



**ASPEN TECH
POLICY HUB**

POLICY



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Green Game Plan

Transforming apparel recycling and reuse to achieve zero waste goals

EXECUTIVE SUMMARY

Apparel has a far-reaching environmental impact, [contributing about 10%](#) of global CO₂ emissions. While much discarded clothing could be recycled, the vast majority goes to landfills. This policy brief proposes a new initiative: *Green Game Plan*, an apparel recycling program based at athletic facilities that is designed to align the community convening power of athletics with citywide zero waste goals. Green Game Plan would collect apparel of any condition from fans when they come to sporting events, encouraging participation with incentives such as passes for public transportation, concessions discounts, or credit toward fan apparel. The donated apparel would be picked up by a recycling partner at no cost to the city or athletic facility, and the proceeds would go toward community sustainability programs.

Green Game Plan seeks to become an innovative public-private partnership between cities and athletic facilities to increase apparel reuse and recycling and achieve zero waste goals. Green Game Plan allows sports to play an active role in creating more opportunities to achieve zero waste by transforming athletic facilities into locations for recycling and reuse. By encouraging fans to participate, Green Game Plan also would raise sustainable apparel as a priority for brands and sponsors.

BACKGROUND

Improving rates of recycling and reuse is essential to achieving *zero waste*, defined as “designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them.”¹ [More and more cities are adopting zero waste policies](#), and a number of large facilities, such as sports arenas and athletic facilities, have also improved their environmental sustainability actions, such as by adopting food waste recycling.

Despite this movement towards recycling and reuse, the apparel industry still remains wasteful. The average American throws away about [81 pounds of clothing](#) every year. While [95% of used textiles can be recycled or reused](#), [85% end up in the trash](#). Few apparel companies educate customers about clothing recycling and reuse.

Those involved in professional sports – such as fans, athletes, and stadiums – are in a unique position to reduce the effects of this unsustainable waste. As a place for convening, athletic facilities have a unique impact on apparel because athletic facilities encourage fans to wear apparel to or to buy apparel from the athletic facility retail store.

RECOMMENDATIONS

Overview

We propose a new initiative, Green Game Plan, that would help to align commitments from athletic facilities, recyclers, and cities to host apparel recycling donation bins at athletic facilities. Athletic facilities would host bins that fans would fill with apparel they want to recycle at no cost to the athletic facility. This would increase the city’s recycling rate and divert waste from the landfill. Moreover, apparel recycling, sorting, and secondhand clothing markets from the athletic facility collection would create jobs and keep valuable materials in the supply chain, shifting from a linear model where textiles are thrown out to a circular model that incorporates recycling as seen in the figure below. (See Appendix A for more details.)

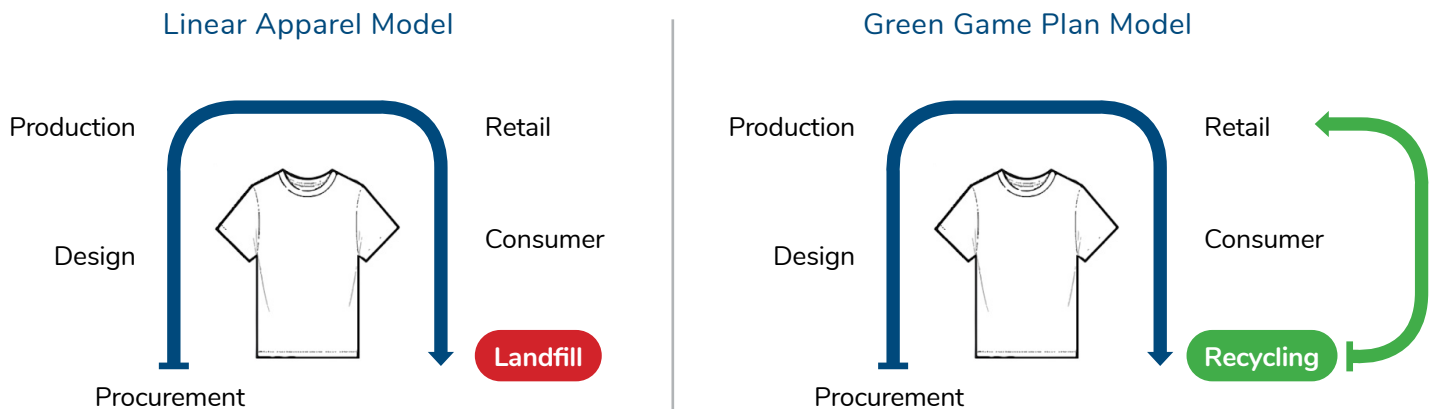


Figure 1: The typical linear apparel model versus the proposed Green Game Plan apparel model

We propose a 3 to 6 month pilot program at an athletic facility to test the effectiveness of Green Game Plan. The apparel recycler would collect and share data on the recycling program (e.g., the percentage of reusable, recyclable, or municipal solid waste resulting from the donation collection) in a standard reporting template provided by Green Game Plan. Participating stakeholders would develop incentives for fans to participate in the program.

Stakeholders and Roles

The core stakeholders in the pilot are a major city athletic facility, a textile recycler, and the county or city government in which the arena is located. Below is a brief summary of each stakeholder's responsibilities in Green Game Plan; please see the [pilot operational plan](#) for further details.

- ▶ The **athletic facility** would provide the physical base for the recycling program; liaise with the recycler about locating donation points to drive public engagement and maximize the ease of drop-off/collection; and provide the staff time needed to get the program up and running.
- ▶ The **textile recycler** would install and manage the recycling drop-off/collection points, cover the costs of collecting the recycled apparel, and provide data to the city on the weight of clothing that has been recycled. As detailed in the implementation plan, the recycler should include weight tracking technology to track the volume of clothes donated through this initiative. The recycler can be a for-profit or not-for-profit recycling program.

- ▶ The **county/city government agency** would work with the recycling partner and compile data collected (such as total weight/volume of items and percentage of items that are reused) into monthly and quarterly reports that can be used to measure the program's progress.
- ▶ The **organizing partner** would be responsible for general governance of the program. The organizing partner would take on the day-to-day work associated with Green Game Plan, including potential future expansion plans. The organizing partner should be an environmental organization or a nonprofit that is interested in leading sustainability work.

Other key partners include sports fans, who will bring materials to the athletic facility; teams and individual athletes who can champion the program; event convenors who can gather key stakeholders annually to share successes of the program in their cities; and local community groups who can help market the program.

Stakeholder Benefits

Green Game Plan seeks to allow sports to play an active role in creating more opportunities to achieve zero waste by recycling and reusing apparel and increasing community education. By encouraging sports fans to participate in apparel reuse and recycling, Green Game Plan would raise sustainable apparel as a priority for brands and sponsors. For core stakeholders, the program aims to offer further benefits:

- ▶ The **athletic facility** hosting the program would gain publicity and would be able to make progress on its own sustainability goals.
- ▶ The **textile recycler** would gain a steady stream of reliable apparel inputs for their reuse and recycling programs, as well as improved public awareness of apparel recycling.
- ▶ The **city or county** where the athletic facility is based would achieve improved waste diversion, and may ultimately save money in waste management. The city/county government would also be seen as a leader in climate mitigation.
- ▶ **Individual athletic teams** would benefit from positive relationships with the community and could see strengthened relationships with local community partners.



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ABOUT THE HUB

The Aspen Tech Policy Hub is a Bay Area policy incubator, training a new generation of science and tech policy entrepreneurs. We take science and tech experts, teach them the policy process, and support them in creating outside-the-box solutions to society's problems.

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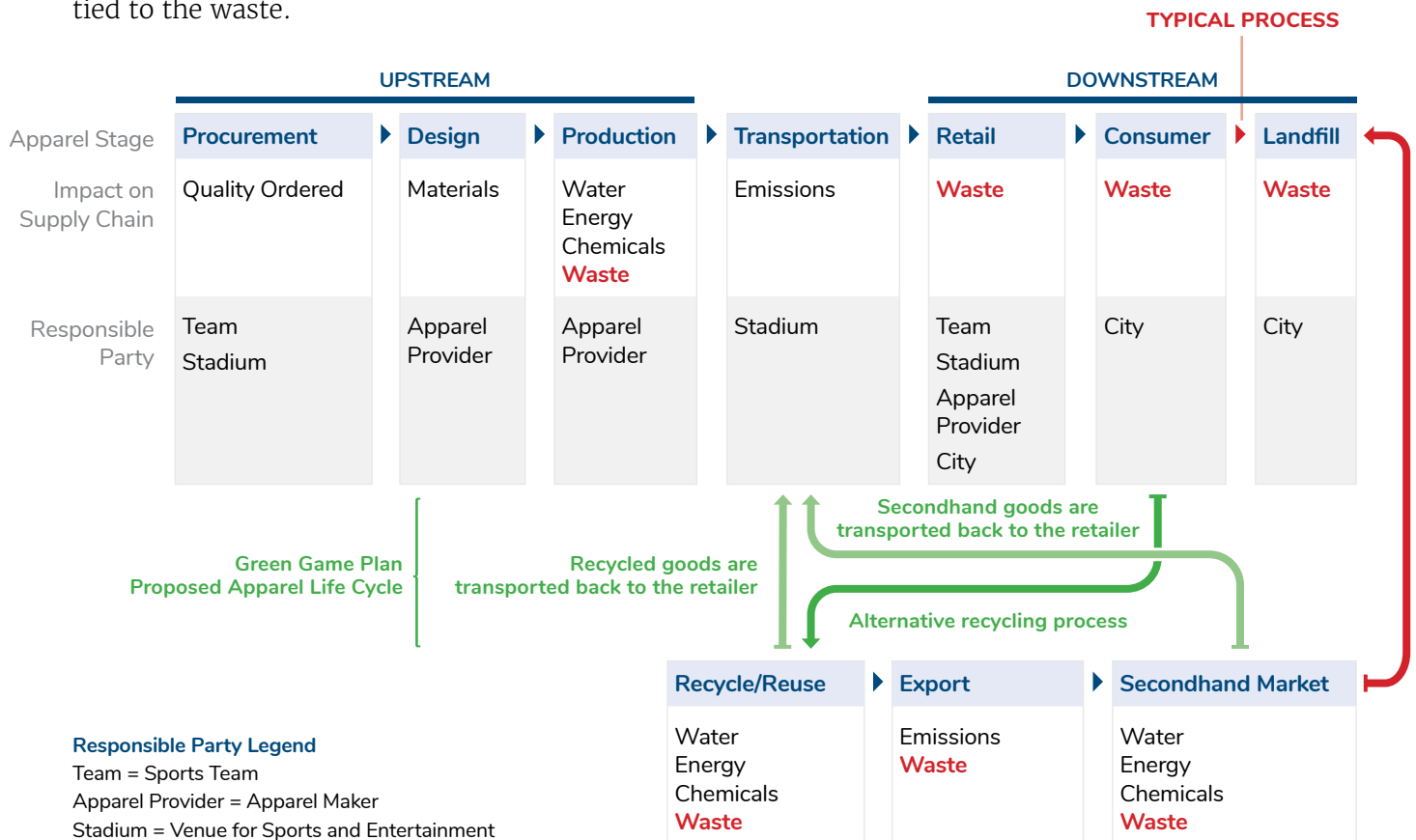
Joining Green Game Plan

The [accompanying operational plan](#) provides more information on the Green Game Plan pilot structure. Any athletic facility, textile recycler, city/county government, or individual athletic team can apply to join Green Game Plan by [filling out this form](#).

Based on the success of this pilot initiative, the organizing partner may choose to build additional partnerships with other cities or large organizations (such as universities) or to arrange new funding structures.

Appendix A: The Apparel Life Cycle

The image below represents the life cycle of apparel from production to disposal. Observing the entire apparel life cycle process can help us determine where waste is accumulated and which stakeholder is tied to the waste.



Responsible Party Legend

- Team = Sports Team
- Apparel Provider = Apparel Maker
- Stadium = Venue for Sports and Entertainment
- City = Government, Residents, and Players

Apparel Stage Legend

- Procurement = What apparel is ordered
- Design = How apparel will be made
- Production = The actual production of the apparel
- Transportation = The moving of apparel to market
- Retail = The selling of apparel
- Consumer = The buying of apparel
- Recycle/Reuse = The treating of apparel for a new life
- Landfill = The end of life for apparel
- Export = The moving of apparel
- Secondhand market = The moving of apparel to a secondhand market

Supply Chain Impact Legend

- Quality Ordered = Number of items made
- Materials = Materials used to make the apparel
- Water = Water used to make apparel the
- Energy = Mechanical energy to make the apparel
- Chemicals = Chemicals used to make the apparel
- Waste = Apparel waste generated
- Emissions = Greenhouse gases from transportation

The life cycle of apparel before it reaches landfills involves procurement, design, production, transportation, and retail. Each of these steps can be modified and made more sustainable. Procurement and design, the first steps in the cycle, can help make apparel sustainable through decisions on materials specified for use, the order quantity for production, and other upstream production solutions. Production will impact resources used, the chemicals required, and the disposal of any production waste. The transport of apparel impacts the emission of greenhouse gases into the atmosphere. Waste is generated in retail when the amount ordered is greater than the amount sold.

In a typical linear apparel lifecycle, the apparel is sent to a city landfill after consumer use. In Green Game Plan's model, some of this apparel will instead be recycled or reused domestically, reducing the waste sent to a landfill. Without taking action, the linear life cycle will continue to accumulate apparel waste in cities' landfills, harming human health and the environment.

ENDNOTES

1 Zero Waste International Alliance, “Zero Waste Definition,” December 20, 2018, <https://zwia.org/zero-waste-definition/>.