



# ZERO WASTE TAILGATING INITIATIVES AT STANFORD UNIVERSITY

NCRA, Recycling Update, March 19, 2019



# Stanford University

- ❑ Established 1885
- ❑ Located in Stanford, CA
- ❑ 8180 acres, about 700 buildings
- ❑ About 35,000 faculty, staff and students
- ❑ Highly residential campus
  - ❑ 93% of undergraduates live on campus
  - ❑ 64% of graduate students and 35% of faculty members are housed on or near campus, including 900 faculty staff homes on campus



# Sustainable Stanford



Stanford reduces campus greenhouse gas emissions by **68%** and decreases potable water use by 18 percent, exceeding all greenhouse gas reduction targets.



Stanford has reduced campus energy use per square foot by **25%** since 2000.



More than **60** local farms supply organic, humanely-raised, fairly-traded food from family-owned farms and sustainable fisheries.



Stanford has reduced domestic water use by **49%** since 2001.



The recycling program diverts **64%** of waste from landfills.



There are **78** electric vehicle-charging stations on campus.



Employee drive-alone rate has been reduced from 67 percent in 2003 to **43%** in 2017. Transit ridership is up from 9 to 22 percent.



Ridership on the free Marguerite bus system increased to **3.26M** in 2016, up 25 percent from 2015.



In 2017, **57%** of employees commuted via alternative transportation.

# PSSI/Stanford Recycling

- Peninsula Sanitary Service, Inc. and the Stanford Recycling Center serves Stanford University for all of its recycling, composting and landfill waste collection, processing and hauling needs
- Single customer, located on campus
- Operates on campus a recycling sorting line, Direct Transfer Facility, Stanford Recycling Drop Off Center and an Agricultural Storage and Handling Facility for horse manure.





# Goals and Current Standing

- Currently at a 64% recycling rate by weight.
- About 22,000 tons of total waste handled, annually
- Compostables is the largest portion and continues to grow.
- Reduced annual landfill tonnage from 14,000 tons per year in 1998 to 8500 tons in 2018, even with population increase of 10,390 people.
- Participate in RecycleMania, 2<sup>nd</sup> largest campus recycling program in the country.
- Zero Waste by 2030

# Cardinal Green Athletics

GREEN  
SPORTS  
ALLIANCE

2013

- Stanford Stadium chosen to be part of the Green Sports Alliance Summer Stadium Tours
- Sustainability activities included for the first time during halftime at football games and basketball games as part of Game Day Challenge

2014

- Energy retrofits in several Athletics facilities estimated to save over \$400,000 annually
- 5 solar-powered lights replace traditional fuel light towers, saving 100 gallons of fuel per game
- Athletics water consumption reduced by 30% through irrigation reductions and lawn replacements



2015

- The student-led SCORE initiative secured funding to offset all of the 2015 varsity team air travel emissions - a total of 2,640 metric tons.
- Maples Pavilion increased its diversion rate from 6% to 28% by adding composting during a women's basketball game.
- Interview with Bernard Muir about sustainability in Stanford Athletics featured in the Stanford Report
- Hydration stations replace the need for 50,000 plastic water bottles



2016

- Paper towel composting launched in ACSR
- Compost bins added at Jimmy V's Cafe
- Compost bins added at Stanford Stadium during football season for the first time, more than doubling the Stadium diversion rate from 2015
- Outdoor waste stations with recycling, composting, and landfill bins added to 8 locations surrounding Athletics venues
- 636 kW solar installation underway on Maples Pavilion - the largest of any building on campus



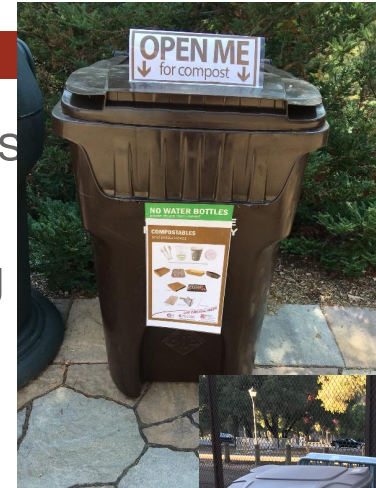
2017

- Paper towel composting launched in AOERC
- Tailgating sustainability program introduced, including 12 new sets of dumpster "trios"
- Flyer and bag distribution to tailgaters expanded via student volunteers
- Student-led food recovery initiatives donated a total of 2,777 lbs of food from football games.
- Reached an all-time high diversion rate of 68% in Maples Pavilion for women's basketball Zero Waste Bowl game
- Inaugural student athlete competition hosted through My Cardinal Green



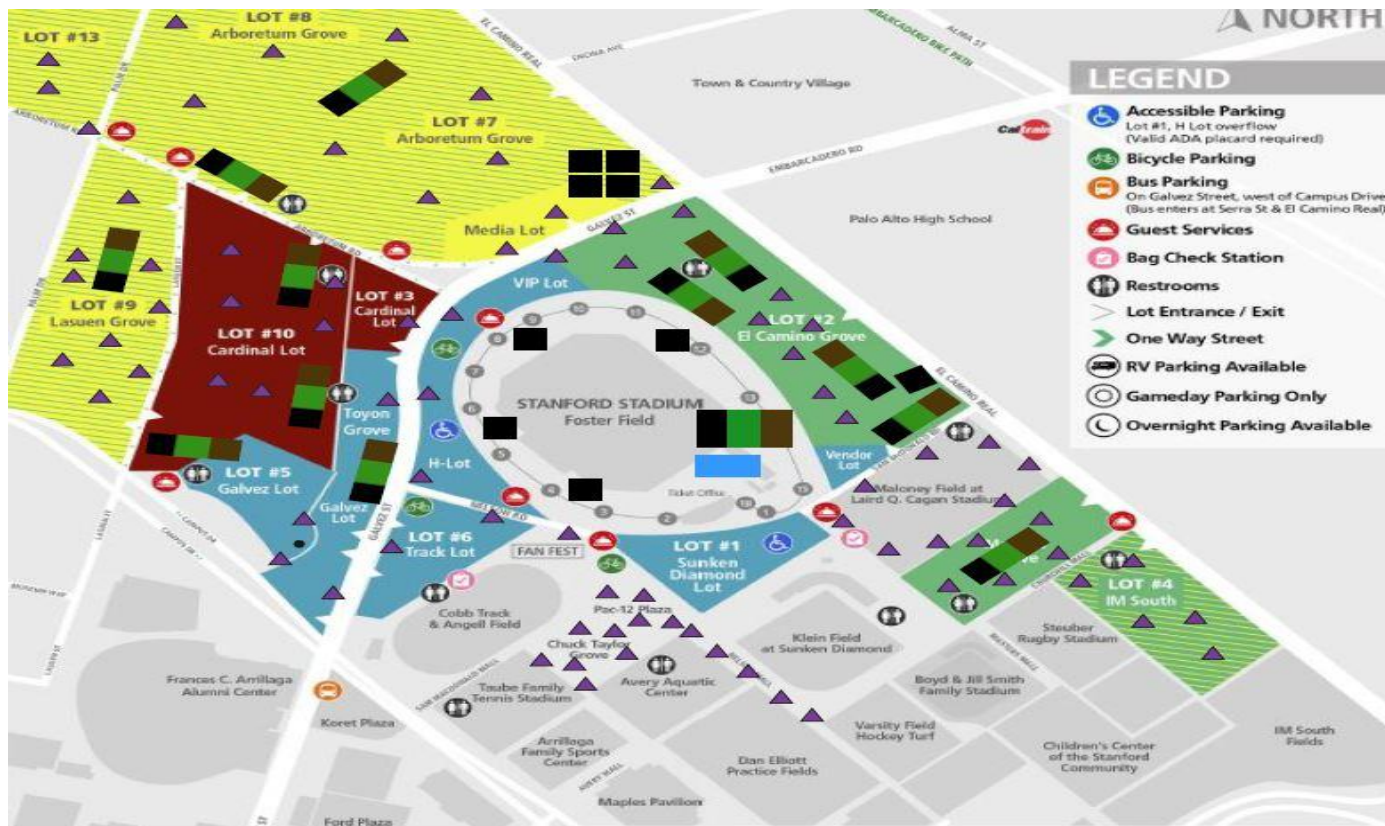
# Stanford Stadium – seats 50,424

- Over 100 recycling and compost collection points
- Student Volunteers, PSSI, and Office of Sustainability monitoring waste collection during games
- Concession Stand and Red Coat Training
- Donate 500-800 lbs of rescued food per game via Stanford Food Recovery and Silicon Valley Food Rescue.
- Participate in Game Day Challenge and PAC 12 Zero Waste Bowl (football). Composting





# Tailgate Area – 24 Acres



## Stadium Waste Bin Map

Dumpsters will be placed by PSSI and will remain in place for the duration of the season

Event bins for each parking area will be locked to dumpsters and/or buildings in that parking area between games

### Event Bin Set-Up Instructions:

- 1) **Always place bins in trios** (1 compost, 1 landfill, 1 recycling)
- 2) Each bin in a trio gets a different color bag: **green for compost, clear for recycling, and black for landfill**
- 2) **Make sure bins are out of the way of the normal flow of traffic**
- 3) **Bins should either line busy walkways** (such as along Galvez St, Nelson Rd, and Nelson Mall) **OR be concentrated towards the center of each tailgate area**
- 4) **Red and white sticker** labeled "Stop, think and sort" **should be visible** to people walking
- 5) If time is crunched, priority should be given to getting bins set up in **Chuck Taylor Grove, Lot 2, Lot 4, Master's Grove, and walkways**

### Additional Notes:

Bins for FanFest are reserved separately and are not pictured here

10 additional event bin trios are available to accommodate reserved tailgate areas.

LANDFILL  
CARDBOARD  
PLASTICS/METALS/GLASS RECYCLING  
COMPOSTABLES

DUMPSTER    DEBRIS BOX    EVENT BIN TRIO\*

\*Includes 1 compost bin, 1 plastics, metal and glass recycling bin, and 1 landfill bin



# Tailgates – Event Bins



## Benefits:

- Bins spread out closer proximity to all tailgates
- Ability to collect all three streams consistently



# Tailgates – NEW Dumpster Trios



In the past:  
landfill  
dumpsters and  
recycling carts,  
little signage, no  
composting.



## **Benefits:**

- Offer source separation and signage
- Three dumpster can be delivered by a single driver pickup truck at one time, reducing costs.



# Fan Engagement



## Checklist for Planning a Sustainable Tailgate

Help show your support for **CARDINAL GREEN ATHLETICS** by using this checklist to plan your next Stanford tailgate!

### Reduce Waste

- ☐ Order recycling and composting bins through PSSI for just \$10 each - and don't forget to sort your waste!
  - ☐ If not ordering through PSSI, collect recyclable items (clear bags) separately from compostable items (light green bags) to bring to the closest waste station
- ☐ Bring (empty) reusable water bottles to fill at one of the water filling stations at the Stadium
- ☐ Use Certified Compostable plates, cups, and cutlery - do NOT use red SOLO cups, they are not recyclable!
- ☐ Even better - ask attendees to bring their own plates, cups, and cutlery to conserve resources
- ☐ Use refillable propane cylinders: Find out more at [refuelyourfun.org](http://refuelyourfun.org)

### Choose Sustainable Food & Packaging

- ☐ Offer vegetarian or vegan food choices - meat production has an extremely high environmental impact
- ☐ Order/purchase foods that don't require individual packaging or boxes (buy in bulk!)

### Travel Green

- ☐ Save time and money on parking by using alternative transportation like Caltrain and free Marguerite shuttle

learn more at [gostanford.com/news/2017/8/17/athletics-cardinal-green.aspx](http://gostanford.com/news/2017/8/17/athletics-cardinal-green.aspx)



## ALL ABOUT NO WASTE

Stanford currently diverts 64% of all campus waste from the landfill - and we need your help to get to 75% by 2020. Check out the items below for a list of what's compostable on Game Day!

### COMPOST:

food, food-soiled paper, compostable plastics, and this flyer



utensils, bowls, cups, and lids must be labeled as compostable



pizza box



napkin



paper wrapper



straw wrapper

learn more at [gostanford.com/news/2017/8/17/athletics-cardinal-green.aspx](http://gostanford.com/news/2017/8/17/athletics-cardinal-green.aspx)



# Sustainable Tailgating Display





# Tailgate Kit

- Benefits:
  - Bag distribution helps to solve operational challenges in tailgate areas
  - Fans appreciate education
  - Fans like students!
  - Able to collect fan feedback
- Challenges:
  - Not able to cover enough ground
  - Infrastructure throughout tailgate areas needs to be consistent & correct





# My Cardinal Green

The screenshot shows the 'My Cardinal Green' dashboard. At the top, it says 'Welcome Sara-Katherine Coxon!' and 'You need 84 more points to be eligible for your incentive'. A green box shows '16 Your Earned Points'. Below this, there's a section 'Here's What Others are Doing' with three statistics: 999 people on campus are working on earning points, 144192 kWh per year have been saved by My Cardinal Green users, and 1774 unique actions have been completed by My Cardinal Green users. The main section is 'Promotional Actions' with a list of actions to perform, each with a 'VERIFY' button and a 'TRY ANOTHER' button. The actions are: Volunteer with Sustainable Stanford in 2017, Purchase carbon offsets for a flight this year, Host a green event for your peers, Bring your own towel instead of using paper towels, Use rechargeable batteries instead of disposable ones, and Attend an environmental event on campus that...

**SUSTAINABLE STANFORD**

**My Cardinal Green**

Welcome Sara-Katherine Coxon!  
You need 84 more points to be eligible for your incentive

**16**  
Your Earned Points

**Here's What Others are Doing**

**999**  
People on campus are working on earning points

**144192**  
kWh per year have been saved by My Cardinal Green users

**1774**  
Unique actions have been completed by My Cardinal Green users

**Promotional Actions**

- Volunteer with Sustainable Stanford in 2017 **MORE+** **VERIFY**

**Your Actions to Perform**

When an action asks you to try something for the next month, please

- Purchase carbon offsets for a flight this year... **MORE+** **VERIFY** **TRY ANOTHER**
- Host a green event for your peers **MORE+** **VERIFY** **TRY ANOTHER**
- Bring your own towel instead of using paper towels... **MORE+** **VERIFY** **TRY ANOTHER**
- Use rechargeable batteries instead of disposable ones... **MORE+** **VERIFY** **TRY ANOTHER**
- Attend an environmental event on campus that... **MORE+** **VERIFY** **TRY ANOTHER**

**Rejected Actions You Can Resubmit**

The actions in this section have been rejected by the administrator. Click "More" to view comments and suggestions for how you can successfully complete this action

Sustainable.Stanford.edu\my-cardinal-green

1. Take survey

2. Action dashboard

3. Complete actions and earn points

4. Receive a reward



# Fairly Clean Streams



Recycling Dumpster



Compost Dumpster



# Tailgates – Challenges



## Challenges:

- Pre-game bin set-up
- Incorrect bin liners
- Inconvenient/under-utilized locations
- Scavengers



# Challenges



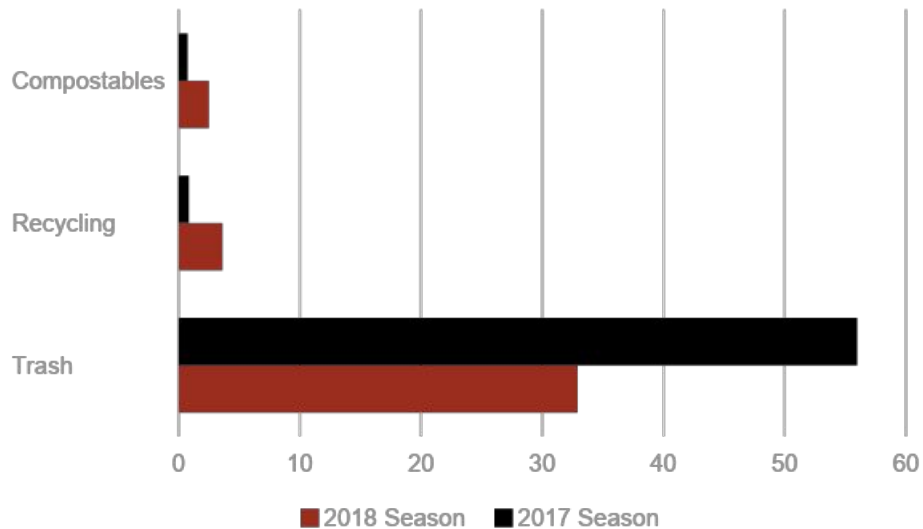
Compost Dumpster



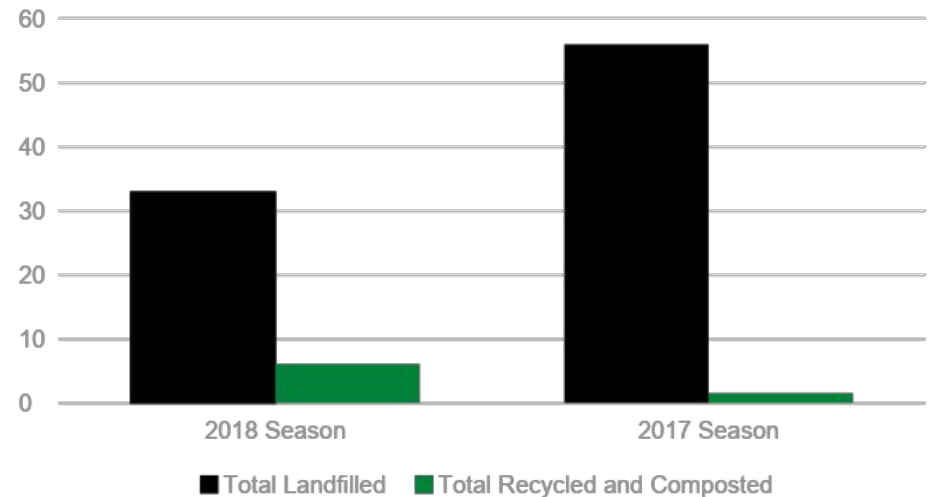
Recycling Dumpster

# Diversion Rates Over Time

## Tailgating Material Breakdown



## Tailgating Diversion



# The Journey

- Post banners and wayfinding signs near dumpster trios to make them obvious
- Zip tie trios of brute bins
- Hand out tailgating kits to tailgaters as they enter parking areas
- Increase coordination with the setup and clean up staff
- Continue to partner with Stanford Athletics and Stanford Office of Sustainability to promote Zero Waste at sports facilities and tailgating areas on campus

**BE CARDINAL GREEN,  
SORT PROPERLY!**

**RECYCLE**



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**Even the  
Stanford Tree  
composts!**



Watch Story of Stuff on-line  
([storyofstuff.org](http://storyofstuff.org)). Required  
reading for all Americans.

Recycling is not just about landfill diversion, it is about replacing virgin material extraction and production which will significantly reduce energy consumption and green gas emissions and create a more circular and sustainable economy.