidelines for federal purchasing that mandate minimum levels of post-consumer fiber for different product types.

If recycled paper makes you visualize print jams or quality issues, it's time to put this myth to rest. It has been long proven that recycled papers can have the same quality as papers made without recycled content and show high performance in today's photocopiers and printers.

The recovered fibers in recycled paper will eventually shorten and wash out over multiple lives in products. Therefore, choosing virgin fiber from FSC certified forests and alternatives such as agricultural residues should complement efforts to maximize recycled content. Today, less than 10 percent of overall printing and office paper fibers come from recycled



Recycled paper has significant environmental benefits.

For example, producing recycled pulp for printing and writing papers uses 33% less energy overall, on average, than mills making virgin chemical pulp for the same products and emits 37% less greenhouse gas emissions.⁴ Recycled materials typically also generate less wastewater and air and water pollution. It diverts useful material from the landfill where it otherwise decomposes, creating climate warming methane gas. And numerous studies have demonstrated recycling's job creation benefits in our communities.

⁴ <http://environmentalpaper.org/wp-content/uploads/2017/09/Paperwork-1.pdf>

⁵ <http://time.com/4019277/trees-humans-deforestation/>

sources, so there is room for recycled paper to grow, even while recognizing the ongoing need for virgin fiber.

Furthermore, the only North American mills that use totally chlorine-free bleaching methods are some (but not all) of the recycling mills. These use combinations of oxygen, ozone and hydrogen peroxide, in a process referred to as Processed Chlorine-Free (PCF). Many of the 100% recycled papers are PCF, indicated on the label.

To ensure that your organization is “closing the loop,” in addition to purchasing recycled paper products, always recycle all the paper you can. Right now, Americans do a decent job of collecting cardboard boxes and newsprint, but we collect only about half the copy and office paper available.⁶



Learn More:

Recycled Paperboard Alliance Conversion Guide:
<https://www.rpa100.com/why/conversion-guide/>

6 <http://www.cultivatingcapital.com/wp-content/uploads/Paper-facts.pdf>

How to Choose Responsibly Following Green Cleaning Sanitary Paper Specifications

Paper hand towels should meet one of the following requirements:

- EPA Comprehensive Procurement Guidelines for janitorial paper (minimum of 40% post-consumer recycled content for paper hand towels)
- Green Seal GS-01, for tissue paper, paper towels and napkins;
- Underwriters Labs UL175 or EcoLogo CCD-086, for hand towels;
- FSC certification for fiber procurement

Toilet tissue should meet one of the following requirements:

- EPA Comprehensive Procurement Guidelines for janitorial paper (minimum of 20% post-consumer recycled content for toilet tissue)
- Green Seal GS-01, for tissue paper, paper towels and napkins;
- Underwriters Labs UL175 or EcoLogo CCD-082, for toilet tissue;
- FSC certification for fiber procurement

Reporting on paper documentation should be provided on individual product certifications or other technical data to demonstrate compliance with these requirements. A calculation of the fraction of covered materials purchased that meet one or more of the specified criteria (on a cost basis) should be provided each month.



Using FSC certified products

Using FSC certified products sends a demand signal back to certified landowners, showing them that the market values their responsible forest management. Because most managed forestlands in the US are privately owned, this demand helps landowners keep their forests as forests. If demand falls for forest products, these lands could be converted to other uses, such as farming or real estate development.

Forest Stewardship Council

The Forest Stewardship Council is an international non-governmental organization that helps consumers and companies identify and purchase products from responsibly managed forests.

FSC conserves wildlife habitat, protects clean water and respects the rights of Native people and local communities on 170 million acres of forestland in the US and Canada, and nearly 500 million acres worldwide. FSC also operates a chain-of-custody standard along the supply chain from the forest to the end user.

To advance its mission of protecting forests and promoting forest conservation, FSC operates a third-party certification system that sets standards to define responsible forest management. Landowners and companies are independently verified to determine whether they meet the standards and if they do, they are certified. This allows certified companies to communicate a commitment to protect forests on their products, websites and invoices.

FSC operates around the world, and currently, more than 32,000 companies are certified, offering products including hand towels, toilet paper, paper cups, paper plates, compostable utensils, office paper, packaging, and a wide variety of building materials such as lumber, plywood, windows, and doors.

Considered the gold standard for responsible forest management, FSC goes well beyond legal requirements alone to set rigorous environmental and social standards, including the following:

- Prohibits deforestation, including conversion of natural forests to plantations
- Protects high conservation value forests, including rare old growth and intact-forest landscapes
- Protects water quality
- Restricts the use of highly hazardous chemicals
- Limits clearcutting to protect forest ecology
- Protects habitat for rare, threatened and endangered species
- Respects the rights of Indigenous Peoples and local communities, including a requirement to solicit free, prior and informed consent from Indigenous communities
- Prohibits use of genetically modified organisms

Ensuring that your paper's virgin fibers are certified is also key in shrinking the environmental footprint of your paper. Not all forest management is the same, however. For example, work by conservation group Ecotrust in Washington State found that management to Forest Stewardship Council standards results in significantly more carbon being stored in the forest, compared to conventional practices.



The Forest Stewardship Council

The Forest Stewardship Council manages three labels: FSC RECYCLED, FSC MIX, and FSC 100%.

The **FSC RECYCLED** label means all the wood or fiber in the product comes from reclaimed (re-used) material.

The **FSC MIX** label means the wood or fiber within the product is from FSC-certified material, recycled material, or controlled wood. To bear the FSC label, at least 70 percent of inputs in an FSC MIX product must be from FSC virgin or recycled sources. It is possible to have an FSC MIX product that also bears a recycled claim, such as 30% recycled fiber.

The **FSC 100%** label means that the wood or fiber within the product comes entirely from FSC-certified forests. Research suggests one-third of all FSC-certified products – typically solid wood products such as furniture or building materials – are FSC 100%.

FSC MIX is the most common label on paper products, followed by FSC RECYCLED.

Alternative Natural Fibers

Diversifying the basket of fibers used to make paper can help reduce over-exploitation of forests and meet the growing paper demand of our global society. An increasing number of paper products utilize alternative natural fibers, including agricultural residues such as sugarcane bagasse and wheat straw, or crops such as bamboo.

These products can provide a responsible option as part of your responsible paper purchasing game plan. They may be a particularly good option for food service disposables/compostables, tissue products, and packaging applications at this time. There are a growing number of these products available today, and many are listed on the **EcoPaper Database**, an online resource from Canopy and the Environmental Paper Network designating the most environmentally responsible paper products available in North America. Thanks to increasing demand from customers, the number of products is escalating, and North American supply chains are being developed to deliver more and more viable options at competitive scale and reduce overseas transport impacts.

When considering these options, remember that the term “tree-free” is not a sufficient standard for sustainability, and some products may contain a combination of alternative natural fibers and virgin wood fiber from unknown or uncertified sources. Share your values and ask questions of suppliers to learn about the origin of these products. If the product contains any virgin wood fiber, it should also be certified by the Forest Stewardship Council.



Learn More:

- Follow the EPN's “Paper Steps” for choosing the best environmental paper available. <https://environmentalpaper.org/the-paper-steps/>
- Find environmentally superior papers in the EcoPaper Database. <http://epd.canopyplanet.org>
- Ensure your paper is whitened without chlorine chemistries.
- Calculate the impacts of your paper usage and measure sustainability progress using EPN's Paper Calculator. <http://www.papercalculator.org>
- Work with responsible printers to choose coatings and inks that reduce environmental impacts. Learn more from the Sustainable Green Purchasing Partnership at <http://sgpppartnership.org/>
- A ranking of the environmentally responsible printers in North America is available in the Canopy BlueLine Report, found at <http://blueline.canopyplanet.org/>

Solid Wood Products

While the emphasis of this playbook is on paper products, similar issues apply to solid wood — such as furniture, construction materials, staging or sports courts — as well.

Some notable sports examples including the use of FSC-certified solid wood products:

- The Velodromes at both the Rio 2016 and London 2012 Olympic Games
- The Golden 1 Center in Sacramento, including the basketball court
- Levi's Stadium in Santa Clara, home of the San Francisco 49ers
- NCAA Final Four men's and women's basketball courts
- Burton snowboards
- 2013 America's Cup activation spaces in San Francisco
- Shade canopy at Sonoma Raceway

While architects and builders are typically hired to develop new sports facilities, it is critical for owners, teams, venues and leagues to clearly state their environmental preferences. Use of FSC-certified products can help earn points in the US Green Building Council's LEED program (as well as other green building programs, such as the Living Building Challenge), which is an added incentive for use. LEED is one of the largest and most-respected green building programs in the world, and it is increasingly used in development of sports arenas, including the Mercedes Benz Arena in Atlanta and the Golden 1 Center in Sacramento, both of which earned the highest level, LEED Platinum certifications. LEED certification levels are based on the number of credits a project earns, for actions including energy and water conservation, less-toxic materials use, recycling and more. Use of FSC-certified wood products can also earn a team credits in LEED, as they did in the Atlanta and Sacramento projects above. In the latest version, if 25 percent of installed materials come from one of several environmentally preferable sources – including FSC certified sources – the team can earn a credit. For example, use of FSC certified wood paneling, lagging, flooring, doors, or counters could be considered in a LEED project.

In addition to building materials, many major office furniture companies offer FSC-certified options.

Even FSC-certified baseball and cricket bats, basketball courts, skis, surfboards, snowboards and wetsuits can be found.

For more information please visit <https://advocate.us.fsc.org/construction/>



Sonoma Raceway and Humboldt Redwood Company Partner to Create Sustainable and Fan Favorite Seating Areas



Through its partnership with Humboldt Redwood Company, Sonoma Raceway fans can enjoy the on-track action or take a break in the shade during its summer major events including the Toyota/Save Mart 350 Monster Energy NASCAR Cup Series and the Grand Prix of Sonoma Verizon IndyCar Series season finale.

Sonoma Raceway's sustainability efforts have kept the wine-country facility at the front of the pack among its motorsports entertainment facilities peers. The Northern California facility is dedicated to recycling, upcycling, solar energy and mowing green with more than 3,000 sheep that help with land maintenance throughout the property, but the raceway's most visible sustainability effort delivers shade and comfort for fans on race day.

In 2015, Sonoma Raceway and Humboldt Redwood Company, a leader in Forest Stewardship Council® (FSC® C005200) certified redwood timbers, decking, landscaping and dimensional products, joined forces to bring shade and comfort to race fans with the construction of the "Real. Strong. Humboldt Redwood Deck" above Turn 2, plus two redwood-archor covered seating areas above Turn 2 and Turn 9.

"I bought the redwood deck passes," IndyCar fan Fadia Desmond writes. "So worth it! I would have paid more for it, it was that great!"

Herman Norman couldn't agree more, "My seats were in the Redwood Deck area as I chose those for views after a recommendation from the ticket office. What excellent service!"

Like Sonoma Raceway, Humboldt Redwood Company is based in Northern California and its stated purpose has been to demonstrate that it is possible to manage productive forestlands with a high standard of environmental stewardship, and also operate a successful business. The company owns and manages approximately 440,000 acres of redwood and Douglas-fir forestlands along the north coast of California.

The redwood featured at the Sonoma Raceway adds to the event experience by showcasing it in a locally-sourced, sustainably-grown redwood shade structure.

"We had tickets to the Humboldt Redwood Deck and loved it," added race fan Claire Pruett. "We will buy tickets there next year. Thanks for building such a comfortable spot to watch the race!"



Redwood was a natural choice of material for the Sonoma Raceway shade structures. Grown right up the highway from the Raceway, the team realized this was an accessible choice that fit the Raceway's sustainability goals. In addition to its natural beauty, redwood lumber has long been known as naturally strong and durable, insect and decay resistant, and structurally stable.

A life-cycle assessment study (a scientific technique that helps quantify the environmental footprint of producing and consuming products we use in our everyday life) showed that redwood is one of the most environmentally responsible building materials available.

Redwood uses nothing more than the energy from the sun and rain to grow, is recyclable, and cleaner to produce than composites or plastics. Plus, advanced milling processes minimize waste as well, collecting sawdust and bark that are used to produce clean energy or recycled into downstream products such as soil amendments and landscape materials. The Humboldt Redwood Company sawmill also uses this biomass energy to power operations and return excess electricity to the power grid.

Also, redwood trees take carbon out of the air and store it in wood fiber, trapping carbon in perpetuity, which helps reduce emissions and lower its carbon footprint. Even more, at the end of its useful life, redwood is biodegradable, returning to the earth to help grow more trees.

Through adherence to some of the strictest growing and harvesting mandates, as well as a replanting protocol on commercial lands, the Humboldt Redwood Company has plentiful lumber stock for future generations.

In addition to its sustainability qualities, redwood lumber is naturally strong and durable, shrinks and swells less than other woods, and is less likely to warp or split. This natural strength, combined with its environmental benefits, makes redwood an ideal choice for any number of landscaping designs, like the Sonoma Raceway shade structure, but also arbors, decks, and planter boxes.



Play #4: Manage Paper Waste

Your venue has made more sustainable choices, reduced paper use, changed procedures, but you are not at Zero Waste yet, so how do you manage the leftovers? Paper recovery optimization in waste management operations starts way before the event begins. Think product design, recovery location, and communication. Make the process effortless for your staff and your fans and recovery rates will post positive numbers.

Design for Paper Recovery:

Develop paper collateral and packaging that is recoverable in widely available recycling systems.

- Communicate with product designers on material use, and seek to reduce or exclude stickies, plastic envelope windows, and other plastic inserts. Ensure that any direct mail, marketing materials, programs and guides and other printing and packaging follow this design principle.
- Label items clearly informing people of how to dispose of it when they are done. A nationwide initiative seeks to standardize labeling on consumer products to make it easier to know if something can be recycled, where it can be recycled, and which is the correct bin for it to go.



Learn More:

How 2 Recycle initiative and standardized labels:
<http://how2recycle.info/>

Improve Paper Collection:

Increase the volume and value of paper recovered in facility operations with strategies to eliminate the guesswork of where to find the proper bin and clearly communicate actions required.

- Locate bins thoughtfully, in visible locations, near high-traffic areas. Create 'zero-waste' stations where possible, with waste/recyclables/compost available together in one place.



- When possible, work with your waste management contractor to increase the separation of clean, high-quality paper from single-stream collection systems and capture its higher value. “Single-stream” or “Commingled” systems that put everything in one bin can lead to high contamination of the recovered paper. Once contaminated it can only be used for lower value products and increases the costs for manufacturers and consumers of recycled paper. The best opportunities for rapid implementation of this practice are within office operations.
- Utilize clear, consistent labeling of recycling and waste bins in line with emerging national standardization. Using these consistent and easily understandable labels has been demonstrated to increase the quality and quantity of recycling collection. Sometimes this can be a challenge to integrate with marketing arrangements and branding involving the waste receptacles. Up front planning with marketing departments can help avoid these challenges.



Learn More:

Standardized labels for collection receptacles:
<http://www.recycleacrossamerica.org/labels>

Selectively Incorporate Compostable Paper Products:

- Paper can be recycled multiple times but composted only once; so recycling produces the best resource savings associated with discarding paper. Cardboard and paper that are not food-soiled should be collected for recycling. However, for food service waste and tissue products that are more difficult to recover, compostable products and sorted collection can further reduce landfill waste.
- When the paper is food-soiled, it may not be recyclable and should be composted instead. Check with your recycler to confirm the characteristics of the paper it will accept for recycling.
- Concession napkins, paper towels, uncoated paperboard (thin cardboard) and food-soiled paper, including uncoated cardboard, are made of bio-based fibers and should be acceptable in your compost collection, though it is always best to double-check with your composter to be sure.



Play #5: Develop a Purchasing Policy

A key to a successful program that achieves your sustainability goals is to establish a credible and leading environmental paper procurement policy to guide the organization. Hundreds of the world's largest institutional purchasers of paper and paperboard now have responsible procurement policies that make implementation of this guidance streamlined, consistent and more successful.

When developing a leadership paper policy or incorporating one into an overall sustainability plan, your organization should include at least the following 11 elements, and seek out examples in the policies of other leading companies:

- 1** A **vision statement** that reflects the corporate sustainability vision and mission of your company and highlights the importance of High Conservation Value, High Carbon Value and Ancient and Endangered Forest protection through responsible paper procurement.
- 2** A preference for suppliers that work toward **conservation of ancient and endangered forests** and the protection of biodiversity and ecosystems contained within these forests. Work toward phasing out and finding suitable alternatives to any fiber sourced from High Conservation Value Forests.
- 3** A commitment to **maximize paper efficiencies** by researching your company or sports venue's current consumption volume of different paper products, in order to set goals for reducing waste and increasing environmental attributes. Use the financial savings from these efficiencies to finance further efforts to achieve responsible fiber sourcing goals.
- 4** A commitment to **maximize recycled content** in paper procurement and set goals.
- 5** **Support for responsible forest management** through a preference for FSC and avoidance of marketing claims and use of forestry certification labels other than FSC.
- 6** **Consideration of alternative fiber sources** such as paper and paper products from agricultural residues, including wheat straw.
- 7** **Pollution prevention** by a commitment to source paper that is produced with responsible and best available bleaching technologies (Totally Chlorine-Free and Processed Chlorine-Free), and effective pollution control.
- 8** Efforts to **decrease the carbon footprint** by a preference for paper manufactured by suppliers that transparently report on carbon emissions including biogenic and terrestrial forest carbon loss associated with logging, and a preference for suppliers that use cutting-edge measures to reduce their carbon footprint and curb greenhouse gas emissions.
- 9** **Active policy promotion and stakeholder engagement** to promote your policy with industry peers, to educate and find solutions with suppliers on policy compliance, and to meaningfully consult on the implementation of the policy with non-profit conservation organizations.
- 10** **Safeguards for human rights** and requirements for suppliers to ensure free, prior and informed consent of local peoples and communities in the areas from which pulp and paper originate.
- 11** **Timelines, benchmarks, and accountability** through regular and transparent reporting on progress and periodic reviews of the policy for continual improvement and learning.

There are many consultants and conservation organizations that can assist with more detailed advice and suggestions for customizing, optimizing and implementing these policies, and help overcome the bumps in the road along the way. Contact the EPN to inquire about a referral to a qualified adviser.

CASE STUDIES

The work of sustainability is constantly evolving and creating fresh solutions by examinations of the costs and benefits of different methods of reducing our carbon footprint and preventing deforestation and forest degradation. A variety of factors can help your organization discover the right choices for your venue or event: frequency of use, customer preference, energy mix, waste management options, and the data uncovered while following the Efficiency Action Steps in Play #1.

The following case studies feature examples that each organization determined would fit their unique circumstances; it's up to your organization to learn where and how it could improve and choose the options that best fit yours. Use these case studies as inspiration to lead the way to compete in sustainability and PLAY GREENER™.



Paper Use Case Study

1.0

Marriott International

With more than 6,500 properties across more than 120 countries, Marriott International is a giant in the hospitality sector. Along with its footprint, the company brings a strong sense of responsibility to better protect our planet and its resources. This drive manifests itself in the company's **2025 Sustainability and Social Impact Goals**, and a related platform to move toward the goals, **"Serve 360: Doing Good in Every Direction."**

After acquiring Starwood Hotels & Resorts in 2016, Marriott continued the effort of engaging stakeholders globally to inform development of its 2025 goals. In the process, company leaders recognized the importance of addressing products in the supply chain as part of the goals, including those for personal hygiene. This led to a goal focused on responsibly sourcing 95% of its top-10 priority categories by 2025, which includes a preference for FSC-certified tissue products.

"As we explored opportunities for areas of impact, we looked closely at partnerships we already had in place," said Denise Naguib, Vice President for Sustainability and Supplier Diversity. "As we target specific products to meet our goals, we can more effectively move the needle by working together with our suppliers," she added.

When it came to tissue products, Marriott's longstanding partnership with Kimberly-Clark Professional, which is FSC certified, meant the company had a chance to move toward their 2025 goal. Compared to situations requiring changes by hundreds of suppliers, this move was relatively straightforward.

“At Kimberly-Clark, our commitment to FSC is a core business strategy designed to differentiate our brands and build partnerships,” said Lisa Morden, Senior Director, Global Sustainability at Kimberly-Clark. “We see Marriott’s work as really critical, both to move the needle on sustainability given their scale, and to help educate guests about the importance of choosing products from responsibly managed forests,” she added.

Across sustainability efforts, communications with guests and associates is a critical component to achieving impact. In guest rooms, Marriott most commonly communicates about towels and sheets, to reduce unnecessary cleaning. But paper products are also a topic for regular customer feedback. Marriott works hard to label products that are made from recycled material, recyclable or FSC certified, to raise guest awareness of the actions the company is taking. Marriott also educates its associates, so they are able to communicate sustainability benefits to guests.

“Linen reuse has become table stakes in hospitality, but as people become more aware of other issues, expectations rise,” said Naguib. In the competitive hospitality sector, there is always an opportunity to look for new ways to differentiate in consumer minds.

With specific 2025 goals in place, Marriott is now focused on implementation, which is a massive task. There are milestones to celebrate and lessons to learn on the path, but for now the primary focus is education and awareness.

“We want to integrate sustainability into the organization, not just have it exist in a silo.”

—Denise Naguib

**Vice President for Sustainability
and Supplier Diversity**

For an organization with hundreds of thousands of employees around the world, it is critical to make sure everyone understands the platform and goals, and their role in driving towards success.



Paper Use Case Study

2.0

America's Cup Paper Sourcing and Usage

The vision of the 2013 America's Cup in San Francisco was to deliver a model sustainable sporting event. Event organizers addressed a wide range of environmental, social and economic impacts, including paper sourcing and usage.

The paper used in the event organizer's offices, as well as paper used in the international media center, was 100% recycled content from post-consumer waste, and printer paper was also FSC certified.

Two local San Francisco vendors produced the America's Cup Official Program on paper made of 60% post-consumer waste, FSC certified, and chlorine-free. The magazine was also printed using 100% vegetable-based inks with chlorine-free processes for printing.

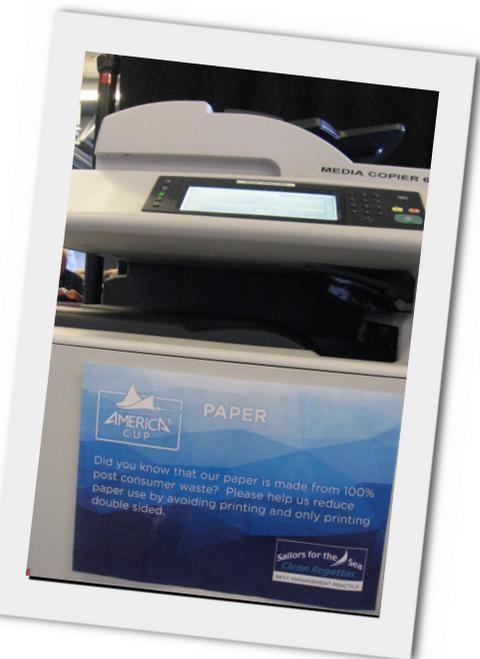
Organizers also specified recycled content paper for the carrier bags used in the merchandise stores. While this was required to comply with the City of San Francisco's ban on plastic bags for retail stores, established in 2012, retailers were instructed to ask customers if they needed a bag to conserve resources.



“We wanted to showcase responsible paper sourcing for the keepsake America’s Cup Official Program. This was part of our Sustainability Strategy, which ultimately achieved a zero waste, carbon neutral and sustainable event through the combined efforts of the organizers, suppliers, partners, and teams.”

—Jill Savery
 the first Head of Sustainability for the
 America’s Cup organizers

[Read more in the 2013 America’s Cup Sustainability Report.](#)



NEW LEAF PAPER®

ENVIRONMENTAL BENEFITS STATEMENT *of using post-consumer waste fiber vs. virgin fiber*

America's Cup saved the following resources by using 23625 pounds of Reincarnation Matte and 2700 pounds of Reincarnation Silk, made with an average of 60% post-consumer waste and manufactured with electricity that is offset with Green-e® certified renewable energy certificates.

trees	water	energy	solid waste	greenhouse gases
159 fully grown	73833 gallons	71 Million BTUs	4942 pounds	13613 pounds

Calculations based on research by Environmental Defense Fund and other members of the Paper Task Force.

www.newleafpaper.com







THE PatriotsTM PUT A LOT OF ENERGY INTO CONSERVING IT

Paper Use Case Study

3.0

The New England Patriots Put a lot of Energy into Conserving It

Located just southwest of downtown Boston, Gillette Stadium is home to one of the world's most revered sports teams, the New England Patriots. Since Robert Kraft purchased the franchise in 1994, no NFL team has won more games than the Patriots. Between 2001 and 2004, the Patriots became just the second team in NFL history to win three Super Bowls in four years. But for some, it's the work done off the field that has made the Patriots' organization one of the most respected in the league. The Kraft Group privately financed the \$325 million construction of Gillette Stadium, which opened in 2002. That year, The Kraft Group won the U.S. Environmental Protection Agency's New England Environmental Merit Award for the stadium's design. To avoid the construction and operational issues that plagued the team's previous home, The Kraft Group had challenged their contractor to focus on long-term sustainability, energy efficiency, and ecosystem management when designing Gillette Stadium. As a result, The Kraft Group was able to develop a facility that is sustainable both in its construction and its day-to-day operation. From its inception, the designers focused on key areas that would yield environmental benefits and cost savings and now the facility management team continues to search for new ways to expand its conservation efforts and cut costs.

"While our primary focus remains on creating the ultimate fan experience, we're continually looking for new areas to make environmental improvements," said Jim Nolan, vice president of operations, Gillette



Stadium. “Updating the restrooms with XLERATOR® hand dryers represents another large step in reducing our carbon footprint.”

With the capacity to hold nearly 70,000 people for any event, the stadium’s restrooms were one area that offered room for improvement. Originally equipped with paper towel dispensers, the stadium used an average of 6,264,000 paper towels per year, at the cost of more than \$50,000 for paper, maintenance, and waste removal. In September 2009, Excel Dryer, Inc., manufacturer of the patented high-speed, energy-efficient XLERATOR hand dryer, announced a partnership with the New England Patriots to install more than 125 XLERATOR dryers that feature Excel Dryer’s exclusive, custom digital imaging cover technology throughout Gillette Stadium. The units have several different cover designs featuring the team’s logo, colors and some with a sustainability message letting fans know why they’ve switched from paper towels. The Patriots saved 95% vs. paper towel costs, maintenance, and waste while reducing their carbon footprint by 70%.

“Installation of XLERATOR hand dryers reduces the cost and maintenance associated with paper towels in the stadium’s restrooms,” said Nolan. “Over time, we plan to install more dryers throughout our other properties, reducing operating costs and supporting our existing sustainability initiatives.”

Unlike conventional hand dryers, which average 30 to 45 seconds of drying time, XLERATOR dries hands three times faster (completely in 10-15 seconds) and uses 80% less energy than conventional hand dryers. XLERATOR represents a 95% cost savings when compared to paper towels, reduces the need for maintenance and improves restroom hygiene. XLERATOR is also the only hand dryer to be MADE IN USA Certified, the first hand dryer to be GreenSpec® Listed and helps facilities qualify for LEED credits.

The installation is a natural fit given XLERATOR’s proven environmental benefits and the stadium’s reputation as a leader in conservation. Nolan comments that in addition to the energy saving, “Not having to pick up excess paper towels, re-stock towel dispensers, or pay for the removal of such waste, the stadium will save thousands of dollars in operating expenses.”

To further simplify the retrofit process, Excel Dryer provided the operations team with recessed wall boxes that allowed the dryers to be mounted precisely into the space where the paper towel dispensers once were.

“The NFL currently has XLERATOR hand dryers installed at its New York headquarters, NFL Network Studios in Los Angeles and is encouraging the use of high-speed, energy-efficient hand dryers at stadiums as part of the league’s ‘Green Initiative,’” said David Krichavsky, director of community affairs, National Football League.



“We are excited about partnering with one of the most respected organizations in professional sports. The Kraft Group has created the model franchise in the NFL; its team, operations, business, and green initiatives are a proven blueprint for success.”

—William Gagnon

Director PF Marketing, Excel Dryer, Inc.

With continued efforts to reduce carbon emissions and save energy, the Patriots and Gillette Stadium are well on their way to creating a ‘green dynasty.’



Paper Use Case Study

4.0

Beyond Paper: London 2012 and Rio 2016 Olympic Games

In recent years, the International Olympic Committee (IOC) has made a strong commitment to purchasing products from responsibly managed forests through sustainable paper and wood product policies. The scale of any Olympic games creates significant impacts on the local and global environment through the built environment and general resource use. The IOC relies heavily on the local host Organizing Committees to execute sustainability policies, and both the Rio (2012) and London (2016) Olympic and Paralympic Organizing Committees utilized Forest Stewardship Council (FSC) standards and certifications to ensure sustainable practices.

London:

The London Organizing Committee of the Olympic and Paralympic Games (LOCOG) achieved a “world first” in 2012 by securing FSC project certification for the London 2012 Olympic Park.¹ In regard to Responsible Sourcing, the Committee’s aim was to ensure that products and services were sourced and produced under a set of internationally acceptable environmental, social and ethical guidelines and standards. This applied across a wide range of categories and concerned issues such as labor practices, health and safety, diversity and inclusion, animal welfare, timber and publications and other printed materials. Forest Stewardship Council certification was a requirement for timber, timber products and paper.²

¹ FSC website - <http://www.fsc-uk.org/en-uk/about-fsc/what-is-fsc/case-studies/constructionnbsplondon-2012-olympics>

² LOCOG’s Sustainable Sourcing Code (3rd edition, July 2011) <http://learninglegacy.independent.gov.uk/documents/pdfs/sustainability/cp-locog-sustainable-sourcing-code.pdf>

“London 2012 placed sustainability at the heart of how we planned and delivered the Olympic and Paralympic Games. One of our most significant achievements was the way we embedded sustainability requirements into our procurement processes. Not only did this ensure we operated responsible sourcing practices across our supply chain, but we were also able to realize substantial cost savings for the Organizing Committee.”

—David Stubbs

**Independent Sustainability Expert and former
Head of Sustainability at London 2012**

Rio:

All forest products acquired by the Organizing Committee of the Rio 2016 Olympic and Paralympic Games were FSC certified, from structures to stationery. Kim Carstensen, Director General of FSC said: “The Olympics is about creating a legacy that inspires others, and Rio has put environmental awareness at the heart of its message. Through the visibility of FSC certification at the Games, the importance of responsible forestry is clearly demonstrated, and we hope that many more consumers will actively seek out FSC-certified products in order to help preserve our forests for future generations.”³

3 FSC website - <https://ic.fsc.org/en/news-updates/id/626>



Paper Use Case Study

5.0

The Trail Blazers and Moda Center Source Sustainably and Reduce Waste by Working with Stakeholders

The Portland Trail Blazers' Sustainable Purchasing Policy

Making a big difference with a small footprint to positively impact the lives of children and families where they live, learn and play.

In an effort to protect our planet for generations to come, the Trail Blazers prefer the use of recycled, sustainable and environmentally-friendly products that reduce consumption of virgin materials and their negative environmental impacts. All employees, partners, and vendors should follow these guidelines whenever possible for any items produced and distributed by the Trail Blazers and Rose Quarter or its partners at any company-sanctioned event. The cost to source these products is part of our business philosophy and cost of doing business.

Print Materials, Office Supplies, Signage, Promotional Giveaways, Apparel, Retail and Gifts

- All paper products produced with 100% post-consumer waste
- Maximize use of recycled content, PCW, upcycled, biodegradable and rPET materials
- Print using soy-based inks and sustainable energy sources such as wind or water power



- Preference is given to environmentally- and socially-conscious vendors with minimal carbon footprints including Fairtrade certified organizations, B Corps, Zero Waste and Closed Loop facilities
- Source local vendors, craft artisans, and retail brands to create unique and authentically Portland gifts
- Use materials harvested, extracted and produced within 500 miles of Portland
- Reduce individual packages, bags and shrink wrap; ship in bulk or kraft wrap to reduce plastic usage

The Moda Center Adopts Ingeo-Based Food Serviceware Compostables for Green Sports Alliance Founding Member – Portland Trail Blazers, presented by NatureWorks

Organics recycling as a landfill diversion strategy helps transform a plastic-dominated marketplace

SITUATION: 2,000,000 pounds of solid waste

- A major cost center for venue
- Opportunity to reduce environmental impacts
- Key issue: high food waste volume
- Key issue: single stream waste management

SOLUTION: Comprehensive waste stream management

- Combine food and packaging waste streams into one compostable waste stream avoiding landfill
- Guest engagement with new GreenDrop recycling stations and sorting signage supported by Green Game and community-based events.
- Concessions switch to StalkMarket Ingeo-based BPI certified food serviceware and other compostable offerings

STRATEGIC OBJECTIVES:

- Enhance fan and guest experience
- Reinforce the Trail Blazers brand
- Avoid added incremental costs for compostable food serviceware/ packaging
- Reduce operational cost
- Improve environmental performance
- Support City of Portland’s waste policy goals and climate action plan

INGEO ROLE IN MEETING STRATEGIC OBJECTIVE:

- Ingeo-based food serviceware and packaging products
- Ingenious materials from plants not oil
- 100% annually renewable product
- USDA BioPreferred and Biodegradable Products Institute (BPI) certified compostable
- Cost and performance competitive with traditional petroleum-based food serviceware
- Marketing support and showcasing a unique closed venue food/compostable packaging diversion success

2013 Moda Center Achievements

87% landfill diversion rate
\$625,000+ waste diversion savings
(since 2008 baseline)

Portland Trail Blazers Best Practices

Understand waste materials efficiency opportunities to reduce costs and improve overall environmental performance

- Engage local government support on landfill diversion, recycling and composting opportunities
- Work with service and product suppliers that demonstrate commitment to continuous improvement of environmental performance
- Engage customers and employees in critical behavior changes necessary to reduce environmental impacts of public gathering venues

Key Stakeholders

Portland Trail Blazers

Set out to reinforce brand; set goal to divert 100% waste from landfill; win additional public support

Ovations Food Service

Made procurement switch to compostable products and achieved price parity; engaged staff effectively

The Moda Center Operations

Sought to enhance fan and guest experience; enabled infrastructure and capital investments to make initiative possible, including critical recycling stations as guest engagement and waste stream separation mechanism

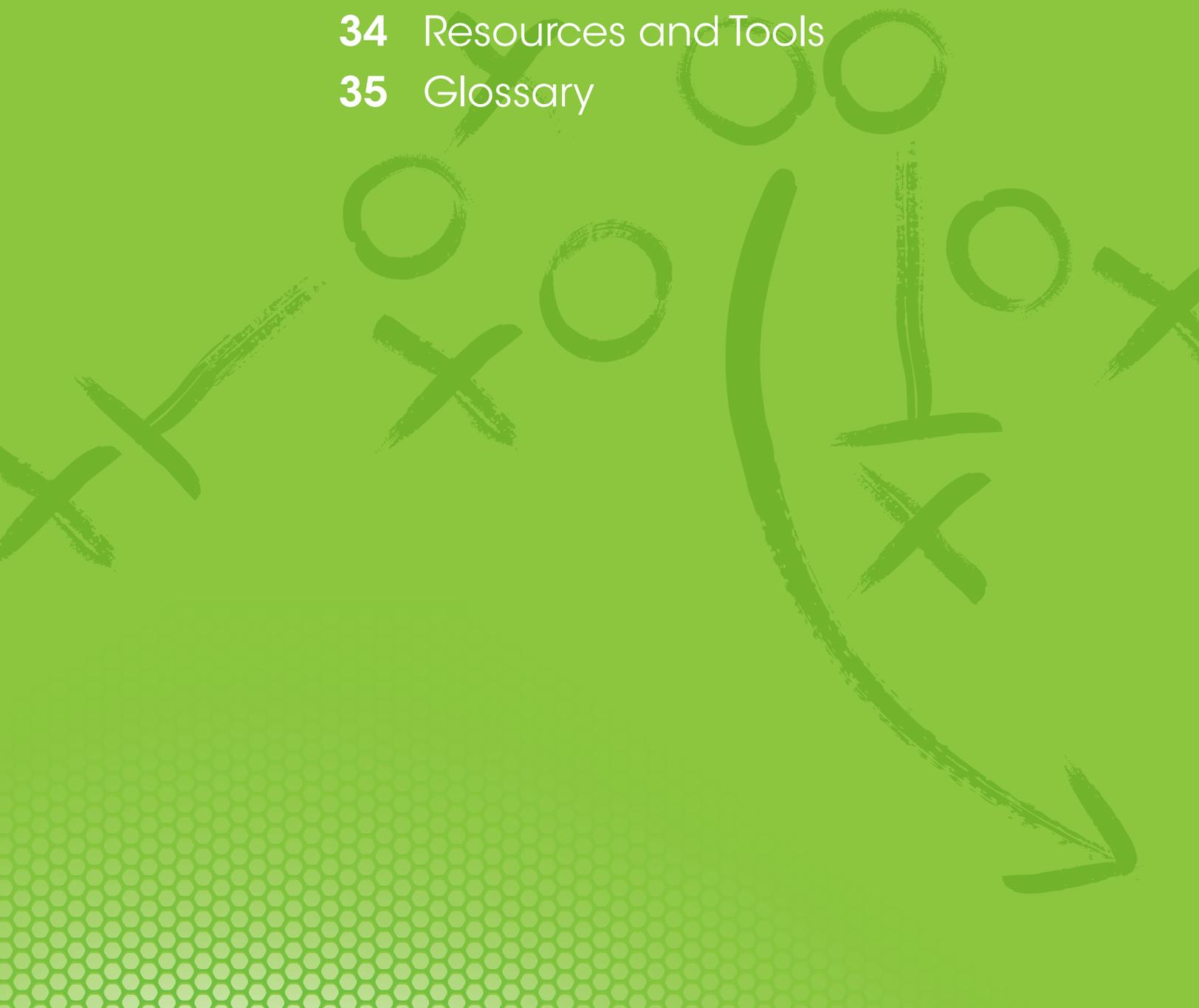
Stalkmarket Products

Supplies BPI certified compostable Ingeo-based drink cups and food packaging to Ovations concessions



APPENDIX

- 34** Resources and Tools
- 35** Glossary



RESOURCES AND TOOLS

Play #1:

Environmental Paper Network:
<http://www.environmentalpaper.org>

Environmental Paper Network's Paper Calculator is the premier tool for measuring the environmental impacts of paper and discovering the best paper choices. <http://www.papercalculator.org>

The Paper Utility Matrix can help you to work out which papers are really useful to your organization and which are costing you money and causing the most environmental impact, without actually serving a valuable purpose. See the Paper Utility Matrix here: <http://environmentalpaper.org/paper-utility/>

Play #3:

Recycled Paperboard Alliance Conversion Guide:
<https://www.rpa100.com/why/conversion-guide/>

Follow the EPN's "Paper Steps" for choosing the best environmental paper available.
<https://environmentalpaper.org/the-paper-steps/>

Find environmentally superior papers in the EcoPaper Database. <http://epd.canopyplanet.org>

Calculate the impacts of your paper usage and measure sustainability progress using EPN's Paper Calculator. <http://www.papercalculator.org>

Work with responsible printers to choose coatings and inks that reduce environmental impacts. Learn more from the Sustainable Green Purchasing Partnership at <http://sgppartnership.org/>

A ranking of the environmentally responsible printers in North America is available in the Canopy BlueLine Report, found at <http://blueline.canopyplanet.org/>

Play #4:

How 2 Recycle initiative and standardized labels on products: <http://how2recycle.info/>

Standardized labels for collection receptacles: <http://www.recycleacrossamerica.org/labels>

NRDC Sports Venue Composting guide: <https://www.nrdc.org/sites/default/files/sports-venue-composting-guide.pdf>

GLOSSARY

Agricultural residues include byproducts of agricultural processes, such as sugarcane bagasse or wheat straw. In many cases these residues are not utilized, even though it is possible to use their fibers to make paper.

Alternative natural fibers include fibers from agricultural residue, bamboo, hemp, or other crops which can be used to make paper in addition to wood fibers.

Ancient and Endangered Forests are defined as intact forest landscape mosaics, naturally rare forest types, forest types that have been made rare due to human activity, and/or other forests that are ecologically critical for the protection of biological diversity. Ecological components of endangered forests are: Intact forest landscapes; Remnant forests and restoration cores; Landscape connectivity; Rare forest types; Forests of high species richness; Forests containing high concentrations of rare and endangered species; Forests of high endemism; Core habitat for focal species; Forests exhibiting rare ecological and evolutionary phenomena. As a starting point to geographically locate ancient and endangered forests, maps of High Conservation Value Forests (HCVF), as defined by the Forest Stewardship Council (FSC), and of intact forest landscapes (IFL), can be used and paired with maps of other key ecological values like the habitat range of key endangered species and forests containing high concentrations of terrestrial carbon and High Carbon Stocks (HCS).

Compostable means a product is able to be broken down into a mixture of decaying organic substances to create compost, which can be used as a fertilizer. Practically, because municipal composting systems vary, the term “compostable” ties to the specific systems in place for a given location.

Forest Stewardship Council certification is an independent, third-party system to verify that a product is sourced from a responsibly managed forest.

Free, Prior and Informed Consent the principle that a community has the right to give or withhold its consent to proposed projects that may affect the lands they customarily own, occupy or otherwise use.

Green Seal develops Environmental Leadership Standards that are credible, transparent, and essential to helping manufacturers, purchasers, and consumers make responsible choices. Thousands of products and services in hundreds of categories have been certified to meet Green Seal standards.

High Conservation Value Forests are defined by the Forest Stewardship Council as forests of outstanding and critical importance due to their high environmental, socio-economic biodiversity or landscape values, according to six High Conservation Value categories:

- a. Forest areas containing globally, nationally or regionally significant concentrations of biodiversity values;
- b. Forest areas containing globally, regionally or nationally significant large landscape level forests;
- c. Forest areas that are in or contain rare, threatened or endangered ecosystems;
- d. Forest areas that provide basic services of nature in critical situations;
- e. Forest areas fundamental to meeting basic needs of local communities;
- f. Forest areas critical to local communities' traditional cultural identity.

Kraft pulp is a process for converting wood into wood pulp to make paper.

Low utility paper is typically wasteful or does not serve a meaningful need. Examples include excess packaging, unnecessary promotional materials, or flyers that are immediately recycled. Low utility paper raises the idea that paper is precious, so it should be used when needed but not wastefully.

Post-consumer recycled refers to a product that has served its intended use and has been diverted or recovered from the waste stream to be recycled into a new product.

Pre-consumer recycled refers to the material of manufacturing that does not reach consumers and can be recycled. Trimmings from a paper mill is an example of pre-consumer recycled materials.

Processed Chlorine-Free refers to a recycled paper-making technique that does not use chlorine chemicals in the bleaching process, which can create carcinogens and pollutants. Many 100% recycled printing and writing papers are Processed Chlorine-Free (PCF) in the United States. Totally Chlorine-Free is the comparable process for virgin wood fiber pulp and produced without any form of chlorine. Elemental Chlorine-Free refers to papers produced from pulp that has been bleached with a chlorine derivative such as chlorine dioxide (ClO₂), but without elemental chlorine (Cl).

Recovered fibers in recycled paper come from paper that was previously used. Each time paper is recycled, the recovered fibers shorten and wash out, until they reach a point when they cannot be made into paper any more.

Responsible sourcing refers to a voluntary commitment to take into account social and environmental considerations when managing relationships with suppliers.

Responsible forest management refers to a type of forestry that balances environmental, social and economic considerations.

Single-stream or Co-mingled Systems refer to recycling systems in which all papers, plastics, metals and glasses are combined in a single collection bin and truck, instead of being sorted. The resulting recycled materials may be of lower value due to contamination.

GREEN
SPORTS
ALLIANCE

greensportsalliance.org/resource-center

 @sportsalliance