



# PLASTIC-FREE CAMPUS MANUAL



# Contributors

A big thank-you to all who contributed to the Plastic-Free Campuses manual!

First and for-most, we credit our partner on this manual, Plastic Pollution Coalition (PPC), who helped us with every step in the creation of this resource. We would not have been able to research and compile this document without the time and contributions of the following individuals and groups:

**Genna DeGroot** - PLAN's Creative Director

**Faye Christoforo** - PLAN's Assistant Director

**Christopher Kane** - PLAN's Director of Research and Resource Development

**Bekah Vineyard** - PLAN's Plastic-Free Campus Manual Summer Intern

**Dianna Cohen** - PPC Founder and Executive Director

**Sandra Curtis** - PPC Special Projects Director

**Doorae Shin** - Plastic Free Hawaii Program Manager at the Kokua Hawaii Foundation

**Erica Spiegel** - Administrative Planner and Analyst at the University of Vermont

**Lia Colabello** - 5 Gyres Institute

**Lisa Bjerke** - Discarded Resources and Composting Manager at College of the Atlantic

**Lisa K. Barlow** - Senior Instructor at the University of Colorado Boulder

**Lisa Mitten** - Campus Sustainability Coordinator at Southern University of New York, New Paltz

**Smith Getterman** - Assistant Director of Sustainability at Baylor University

Document Last Updated: 1/9/2017

This manual is written by the Post-Landfill Action Network(PLAN) in collaboration with our partners. PLAN is a US-based organization, therefore, our resources may not be directly applicable on an international scale. If you have any questions about the topics covered in this manual please reach out to [info@postlandfill.org](mailto:info@postlandfill.org). All Rights Reserved.

# Table of Contents

I.	Introduction	i
II.	Going Plastic-Free	12
A.	Welcome	12
B.	Navigating Your Project	13
C.	Seven Reasons to Go Plastic-Free	14
D.	Preparing for Pushback	15
III.	Know Your Stuff: Campus and Community Infrastructure	16
A.	Local Laws and Regulations	16
B.	Existing Campaigns	17
C.	Existing Ordinances/Bans	18
D.	Existing Campus Policy and Operations	22
E.	University (in)capabilities	23
F.	Collaborating with Departments on Campus	24
IV.	Taking Action	25
A.	Conducting a Plastic Audit	25
B.	Formulating a Plan	29
V.	Next Steps: Alternatives to Single-Use Plastics	36
A.	Education as an Alternative	37
B.	Refusing Single-Use Items or Providing Upon Request	38
C.	Encouraging Reusable Items	40
D.	Alternatives Through Procurement	48
E.	Cross-Disciplinary Alternatives	51
VI.	Education & Outreach	52
A.	Partnerships for Publicity	53
B.	Campaigning	55
C.	Making Plastic-Free a Positive Experience	59
D.	Educating Visitors	62
E.	Maintaining the Importance of Recycling	63
VII.	Resources & Support	64
A.	Sustaining Plastic-Free Projects & Initiatives	64
B.	Partners for the Movement	65
C.	So, What's Next?	68
VIII.	Endnotes	69

# About PLAN

The Points of Intervention framework is PLAN's theory of change inspired by the book [Beautiful Trouble](#) by Andrew Boyd and Dave Mitchell. It is a framework to shift and challenge various systems of oppression, in which the points are "...specific places within a system where a targeted action can effectively interrupt the functioning of that system, opening up space for change".<sup>1</sup>

At PLAN, the system that we focus on is the linear consumption economy, in which resources are extracted from the earth to produce a product, that product is distributed across the country, sold to consumers, and discarded to a landfill or incinerator once it is no longer considered useful or valuable. We believe students have the power to dismantle this system through their individual skills, passions, and lived experiences. Whether it be blockading the entrance to a coal mine or distributing an informative zine about upcycling across campus, everyone has skills they can use to intervene in systems of oppression and make way for more just and equitable ones. Nobody can do everything, but everyone can do something!

This theory is meant to reflect the intersections that occur in movement work. With that said, we recognize that our work and focus as an organization is within the broader system of higher education. By operating here, we are inherently supporting a global capitalist system built on patriarchy and institutionalized white supremacy. We fundamentally believe in the power of the people to deconstruct systems of oppression through a wide diversity of actions, and tactics, which we employ in every aspect of our resources and work.

1. Canning, Doyle. Reinsborough, Patrick. "Points of Intervention". Beautiful Trouble. <https://beautifultrouble.org/theory/points-of-intervention/>

# Project Development Advice

To start, we want to lay out some advice that we think can apply to any project, whether it be zero waste focused, or another field of interest. With this advice in mind, read on to learn more about important stakeholders and what value they will hold in your process.

**Find Your Passion:** Whether starting up a new organization, trying to figure out which of the many initiatives on campus to support, or volunteering yourself for tasks within an established group, everyone has got something different they enjoy doing. Find out what it is and how you can incorporate it to increase the likelihood of your project's success. Many times people can surprise you with their skills and the unique ways in which they can apply them.

**Set a Timeline:** In order to keep things moving you must set goals, dates, and what you will need to make them happen. Timelining should be a collaborative process - It's essential for every member of the team to feel like the project belongs to them all throughout the planning and implementation process. It's also essential for the group to know how much time they have to complete tasks and accomplish their end vision.

**Value the Butterfly Effect:** The idea that a small difference can make significant impact later on is at the root of what we do. You never know just how far your actions will spread. Even if despite our best efforts something is not successful, that does not mean the very act of trying won't inspire others to join the fight.

**Set Realistic Goals:** Keeping the butterfly effect in mind, you don't have to make grandiose goals to impact your community. Many student groups get really fired up around an issue and decide to rally around complex problems. Although we all want to dismantle the patriarchy for example, student groups need to be realistic about what can be accomplished in the span of 4 years or even just one semester (which goes back to the importance of a timeline). Life happens and you don't want to be overwhelmed halfway through a project. The more specific the goal, the easier it will be for the group to organize, set a plan, and accomplish it.

## Stakeholders

It is important to form a team of people with the motivation, know-how, and influence to ensure a successful program. Regular communication with your immediate team and other project stakeholders is important for effective planning and coordination. The following are all potential stakeholders that will be involved in the success of your project:

**Students:** At PLAN we believe students are the driving force behind sustainable change. Any sort of waste management project can be a huge undertaking, so drum up support and interest from campus peers and staff alike. A project like this can serve as a community service opportunity for students involved in honor societies, Greek life, or other campus service groups. In addition if your school has already established another PLAN program in the past, those students involved may be a great resource to utilize.

### Campus Organizations & Resources

- Sustainability Office - If your school is fortunate enough to have a sustainability office, USE IT. it's meant to serve students, faculty, and staff who are doing environmental research and projects. They may be a great source of funding, expertise, and support.
- Green/Environmental Clubs on Campus - Has it ever happened that you go to club fair and see 2 other club tables tackling issues very related to yours, yet you've never heard of them? Reach out, join forces, collaborate. Coalition building means more student power, more resources, and stronger movements. Are you a faculty or staff member interested in supporting student initiatives? Sponsor a club!
- Student Government - The student government could be an excellent source of funding for projects, to advocate for student voices and gauge interest with administration. It's good to have them on your side. If a project becomes controversial, they are a great point of contact for student opinion, whether you are a staff member trying to mitigate a tense issue on campus or a student trying to rally support for your cause. Do not underestimate the influence of Student Government officers.

- Environmental Academic Department(s) - College is first and foremost about academics. Why not kill 2 birds with 1 stone and get the academic department to sponsor your passion project. Are you a professor in need of research assistants or support on a project? Connect to students through your academic department and gain fresh insights from innovative students.
- Other Academic Departments - Don't feel limited to Environmental academic departments when reaching out for support. Environmentalism is related to everything in our lives. Draw the connections between hard sciences and Zero Waste, Humanities and the arts as a form of Environmental Justice, etc. A zero waste campus means one where all departments are educated about their role in environmentalism at school.
- Greek Life - As well established and respected institutions with wide networks, it could be good to collaborate with Greek houses to move environmental work. They're a great source for funding, volunteers, event collaboration opportunities, etc.
- School Health/Fitness Centers - Framing environmental health as a public health concern, or teaming up with groups to bring accessible reusable menstrual products to all is a great way to get your school Health/Fitness Center in on the Zero Waste Movement. Making the campus community "healthier" is always a great angle, so take advantage of it!
- Diversity/ Solidarity Organizations - As stated below in this document, we recognize that the struggle of any oppressed group is our struggle too. Intersectionality is key to liberation. Connect with different social and environmental justice groups on campus to cultivate allies and programming that reach a wider audience. Coalition building across diverse initiatives strengthens each group's approach to their work.
- Student Life - Residence life offices are here to support students in enriching the on-campus experience. They are a great place to recruit marketing support, volunteers, funding and event supplies. They also usually have a communications department that can help you spread the word and advertise your project to the student body.

**Administration:** At the end of the day you need to talk to the people in charge of your waste contracts and resource management. This process can be a little intimidating and confusing but you will never know how to work through it until you start asking. Often administrators are willing to assist in giving you the information you will need to get your project done. Frequent meetings with all types of stakeholders involved will keep your project transparent and increase the chances that your findings will be recognized and changes will be implemented. At most campuses, students must be aware that there may be different power dynamics between themselves and administration versus when they are speaking to other student organizers. You need to know who to talk to and remember, their job is to help facilitate your needs.

- President's Office - Large school-wide projects and reform need the approval of the President. A lot of the time, it's easier to get things done with that office's support, connections, funding and resources available to you. Set up an appointment and make sure you have a clear goal and deliverable laid out so as to minimize miscommunication between parties. Having faculty and/or staff support would also be a great way to convince the President's office to stand behind your project.
- Facilities/Physical Plant - Often times, campus infrastructure projects require assistance or guidance from facilities to keep them going. The nature of these types of projects is that they tend to be long term and outlive the four year span of the students who started them. Facilities staff have the longevity and institutional memory to keep projects thriving for generations. Make sure you have a genuine connection with these unsung heroes.
- Dining - As the primary provider of food on campus, Dining Services touch so many types of materials that might be destined as waste. This goes beyond food waste to include other organics like paper plates and napkins, to single-use disposable plastics like take-out boxes and utensils. Dining staff will likely have the final say over programs like reusable to-go containers, BYO discounts, and food recovery initiatives.



- Purchasing/ Financial Department/ Business Office - You cannot buy anything without approval from the Business office. Introduce yourself and keep open lines of communication early on in your project timeline. Don't be afraid to ask questions, budgeting and financial stuff is hard to understand sometimes. You want to make sure that your project is following all guidelines so that you can get that money!

**Community Groups:** Zero waste work does not have to be confined to the college campus. In fact, we encourage working outside of student groups in order to reach the surrounding college community. Additionally, you don't have to be a student to organize environmental programs and campaigns in your area. Whether you are an intern or employee under a sustainability office, a nonprofit in the community, a religious leader, or simply a civically engaged citizen, the advice in this manual is for you! PLAN wants to support those who are dedicated to implementing Zero Waste on campus and beyond so that we can one day live in a just and environmentally-friendly society.

## Team Development Advice

### Recruiting & Retaining Team Members

As you are building your program, it's important to organize a team to help you. These "members" are more than just volunteers, they are fellow leaders and organizers. They are the people who help you establish the program and the logistics, fundraise, recruit and manage volunteers, etc. The best way to retain members is to create incentives for them to keep coming back.

**Publicize Your Group:** Build your social media presence and make it accessible to the public when and where your meetings will be. Use photos of your projects to show off all the cool stuff your group is doing. Post flyers around campus and advertise in the school newspaper. If you are recruiting in person, make sure that you get people's contact information by creating a simple sign-up sheet. Archive this information and follow up with an email encouraging everyone who provided their information to join your project and attend meetings, as well as sharing the perks of being involved.

**Stay Educated:** Social Justice issues are complex and often times controversial. It's crucial to read up on the cause you are advocating for (whether that's inside or outside the group organizing setting). This will make you a more clear communicator when recruiting and pushing for your project, as well as a more culturally sensitive leader who understands the nuances of a topic and how it affects the larger community. Remember, to be welcoming to people who do not have existing knowledge of environmental issues, or have never had access to certain habits that you are trying to promote i.e. composting or recycling. Organizing work is for everyone, so educate yourself and your peers when you get the opportunity.

**Build Responsibility and Accountability:** You've developed your team. Great! Now, how to keep them invested when the going gets tough? Members want to participate, but unless they feel their involvement is necessary to the success of the project, they may not feel like they can fit it into their busy lives. Make sure that all of your members have a role within the project team. The best way to retain team members is to make them feel like their contributions are unique and meaningful. This can be simply achieved by delegating tasks and roles within the group and having check ins to hold each other accountable. When delegating, keep in mind that everyone brings their own passions and talents to a project. Try to match people with tasks/roles that they want to do or have a particular knack for. It may even be helpful to set up an opt-in system where team members can volunteer for tasks that interest them.

**Build Rapport:** When student organizers click with one another they become much more effective. Group members should always feel comfortable working together and asking for help when needed. Group building activities or check-in questions at the beginning of every meeting can set the tone for a welcoming space. Encourage the group to bond in settings outside of the project environment, such as hanging out on a Friday night or going for a hike on a Saturday afternoon, for example. The "vibe" of the group is just as important as meeting deadlines if you want a sustainable team.

## Meeting Structure

Now that you've got an awesome team, let's get down to the day-to-day operations. You and your group will develop your own meeting structure and dynamics over time, but we have a few tips for running meetings smoothly and efficiently.

**Make your meeting space accessible:** As stated above, you want to have an inclusive space. This means making sure that everyone can attend meetings comfortably. Look up accessibility guidelines, or talk to an accessibility director on campus to ensure that your meeting space is in the best possible condition to accommodate all people. Be proactive and attentive to everyone's needs and abilities.

**Ask for folx' pronouns:** Do not assume you know how people identify based on outward appearance. Gender-identity is a highly personal and individual thing. In the alignment with accessibility and inclusivity, don't create a scenario that could misgender others. In cases where someone might not feel comfortable sharing their pronouns, simply ask how they'd like to be referenced to.

**Start with an icebreaker:** This can be an easy way to set the tone of the meeting and break new members out of their shell. A "temperature check" by means of a check-in question can also create a safe space and bring your team members a little closer.

**Set an agenda for each meeting:** The agenda should be posted and available to your entire team before each meeting so that everyone is on the same page. If you have a limited meeting time, allocate time slots for each topic. As the semester progresses find ways to include others in the agenda-making process. This could be sending out a draft of the meeting agenda in a weekly reminder, or posting it in the workspace, inquiring of anyone discussion topics they would like to add.

**Have a note taker:** It's always important for someone in the group to take notes during the meeting to be sent out via email or social media after the meeting is over. This type of follow up creates accountability within the organization, allows for members who missed the meeting to stay in the loop, and serves as an archival record to check that all tasks were addressed and action items accomplished.

**Rotate facilitators:** The facilitator's main job is to ensure that the team sticks to the agenda. As a team leader, you don't always have to set the meeting agenda and you don't always have to be the meeting facilitator. Sharing this responsibility redistributes the workload and allows others in your group to step up and show leadership.

**Delegate:** If you are unable to attend a meeting, your group should have enough information to be independent and continue as usual. Just like with information regarding your project, share the workload with your team in order to instill leadership in others and avoid exhausting yourself. Once the group comes up with big picture goals use weekly meeting to discuss next steps. Encourage others to take charge of various tasks and use this as a way to learn about each person's strengths and what they can bring to the decision-making table.

**Create team accountability:** At some point during the meeting you should have all of your team members check in. They should update the group on the progress of the task they took on, and share any roadblocks they have encountered during the process. This creates a weekly incentive for team members to follow through, and keeps everyone accountable for the timeline they have committed to. Note that this is not a time to discredit or shame someone for not completing a task, but a good way to see how the group can stay in formation and support one another. For example, in PLAN we frame it as Roses, Thorns, and personal/team challenges. This gives team members room to name that they had a 15 page paper due this week and that made them miss their deadline on a task they selected to do. That's totally okay! The key is to be flexible and understanding.

**Include everyone:** Find ways to include all members in conversation and tasks. This might mean allowing another member to talk about a meeting you both attended. Or if you are having a group discussion and you notice someone hasn't weighed in yet you can ask them if there's anything they'd like to add. Some members feel less comfortable speaking up and it's important to make sure all voices are heard.

## Community Care

Organizing is a lot of work. We can all feel a little overloaded or discouraged. We call this “burnout”. In the context of the team, focus on group care. If you or any other individual in the group are feeling overwhelmed and need to take a step back, it's ok and can be worked out through intentional communication and planning. Squad care plays an important role in boosting morale and accomplishing goals, especially during trying periods of the process. Below are a few tenants of proper community care:

- Remember, nobody can do everything, but everyone can do something to contribute to a project, and more broadly the environment. Don't feel pressured to solve every campus issue in your time there. (This is where the butterfly effect comes in handy.)
- Between school, work, activism, friends, and family, life can be stressful. If you see your team is low on energy, have a meeting where you all just chill. Or cancel the meeting all together and let yourselves off the hook.
- Ask for help! This is arguably the biggest challenge of them all, but sometimes we need to lean on others; friends, family, mentors, coaches, advisors, etc. Find someone you're comfortable with and talk about what's bothering you, it's the best way to work through issues. The PLAN team is also here to help every step of the way. If you recognize someone in your group is taxed out, ask them if they need help! As organizers, it's important to ensure that our collective group is grounded and thriving. We can't put it on the person who needs the team's help, we have to connect and check in with each other to see how we can work and struggle together.
- Highlight successes and celebrate group accomplishments. There will be lots of trouble shooting and stress during your campus project process. So make sure the wins don't get lost in the whirlwind of tasks that need to get done. Enjoy the good moments; they keep you going during the bad ones.

## Long-Term Project Health

Leadership isn't about creating followers – it's about creating leaders and fostering shared ownership. Keep in mind, not everyone wants to be a leader and that's fine. We are inspired by Ella Baker's form of leadership, noting that by saying we don't want a “leader” of a movement, doesn't make us leader-less, but leaderful, meaning there are so many rad students who move work across campus.

The key to longevity is developing a “Leadership Team”, so that the work isn't on the back of just one or two leaders by being transparent. Share tips and skills with your fellow students. Keep documentation of all contacts. Bring other group members to important stakeholder meetings. This will ensure that everyone is informed of the roles and tasks involved in the project and can keep sustainable initiatives happening at your campus even after you have moved on to other endeavors! A useful tool for handing over leadership is an end of year “Project Summary” document to provide your leaders in training with once you have gone. This document includes a summary of your role as a leader, annual projects and events involved in the position, contact information for faculty, staff, community members, and other stakeholders that students will regularly be in touch with, and any other important tasks involved in the leadership role.

It is useful to identify a younger student earlier on in the year that you can envision taking over your program once you have gone. This might be a student who shows diligence and a passion to be involved at the get-go, or a student who continues to step up their involvement throughout the year. That being said, it is certainly an undertaking to transfer over leadership roles and responsibilities. Identifying a potential leader earlier on can enable you to train the individual throughout the year by giving them increasingly weighted tasks and attending meetings with you to build them up for their new leadership role. We are here to assist in this process, through providing you and your student in training with skill building resources, as well as advice on how to gradually hand over major responsibilities.

# Collaboration & Intersectionality

Many of us are familiar that many hands make light work. This is all too true when it comes to campus projects. Involving people from a variety of disciplines, interests, and organizational backgrounds builds a program that better serves a larger, more inclusive audience. Not to mention, there's power in numbers when securing materials, space, funding, advertising, etc. When you can make a case that touches multiple groups and points of view, your project is more likely to be 1) successful and 2) meaningful for the campus at large.

Intersectionality has existed for as long as oppression has existed. It was coined as a term in the 1980s from Black feminist theory by Kimberlé Williams Crenshaw. It is defined as understanding the multifacetedness of identities and how these intersect to impact a person's understanding of oppressive systems and discrimination. This theory can also align with how we frame social justice and environmental movements. We know that racism, sexism, ableism, homophobia, transphobia, and xenophobia do not impact people independently of each other. Rather, they manifest and live in the intersections of our systems. For example, the intersections of what it means to be a poor white woman, implies that sexism and classism are impacting her on a daily basis through society and institutions. When we unpack what it means to be a gay and undocumented Latinx male, we can assess how (hetero)sexism, racism, and immigrant status impacts him. Below are some things to keep in mind when organizing in a way that takes intersectionality into account.

**Urgency vs. Care:** At the core of white supremacy culture (and more broadly capitalist culture), urgency and productivity are prioritized over care and quality. Rejecting this means that instead of hounding team members with deadlines and only pointing out what needs to be done next, we show understanding for different people's capacity and focus on their strengths.

**Advertise in varied ways:** Keep in mind the different angles that people could come to this work from, and how to reach out to different organizations that might not have "environment" explicitly in their mission. For example, the slogan "Save the whales" attracts a certain type of

person to environmentalism, but it alienates others. PLAN's staff has lots of resources on attracting different people to a cause. For instance our Summer 2018 intern cohort included an archeologist, a gender justice & equitable access activist, a sustainable business person, a sustainable fashionista, and an environmental policy activist.

**Don't appropriate:** Oftentimes in environmental movements, actions and theories that have been exercised by marginalized communities for millennia become co-opted by more privileged groups. For example, what college students call "dumpster diving" or "minimalism" is really just being resourceful. Be sure to do your research on tactics that you employ in your work, and pay credit where it is due.

Many of the terms that we use to talk about the accessibility, inclusivity, and intersectionality are defined and referenced in our [Diversity, Equity and Inclusion Mandate](#).

## Roadblocks to Success

Even if you have developed the perfect project plan and have a stellar team, things can still go wrong. Never fear, PLAN is here to help!

### Avoiding Administrative "Run-Arounds"

Starting any sort of change-making project or program involves meeting with representatives and administrators from different campus departments. This can become lengthy though, as one administrator may send you to another, culminating in what we refer to as "administrative run-arounds". Start your project off on the right foot by getting a few relevant campus staff members together for an initial meeting to discuss project feasibility and next steps. This way, lines of communication are open from the start and you are less likely to fall into the "run-around" trap.

**Find a Champion:** This individual could be a faculty or staff member who is invested in the success of your project, a professor that you have established exceptional rapport with, or a recent graduate who has been



involved in projects on your campus in the past, and has experience navigating the administrative hierarchy of your college or university. No matter how confident you are in your project, administrators are often more receptive to the voice and suggestions of other staff and faculty members. To get the answers you need and establish important contacts ASAP, ask your “champion” to assist in the setup of your project, and involve them in collaborative meetings with multiple campus stakeholders.

**Collaborative Meetings:** Having a project champion can ensure that you get into the right meetings with the right people, ultimately to get the answers and permissions you need to get the ball rolling. Getting as many of these stakeholders in one room at the same time makes this process more time efficient. Be sure to keep your champion and all other important project stakeholders up to date and in communication to keep the progress of your project running smoothly.

**Be Determined/Find Compromise:** It is very easy for campus administrators and staff to dismiss a student’s ideas. It takes time, consideration, and energy to say yes. Take the time to meet with them to build a trusting relationship and hear out their concerns. Ask for help in making it work for both you and your campus and offer up compromise. Don’t get discouraged if at first you are refused. Rework, try again, and remember everyone—including administrators—wants students to thrive and succeed, you just have to frame your project/goal in a relatable way depending on your audience. What will cost the least money, what will be the least effort on their end? What won’t be a liability, etc? Know what each stakeholder cares about and anticipate their needs.

The PLAN team is here to support you if you need help in identifying your project champion, to help you get the conversation started, and give you our backing that we are confident in the success of your project! With all of this in mind, let’s jump into the nitty gritty of a Plastic-Free project!



# GOING PLASTIC-FREE

## Welcome to the manual for plastic-free campuses!

Now here's a major challenge – a “Plastic-Free Campus”. The ubiquitous presence of plastic in our daily lives might make this seem like an impossible task. Furthermore, plastics have played a huge role in technological innovation to do a lot of good for a lot of people. But, **DO NOT BE DISCOURAGED!** Your target is single-use, disposable plastic... and it's totally doable! Becoming plastic-free is a process that won't happen overnight, so keep in mind these key tips:

1. **Start small**, perhaps with a **Pilot Project**, and build on your successes
2. **Educate** yourself and others on the harms of plastics
3. **Rally support** from all types of stakeholders on your campus
4. **Make a plan** of action!

While the implementation will be difficult, you and your peers have the power to reduce plastic pollution!

### What does it mean to go plastic-free?

Plastic has become an almost-unavoidable part of modern everyday life. It's affordable, easy to mass-produce, and ideal for many innovative technologies. Pledging to transition away from disposable plastics is pledging to end the consumption of single-use items destined for a landfill. It can start with an elevated education about the consequences of plastic production and consumption, and a removal of basic products like plastic bottles and bags, plastic film, and other unnecessary product packaging. While plastic alternatives can be costly, the long-term health and environmental benefits of going plastic-free far outweigh the initial monetary costs.

# Navigating Your Project

**All campuses are different:** what works at one school may require more attention, more push, or may not work at all, for yours. We highlight this by providing case studies of plastic-free initiatives with a variety of outcomes: from the passing of bans that have essentially fallen into students' laps, to initiatives that resulted in unintended consumption of other plastic items. You will find that your university has a specific pace to be followed. Your student group working towards zero waste must explore the kind of attention your institution needs. Ask yourself these questions regarding single-use disposable plastics:

- What do you perceive to be the most concerning issues regarding plastic use on your campus?
- What single-use disposable plastic items are most prevalent on your campus?
- Which “problem” plastics should be a priority target?
- What form of action should you take: a ban, a reduced price incentive for reusables, or simply more education entailing the consequences of plastic use?

**Every project will have costs and benefits to weigh.** For example, is it better to purchase compostable paper plates that are still considered single-use items, rather than plastic ones that can be recycled? The answers lie within a wholesome look at your university's capabilities. If you are not currently able to compost commercially, then serving food with certified compostable cutlery is probably not the best idea. If your university receives rebates from its recyclables, it may not be possible at the moment to go completely plastic-free. Focus on transitioning your campus away from a culture that is disposable and single-use. Remember that the main intention behind a plastic-free campus, similar to every PLAN project, is to change the way we consume, how we think about throwing things “away” and, ultimately, to reduce waste!

This is super important! You might want to talk about it with your Campus Coordinator.

# Seven Reasons to go Plastic-Free

Brought to you by PLAN and the Plastic Pollution Coalition

1. Single-use disposable plastics have a massive carbon footprint. Whether made from petroleum or plants, plastic manufacturing is not efficient due to the scale of production.

2. Both the production and disposal of single-use plastics often emit massive amounts of dioxins, a highly toxic byproduct linked to increased cancer rates and other human health effects.

3. Plastic lasts forever: Plastic can never be broken down by natural processes; every particle of plastic that has ever been created still exists in a form toxic to all terrestrial and marine life.

4. Plastics can be challenging to dispose of. Not all localities have the infrastructure to recycle single-use plastics; thus, many recyclable plastics take up valuable landfill space. When not able to be recycled or landfilled, they are often sent to incinerators, emitting environmental toxins into the atmosphere.

5. Plastic poisons our food chain: It is increasingly found in the ocean and guts of marine life, extending to affect the health of human populations who rely on fish and other marine life for food sources.

6. Going plastic-free can save you money! Relying on reusable items enables you to avoid constant purchasing of disposable items.

7. Single-use plastic items perpetuate a wasteful, throw-away culture. Our society is far too valuable to be thrown away!

Now that you've got the facts about issues surrounding plastic pollution, we want to help you take action! Among all of the following best practices to becoming plastic-free, we outline:

- How to navigate your campus and local community infrastructure
- Existing initiatives, campaigns, and legislation targeting single-use plastics, and where to find information about plastic-free initiatives near you
- How to conduct a Plastic Audit, and use that information to make a plan of action
- Alternatives to specific single-use plastic items, and resources for further support!

## PREPARING FOR PUSHBACK

As we have mentioned, you may receive pushback about going plastic-free. Be prepared for critics to challenge you with these myths about plastic bag bans and going plastic-free:

**Reusable bags spread bacteria:** Some studies out there try to make the case that reusable bags encourage the spread of infectious disease through harbouring bacteria like E. Coli. The reality is that bacteria is found on EVERYTHING, including single-use plastic bags. If your reusable bag is dirty, give it a wash or wipe it down. It's also good practice to use separate bags for meat and produce.

**Reusable bags are toxic:** Any synthetically made product has the potential to contain unsafe amounts of heavy metals or other toxic compounds. Eco-friendly intentioned products are no exception to this. Likewise, reusable bags are no more likely to be toxic than their disposable counterparts. Navigating this is part of being an informed consumer!

**Banning plastic bags means people will just use disposable paper bags instead:** That is certainly a logical assumption, but paper bags can be the lesser of two evils. They are more easily recyclable AND have the ability to be composted. Oftentimes, bag bans will put charge a small fee onto other disposable bags, so that consumers are still encouraged to bring reusables.

**Charging for single-use bags is just a scam for stores to make money:** Fees applied to single-use bags are used to fund an establishment's procurement of more durable (thus, more expensive) bags to comply with the law. The consumer was never getting single-use bags for free in the first place; the cost of procuring them is often tacked onto the prices of products that the establishment sells.



# KNOW YOUR STUFF:

## CAMPUS & COMMUNITY INFRASTRUCTURE

Start big and learn the status of the area surrounding your University in regard to any kind of plastic ban or legislation. This knowledge is a powerful tool in moving your campus to take steps. Once you know, you can act. The second half of this chapter covers who to talk to to make change. Read on for tactics!

## Local Laws and Regulations

As the general public becomes more aware of the dangers of single-use disposable plastics, new legislation is calling for sustainable alternatives. While not always obligated to follow suit, universities and colleges can adopt local regulations or ordinances if the campus population expresses support. These community laws can provide a baseline for new student campaigns, or a final push for on-campus initiatives. See case studies below for some collaborative successes and challenges!

### So where do you find all this information?

There are a variety of resources to consult, including web resources from leaders in the plastic-free movement, to talking with city council representatives. Check out the following web resources to find out if bag bans and other plastic-free initiatives exist in your area:

- Chico Bag's "Track the Movement" interactive map
- The National Conference of State Legislation site detailing passed and proposed plastic bans by state
- The Plastic Bag Ban Report for bans nationally and worldwide
- The Surfrider Foundation
- Social media hashtags: #bagban, #banthebag, #plasticbags, #banthebead, #plasticpollutes, #bringyourown





## Existing Campaigns: University of Hawaii Manoa

Students at the University of Hawaii Manoa approached administration about banning polystyrene (Styrofoam™) in campus food establishments only to find that dining services had already begun taking steps to phase-out the material on their own accord. Students latched onto this discourse and kept close communication with dining services to consult them on what a polystyrene phase-out would look like. This group established a petition committee with representatives from the local Surfrider Foundation to draft effective policy language, and delegate the proposal out to individual campus food vendors. It was also helpful to have a community member who worked for World Centric, a company that manufactures compostable to-go ware, as a part of the petition committee to be able to attest to the affordability of compostable alternatives. Student organizers recognized that, had they drafted the proposal alone without input from a variety of campus representatives, they would have faced much more pushback. Ultimately, the combined force of students and dining hall operations made passing of the ban, and its subsequent implementation, more effective.

Source: Endnote 1

# Existing Municipal Ordinances & Bans

## San Francisco Food Service Waste Reduction

A 2006 city ordinance prohibits the use of polystyrene to-go containers by all food service operations in San Francisco. This is in an effort to reduce plastic marine debris and avoid the potential health impacts of single-use plastic products. The terms are as follows:

- prohibits the use of polystyrene (Styrofoam™) to-go containers by all establishments serving food in San Francisco
- requires food vendors and restaurants to use only compostable or recyclable to-go food service ware

With the infrastructure already in place at the local level, the University of California San Francisco implemented a similar policy mandating all private food vendors leasing space on campus to comply with the city ordinance, resulting in the ban of polystyrene on campus.

Source: Endnote 2

## SUNY New Paltz Plastic Bag Ban

In April of 2015, the Village of New Paltz, New York passed a ban that prohibits village businesses from giving plastic shopping bags to customers. The State University of New York (SUNY), located in New Paltz, was not required to abide by the ban, but received support from the campus bookstore and their dining hall contractor to latch onto the legislation and discontinue the use of plastic bags in their campus operations, ridding the campus of single-use plastic bags. While students had already been organizing around a plastic bag ban and prepared to lobby for such, the village's legislation set a precedent that required no further student action. Sometimes the change you and your group are seeking falls right into your lap!

Source: Endnote 3

## Something to Look Out For: Microbead Bans

What started as a student project in an honors collegium ecology class resulted in the University of California Los Angeles becoming the first university campus to successfully ban the selling of plastic microbead-containing products. After teaming up with the 5 Gyres Institute (see the "Resources and Support" chapter for more info), five students presented their project proposal to the Student Association government body (ASUCLA). ASUCLA voted to pass the ban that will prohibit the procurement and selling of commonly used products containing plastic microbeads from all campus student stores. The ban will be fully active at the start of the Fall 2015 academic term, and after all existing stock containing plastic microbeads has sold out.

Source: Endnote 4





The fuss surrounding microbeads stems from their miniscule size which enables them to wash right down the drain of sinks and showers, polluting ecosystems and accumulating through food chains. Listed in the ingredients of many commonly used hygiene-care products as **polyethylene** and **polypropylene**, microbeads pass through our pipes and into waterbodies. There they accumulate into larger plastic conglomerates, which are eaten by fish and other ocean life, ultimately passing into human bodies through marine food sources.

Check out some of the cost effective, exfoliating microbead alternatives:

- almonds and coconut shells
- jojoba or cocoa beans
- apricot and other pit fruits shells



A handful of major companies are transitioning away from products containing plastic microbeads, and in places like California, statewide bans are being proposed to the legislative table. Entire counties have already made the transition, such as Erie County in New York who passed a ban in July of 2015 that prohibits all stores in the town from selling products containing microbeads by January of 2016. These types of actions at a university campus level, county level, and state level can act as a push for federal legislation.

For more on how to ban plastic microbead-containing products on your campus, see the 5 Gyres Institute's Microbead Free Campus Tool Kit on the [Member Hub](#).



# Case Studies: Barriers to Bans

## University of Vermont Plastic Bottle Ban

On the first of January 2013, the University of Vermont implemented a campus-wide plastic water bottle ban after a four year push by students and faculty. While this was an impressive accomplishment, it didn't produce the results that supporters had in mind. After the ban had been in place for some time, a study conducted on campus revealed unintended outcomes: without the option to purchase single-use water bottles, students opted for sugary beverages instead. Overall more plastic bottles were being purchased on campus.

Aggravating the initial sustainability issue that it set out to address, the ban also extended to affect students' health choices. As a result of the study, several revisions were made to how the university would enforce the bottle ban. Free water is now available at all dining locations through soda machines provided by the dining contractor. New regulation requires half of bottled drinks offered on campus to contain 40 or fewer calories per serving. Additionally, the University would like to add terms to their dining service contract to expanding the to-go container program, and no longer offer bottled beverages where the same drink is available from a soda fountain.

Source: Endnotes 5 & 6

## State of Arizona's "Ban on Bans"

Local bans may not always serve to ease the implementation of an on-campus initiative. The state of Arizona enacted a "ban on bans", prohibiting the banning of plastic bags through a "health care bill" in April of 2015. SB 1241 states that no city or town can "impose a tax, fee, assessment, charge or return deposit ... for auxiliary containers". This ultimately prohibits a plastic bag tax or ban. Legislation like this makes for more challenges in becoming plastic-free, but it certainly does not make it impossible. Work around these hurdles with education; have students sign on to personal commitments to cease their use of a particular single-use plastic product. Furthermore, education around the existence of plastic alternatives on campus can discourage single-use plastic products without banning them all together.

Source: Endnote 7

## Case Study: Baylor University's Refusal of Polystyrene

The polystyrene-free Baylor University campus and athletic facilities used a single event to pave the way for campus-wide policy. This event showed the power of student pressure, and the importance of framing bans in a positive way.

A student group sought the Sustainability Department's sponsorship for one of Baylor's largest campus events, for which the department agreed under the condition that all vendors be polystyrene-free. ChiK-fil-A was the only vendor to refuse this request. When they were told that their refusal would exclude them from this major campus event, they conceded.

After the success of such a large event, the Sustainability Department facilitated a verbal agreement among campus vendors to extend the polystyrene-free standard into the university's sustainability policy. Retail vendors phased out polystyrene products over the next few months, using the remainder of their stock before buying alternatives. Since then, the policy has extended to athletic concessions on campus. To evaluate policy compliance, the Sustainability Department performs campus-wide "Styro checks" once a year, in which they find that Styrofoam™ containers are occasionally brought by individuals from off campus. This behavior is discouraged by the Sustainability Department through reminder emails.

It is important to note that Baylor University did not "ban" polystyrene, but instead focused on just getting it out of the waste stream. This was a deliberate choice, as a ban has negative connotations and often makes people defensive. By **educating** about the dangers of polystyrene, **altering contracts** with on campus vendors, and **encouraging alternatives**, Baylor was successful and received little resistance in ending Styrofoam™ use.

Source: Endnote 8

# Existing Campus Policy and Operations

“Universities and colleges often develop environmentally preferable purchasing plans for everything from green energy and office supplies to food service ware products. These plans can serve as your team’s university-supported rationale for implementing plastic source reduction. Your team should identify and review all current plans and, where lacking, work to either strengthen them or implement new ones.”

— Marine Debris and Plastic Source Reduction Toolkit for Colleges and Universities; the Product Stewardship Institute and EPA, February 2015

Your university may have made claims such as the above for sustainability initiatives as a part of campus-wide policy. They may be in writing or unofficially undertaken. Some examples of these claims might be a promise to decrease campus carbon emissions or a commitment to be Zero Waste by a certain year. Browse your campus website to find information of any existing and proposed sustainability policies; oftentimes they will be listed on web pages for the Procurement Department, Sustainability Office, or on a page designated explicitly for campus policy and procedures. These can be leverage for your campaign.

If your university has limited recycling capacities for recovering single-use plastic items, there is all the more reason to eliminate these items on campus. However, for schools with recycling infrastructure, full blown bans of plastic items may not financially make sense to your campus administration because of recycling rebates and other incentives that your campus receives. Talk to your **Procurement Department** as well as the department that handles **waste management** on your campus to determine if any financial incentives drive campus recycling operations. If this is the case for your campus, there are alternatives out there for your campus to mitigate its plastic footprint:

- 1) Decreasing **campus-wide** procurement and consumption of **non-recyclable plastics**
  - polystyrene containers could be replaced with another material (see Baylor University Case Study pg. 21)
  - Make some campus events or student org programs plastic-free (pg. 27, 48)
- 2) Encouraging **individual behavior change** for single-use plastic consumption (pg. 37-47)
- 3) Increasing **recycling participation** and reducing recycling contamination on campus (pg. 51)

See the “Education and Outreach” chapter for advice on advocating the plastic-free message through all of the above approaches.

# University (In)Capabilities

Perhaps you have been strategizing to get your university to purchase reusable dishware for all eateries on campus. You have even succeeded for one or more locations, however, you've run into a few instances in which an eatery is unwilling to comply. Perhaps they don't have funding to purchase reusable dishware or the space in which to wash and store it. Rather than giving up on the stubborn locations, move down the waste management hierarchy to evaluate your next-best option. Check out this case study from the University of California San Francisco to see how they handled a situation like this:

## Case Study: UCSF Cutlery

A plastic audit conducted at the University of California San Francisco determined plastic cutlery to be the third most purchased plastic item on campus. The university could pursue two major alternatives: provide reusable cutlery or purchase compostable cutlery. While the waste management hierarchy favors reusable material, the university cafeteria does not have the equipment nor the space to provide on-site washing for reusable dishware. They do, however, participate in a commercial compost program that is capable of accommodating an increase in compostable cutlery. Furthermore, the university has plans to prioritize the addition of commercial dishwashing equipment in future cafeteria renovations.

Source: Endnote 9

As we've just seen, there are a variety of ways to move towards a plastic-free campus. Existing laws and ordinances may serve to make the switch effortless, or may force you to get creative with your education and outreach efforts. Even if you are able to pursue a solid alternative to single-use plastic products, every alternative will have its own set of complications. For example, compostable products may not be compatible with the composting infrastructure of your campus or surrounding community. Furthermore, these operations might not even exist for you to consider compostable bioware as a sustainable plastic alternative.

For a list of alternatives to specific products see the "Next Steps: Alternatives to Single-Use Plastics" chapter



# Collaborating with Departments on Campus

Whether you are trying to pass a ban on campus, change procurement, or establish a reusables campaign, you will need backing from your institution. Remember to include others on campus who are affected by these initiatives. Some examples of important stakeholders to include in your initiatives are:

- dining service workers or food service provider representative: chefs, servers, cafe managers
- campus waste management service staff
- custodial staff
- Procurement Department staff
- student groups working for campus change: services groups, environmental groups
- professors, faculty, provosts, department chairs
- community members that may be affected

Remember, having a signature on a petition from a major campus faculty, agreeing to support your initiative or campaign, can go a long way!

## Another Important Contact: Private Vendors

If your university leases space to private food vendors, advocate for sustainable procurement language to be included in these contracts. Check out the language used in a draft statement below from the petition committee at the University of Hawaii Manoa advocating for a ban on to-go polystyrene products:

*"In the interest of trash reduction, public health, marine life protection, and environmental sustainability, the University of Hawaii at Manoa is committed to undertaking a transition to the use of more responsible food service products. As a first step, the University hereby prohibits the purchase and use of disposable expanded polystyrene (EPS) foam food-service products on campus. This prohibition will apply to new (or renewed) food service contracts. Vendors operating under existing contracts will be encouraged to phase out EPS foam products use as soon as possible. In addition, university personnel are advised not to purchase disposable EPS foam food products with university funds and not to use such products at campus events."*

-UH Manoa Commitment to the Use of Sustainable Food-Service Products  
February 28, 2013 DRAFT statement



For the full project proposal to ban Styrofoam™ products on the University of Hawaii Manoa campus, see the [Member Hub](#).



# TAKING ACTION

Find your target and make a plan for campus change with the guidance of this section. Remember to think big, plan for leadership turnover and go for small wins within a large campaign.

## Conducting a Plastic Audit

How do you begin tackling single-use disposable plastics on your campus? The first step is to conduct a plastic audit. Check out and record the following:

- ☐ **What** plastics are used on campus and **where** do they come from?
- ☐ **Which** of these items are most frequently used?
- ☐ **Where** are single-use plastics disposed of?
- ☐ **Who** is using single-use disposable plastics on campus?

Plastic audits can be conducted through multiple approaches, and will set the stage for your plan of action for a plastic-free campus. No matter which approach you choose, try to **be transparent** to students and other campus residents **about why you are conducting a plastic audit** - the sooner you start to educate and outreach the better!

For more information on assessing plastics and other waste materials, see PLAN's Waste Audit Manual.



# VISUAL ASSESSMENT

**Note and track** all single-use plastics you see on campus, from trash receptacle contents, to what cafés and campus vendors are distributing to customers. Observe passers by walking to class: What are students carrying? Coffee cups with plastic lids or iced drink cups? Granola bars in plastic wrappers? A sandwich in a baggie or plastic wrap? While taking records of the plastics you observe, keep these questions in mind:

- What kinds of plastics are being thrown away?
- Roughly, what ratio of these are plastics that can be recycled?
- What/How much of that is material supplied by your campus?
- What/How much is being brought onto campus from outside sources?
- Who is associated with these outside sources and how will you communicate with them?

Observe the contents of vending machines on campus. How many in total are they and where are they located? What kinds of plastics appear in them? Which items have potential alternatives?



For a template tracking form to use during your Visual Assessment, check out the [Member Hub](#).





# PROCUREMENT INVENTORY

A procurement inventory provides more verifiable data on campus plastic presence and insight into campus procurement practices. This will require communication with campus dining services, cafes and other eateries, and perhaps the procurement department through which these establishments purchase their to-go products. Ask for a purchasing list and note the specifics of all of the single-use plastic products that are purchased, including:

How much of the item is purchased

How much the item costs per unit purchased  
(include shipping!)

What company produces each product and/or the  
supply center from which it is shipped

What the product is made of and how it is packaged

This information will be useful for calculating any sort of cost-benefit analysis of plastic product alternatives that can be presented to campus administration. After taking an initial procurement inventory, you can further analyze the products that you have recorded by finding out if product vendors provide alternatives, and what the costs of these alternatives are in comparison to the materials that are currently being purchased.

# Numbered Plastics: Cracking the Code

Ever wondered what the point of that little triangle is on the bottom of water and shampoo bottles, usually with the number in the middle of it? The number and code underneath it designates which type of plastic resin that product container is made out of. Plastics can be numbered 1-7, with number 7 being a catch all for a whole slew of “other” plastics that aren’t necessarily recyclable. Check out this infographic from the 5 Gyres Institute to crack the code on plastic numbering.



# Formulating A Plan

Once you have conducted a plastic audit identifying the major sources of single-use disposable plastics on your campus, where they come from, and who is using them, follow the steps below to formulate a plan for a plastic-free campus!

## STEP 1: FIND YOUR TARGETS

### Petroleum-Based Products & Bioplastics

There are many products advertised as plastic alternatives that are petroleum-based and still contain plasticizers, and thus pose similar health and environmental effects to traditional plastics. Try and advocate against these single-use items in your plastic-free initiatives.

Bioplastics are composed of “renewable biomass sources,” like corn or vegetables oils, that are processed into a compound called polylactic acid (labeled as PLA #7). Their composition makes them less fossil-fuel-intensive in production and less hazardous in disposal. However, there is often a huge amount of energy sources put into growing the crops for the production of bioplastics. While bioplastics are designed to be “biodegradable”, this term does not guarantee that an item will fully break down in a compost system. Furthermore, the nature of bioplastics’ composition interferes with the operations designated for recycling regular plastics. **In other words, you cannot mix bioplastics in with recyclables!**

If implementing reusables is not feasible for your campus at the moment and you opt for single-use bio-plastics, we suggest using WorldCentric products. The majority of plant fiber products from World Centric are composed of wheat straw, a byproduct of agricultural production that is often thrown away or burned.



For more on the issues of land use for biofuels and bioplastics in place of food production, check out the [Environmental Working Group](#)

## Single-Use Plastics

Freedom from plastic should include all plastic items that would normally be disposed of after one use. This includes (but is not limited to) beverages in plastic bottles, items in plastic wrap or plastic containers, utensils, cups and lids, straws, stirrers, bags, and any disposable polystyrene (Styrofoam™) products.

## Beyond Bottles and Bags

Single-use plastic bottles and bags are just the first steps to becoming a plastic-free campus. Future purchases of plastic materials should be avoided when possible, especially when the products are hard-to-recycle or unable to be recycled. For example, plastic shower curtains cannot be recycled and alternatives should be considered when old ones need to be replaced. Another target to be aware of is products containing plastic microbeads. For more on microbeads, see pg. 18.

*Note:* The Difference Between Biodegradable and Compostable

**“Biodegradeable” is not the same thing as “compostable”!** If an object is biodegradable, that means that it is capable of being decomposed by natural processes. This does NOT necessarily mean that the item will break down in a composting system to be used in a finished compost product. There is **no time scale** requirement for biodegradation - everything will biodegrade eventually. Compostable means that an item or product will break down completely within a given time. Compostable is a term with set requirements in regards to biodegradability, disintegration, and ecotoxicity:

- 1) Biodegradability - 60-90% will break down in 180 days
- 2) Disintegration- 90% of material will break down into pieces 2 mm or less in diameter
- 3) Ecotoxicity- when product breaks down, it will not leave behind heavy metals that are toxic to the soil above a standard level

Bioplastics and single-use compostables are often viewed as a feasible alternative for campuses who have access to composting operations. However, we encourage your campus to abide by the waste hierarchy, to reduce and reuse before creating more waste that must be composted. Single-use compostable items still require resources and energy to be produced, packaged, and transported. Furthermore, many industrial composting facilities are opposed to large amounts of compostable plastics in their material, because the chemical makeup of #7 plastics can interfere with efficient decomposition of other materials<sup>1</sup>. For a more detailed analysis of the use of single-use compostable items, see the Case Study from the University of Colorado Boulder in the “Plastic Alternatives” chapter of this manual.

Source: Endnotes 10 & 11



(Image via 5 Gyres)

For more information on composting, see PLAN's Food Recovery manual.



## STEP 2: TARGET LOCATIONS

While campus eateries are the common source of single-use disposable plastics on campus, there are many other source locations to take into account. Some are prime locations for single-use plastic reduction and some are hot spots of information from where you can continue to spread your message.

### Promotional Areas (be sure to work with stakeholders on pg. 24)

Any place displaying school pride, like the campus bookstore or a sports venue, should also represent your campaign. Talk to your campus vendors about selling reusable drinkware, like water bottles and coffee thermos; ask that cashiers and other store

staff be trained to first ask customers if they need a plastic bag for their purchase, rather than offering it automatically. Look into the feasibility of installing water bottle filling stations. **Other ideas include:**

- **not automatically offering** straws for drinks, napkins, and other concessionary products at sporting events
- **selling reusable bags** at the bookstore with your campus logo

Residence halls are a prime location for targeting a large audience of potential plastic users on campus. In order for this to be successful, students need some means of utilizing plastic alternatives, especially those that already exist within dorm locations. For example, highlight existing water fountains and sinks in the building to sway students from purchasing bottled water.

Resident Advisors (RAs) are usually required to hold a certain number of programmed events each term. These events are a great opportunity to reinforce plastic-free habits and education. Reach out to residence hall staff to plan plastic-free program trainings for RAs at the beginning of each term.

### Residence Halls (for Residence Hall Program Ideas, see the "Education & Outreach" chapter)



## Departments and Staff

(see “Education as an Alternative” on pg. 37)

In addition to students, be sure that other members of campus are aware of plastic-free campus initiatives. If staff and faculty understand the effort to go plastic-

free they can pass information onto students and campus visitors. probably Plastic-free efforts can be incorporated into staff meetings, office operations, and class instruction so that these habits become a part of campus culture.

## Events

(see pg. 34)

Events are a fun and inclusive way of extending the university’s plastic-free initiatives to a larger audience. Events provide opportunities to:

- Recruit new volunteers and student groups to join in plastic-free initiatives
- Frame initiatives in a positive light, through fun and interactive activities
- Extend initiatives beyond everyday campus operations
- Advertise incentive programs that give discounts for bringing your own reusable items

Work with event planners to brainstorm procurement alternatives to purchasing single-use plastic materials and supplies. Brand these events as plastic-free in your invites, and make it explicit at the event itself. Connect with student clubs, groups and individuals coordinating events so they can join in and help cultivate a plastic-free culture.

# A QUICK HOW-TO GUIDE FOR PLASTIC-FREE EVENTS!

## Pre-Planning

- Coordinate plastic-free purchasing by communicating with the caterer or food service provider that there should be no single-use plastic packaging for the food
- Buy in bulk or opt for food and materials that are packaged in paper, as long as you have the ability to compost or recycle the material
- Serve beverages fountain-style or out of out of pitchers
- Provide reusable cutlery and serving utensils
- Opt for reusable decorations, like cloth table covers or woven placemats, or consult the art or theatre department for old set pieces (any plastic decor should be reused for future events)
- In your event invites, encourage guests to bring their own reusable water bottles and coffee mugs - if it is a picnic type event, attendees can even bring their own plates, bowls and utensils!

## Important Reminders: BYOE



*In outreaching for their annual convergence event, Zero Waste Youth USA encouraged attendees to BYOE.*

Bring Your Own Everything! We'll provide delicious food, but you'll need to bring your own reusable cup/thermos, plate/bowl, utensils, hankerchief etc. That's right, we walk the talk!



## During

- Set up clear signage for refillable water stations, water fountains, and waste bins
- Use fun displays to advertise the event as plastic-free
- Have interactive games around the plastic-free movement, with reusable prizes!
- Monitor bins throughout the event to ensure waste streams are properly separated (i.e. compost, recyclables, landfill trash). We like to refer to this job as “Trash Talkers”
- Train event staff to talk about plastic-free and the sorting of material in an encouraging way – they should not feel like they are educating, rather than policing

*Note: Be prepared to do a bit of dumpster/bin diving to separate out contaminants!*

## Clean-Up

- Do a final sweep of bins to ensure waste streams are properly separated (i.e. compost, recyclables, landfill trash)
- Follow up on your material. Make sure each bin is picked up/ dropped off in the proper location in a timely manner after the event
- Recycle or reuse any plastic that did end up at the event, such as cellophane on catered food or plastic bags from an outside vendor. All of this has the potential to be washed and reused for future events!
- Debrief with your team and the event organizers to assess what went well and what could be improved



# NEXT STEPS:

## ALTERNATIVES TO SINGLE-USE PLASTICS

Congratulations, you've gotten to the best chapter in this whole manual! This is where we talk about the many alternatives to single-use plastics. Luckily for you there are MANY options – so be aware that this chapter is lengthy!

First, we talk about **Education**. If people know the problem with plastics they will be a lot more likely to assist and accept the change. **Refusal** is next, addressing those pesky disposable items so common at to-go eateries. Your next mission is to replace those single-use plastic items with – and encourage the use of – **reusable items**. We cover bottles and fountains, bags, dishware and reusable containers, cutlery and vending machines, finishing up with an analysis of different styles of positive and negative reinforcement. Thinking longer term, we go on to discuss **procurement policies** for campus-wide change. Finally, **cross-disciplinary alternatives** acknowledge that a Zero Waste campus must be a plastic-free campus.

As you move forward remember the keys of running successful campaigns: build solid relationships with your team and the offices you work with (See “Avoiding Administrative Run-Arounds” in the Introduction chapter), keep an open mind, and be in touch with your Campus Coordinators here at PLAN for guidance!

# 1. Education as an Alternative

Transitioning your campus to becoming free of single-use disposable plastics requires tangible and trackable goals. Keep in mind that many of your successes might take qualitative forms, and may be hard to measure. There may be too much pushback from your campus to officially ban single-use plastics; if this is the case, all is not lost! You can still EDUCATE the student body on the dangers of plastics, and their ability to make a direct positive impact by choosing to live their personal lives without them. For example, the dining hall may still give out straws but that doesn't mean people have to take them. When students are given the ability to choose, rather than having behavior dictated to them, they feel more empowered! Furthermore, with the ability to choose, students come to better understand the initiatives in place and why they matter... this new attitude is more likely to be sustained beyond their time at the university!

Check out the "Education and Outreach" chapter on pg. 52 for guidance on making education an effective component of your campaign

**Note: Remind Others About the Waste Hierarchy!**  
Refuse, Reduce, Reuse BEFORE Recycle

When considering alternatives to plastics, always consult the hierarchy of waste reduction. For example, compostable wooden stirrers are better than plastic ones, but a reusable spoon is best because it doesn't have to be discarded! Furthermore, to successfully transition to plastic-free, your campus will likely have to pursue a variety of alternatives:

"Consider a balance between strategies related to **procurement** and **targeted initiatives and campaigns** to rapidly decrease use of disposable plastics."

– Marine Debris and Plastic Source Reduction Toolkit for Colleges and Universities; the Product Stewardship Institute and EPA, February 2015

This statement highlights a number of important points. The university, as an institution and a business must provide sustainable options for its students. Students also have the responsibility as consumers and campus residents to make decisions that align with sustainable campus policies, but these options must be easily accessible to the entire campus body.

## 2. Refusing Single-Use Items or Providing Upon Request

Dining areas and eateries are prime locations for complementary single-use items making them a primary source for generating waste on campus. Working with these areas can be a huge stride in your plastic-free efforts. Rather than offering napkins, straws, plastic bags, coffee sleeves, and ketchup packets in a free-for-all fashion, eateries can offer these items by request only. Better yet, many of these items can be displayed in a self-serve, bulk fashion. Seriously, who uses only one ketchup packet anyway?!

### Tips & Tricks



- Rather than purchasing boxes of creamers in small plastic containers, an eatery can provide access to a small pitcher of cream and refill it as needed
- Ketchup, sauces, and salad dressings can be provided in refillable dispensers. These dispensers will require a larger monetary investment up front, but will pay for themselves in the long run!
- Students can be encouraged through signage to put condiments and other toppings on their food before leaving the eatery to avoid small plastic packets and containers



Keep in mind: Eliminating items like napkins and plastic bags altogether may violate the health and safety codes for campus eateries, but providing these items upon request can be a feasible alternative. Speak with eatery managers to ensure that their health and safety codes allow the housing of complimentary items in the back-of-house instead of the store-front.

# Case Study: Lehigh University Reusable Dishware

Student Auxiliary Services at Lehigh University in Bethlehem, Pennsylvania, provides free reusable dishware to campus groups for their events. Dishware must be booked at least one week in advance, and the order confirmed within 3 days of the event. The event holder is responsible for picking up and returning dishware. There is a \$5 charge per item that is lost during the event. The reusable dishware program can provide up to 150 dinner plates, appetizer plates, small and large bowls, hot and cold beverage cups, forks, spoons and knives.

Lehigh encountered some logistical hurdles to learn from in the process:

- In the case that requests are made for multiple events on the same day, there may not be enough dishware to accommodate every event
- Most events take place far from the location of the dining hall, so students are sometimes resistant to transporting dishware across campus
- Originally, Lehigh only offered plates and cutlery through the dish rental. This limited what students were able to serve at their events. They now satisfy a wider range of users by offering bowls, cups, and coffee mugs
- Totes for storing dishware had to be purchased

This is a great example of how these types of programs involve the work of many different campus departments: **Residential Services** oversees the program, including managing the website, taking requests and questions, etc., student **Campus Eco-Reps** advance the program through advertising to student groups on campus, and **Dining Facilities** staff assume the responsibility for counting the dishes/cutlery, distributing it to students and counting/washing the returned items.

Source: Endnote 12

Something to think about: **To-go locations** can be tricky because they do have to be carry-out compatible, so there may have to be an ongoing conversation with the particular eatery. You will have to get creative: If a student wants a bagel with cream cheese on the side, does this mean the food service provider must purchase single-serving cream cheeses, which come in plastic packaging? OR can cream cheese be purchased in bulk and served to the student wrapped in wax paper instead?



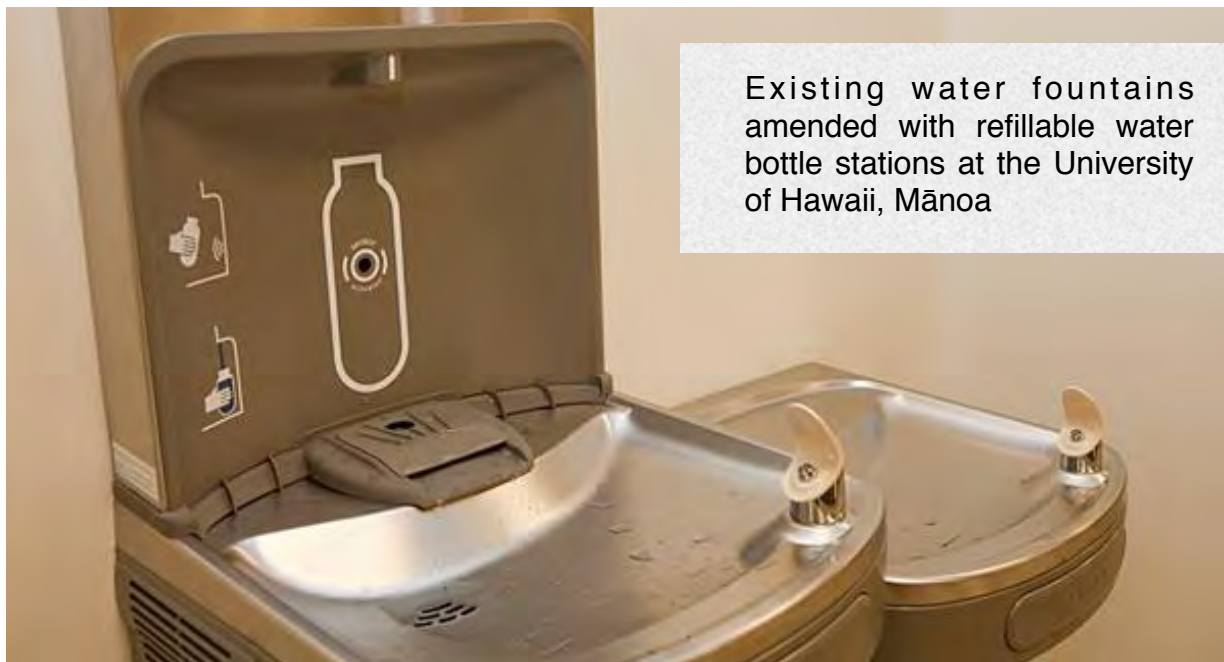


### 3. Encouraging Reusable Items

#### Bottles & Existing Water Fountains

Whether or not your campus is able to implement a ban on single-use plastics, it is important to highlight existing infrastructure that assists campus residents in living plastic-free. Post maps and signs around dorms highlighting existing water fountains for students to refill reusable drink containers at no cost. You might also look into making these fountains more reuse-compatible with special gooseneck spouts for more efficient bottle filling. These retrofitted fountains often referred to as “hydration stations” can improve perceptions around drinking free, local water (to find the most financially sustainable option for retrofits on your campus, see “Procuring Alternative: Getting Bids” later in this chapter). Research how other campuses have implemented entire campaigns around drinking local water!

Ask our Campus Coordinators for an up-to-date list of the reusable bottle vendors that PLAN partners with and recommends!



Existing water fountains amended with refillable water bottle stations at the University of Hawaii, Mānoa

# Case Study: University of Northern Iowa's Plastic Bag Exchange

The Office of Sustainability at UNI partnered with the Marine Biology Club and the Service and Leadership Council to hold a plastic bag exchange event. Students and staff were encouraged to bring at least five single-use plastic bags to exchange for a reusable UNI branded bag. The event resulted in the collection of 1,865 single-use plastic bags, in exchange for 208 reusable bags. The 1,865 single-use plastic bags collected were recycled into composite lumber at the campus's local partner recycling facility.

Ask your Campus Coordinator for an up-to-date list of the reusable bag vendors that PLAN partners with and recommends, such as Chicobag!



Source: Endnote 13

## Bags

If it is not feasible to bag single-use plastic bags on your campus right now, you may be able to set up a program in which customers are charged for their use. Furthermore, you will need to provide customers with an alternative by offering reusable bags for sale and encourage customers to “bring your own bag”. Managers of campus stores and eateries might be willing to offer a small discount (say, \$0.10) to customers for each reusable bag that they bring for their purchases.

### Banning and/or Taxing Single-Use Bags

Drastically reduces the waste caused by single-use plastic bags

Incentive for customer to buy only what they need

Decrease in campus procurement costs - don't have to continuously order shipments of single-use bags

Taxing bags will likely require higher administrative approval

### Selling Reusable Bags

Durable and reusable option for consumers

Long term savings for establishment

Customers can utilize reusables for purposes other than shopping

Requires working with procurement department to budget for the new product

## Dishware & Reusable Food Containers

Your campus may not have the capacity to purchase reusable dishware in dining locations and other eateries; but that does not mean that you can't promote a culture of reuse! Encourage students to bring their own reusable items, such as tupperware or a lunchbox. You can incentivize in a similar way to a reusable mug system, coordinating with eatery managers to offer a discount to customers who bring their own reusable items. Furthermore, by providing the infrastructure for students to clean their dirty tupperware and reusables right on the spot with access to washing stations, you encourage students to bring reusables, and eliminate any concerns of carrying around a dirty tupperware all day.

If you decide to pursue a reusable dishware program, see the case study from Lehigh University on pg. 39 and consider the following to increase your chances of success:

Calculate the reusables that you will need to purchase by calculating the average number of disposables used in a day; to do this, you might look at cafeteria customer purchase records, such as the number of lunches sold daily.

Adjust your estimates for reusable stock to anticipate campus users mistakes with a new program; for example, a plate might be dropped or broken, or utensils may be thrown away by accident.

Return stations for dishware and utensils should be setup in such a way that allows utensils to be used to scrape plates first before they are dropped off at the end of the line.

For purposes of quality control and education, have a student staff member or volunteer monitor dishware drop-off stations during the first week of classes.

Be sure to highlight to your dining services, or whomever you are working with to setup the program, that while washing reusables requires times and labor, there is no longer the need to place orders for, retrieve, open and restock disposables.

Source: Endnote 14



# CALCULATING COSTS AND BENEFITS OF REUSABLE DISHWARE

Clean Water Action's "ReThink Disposable" campaign offers some great resources on integrating single-use plastic alternatives in food service establishments. They have come up with a "Break-even Point Calculator" for you to evaluate how many times a reusable item must be used before it becomes cheaper than continually purchasing single-use disposables.

$$\text{Cost of reusable (each) / Cost of disposable item (each) = Breakeven Point (uses)}$$

*Example: Reusable cup = \$1.00 each / Disposable cup (\$0.05 each) = 20 uses  
So, after 20 uses of that reusable cup, you are saving money!*

For a more detailed approach to analyzing the costs and benefits of implementing reusable products, including implementation costs (labor, washing infrastructure) and payback period, checkout the ReThink Disposable Cost Benefit Calculation Worksheets at <http://www.rethinkdisposable.org/>.

## Case Study: Cost-Benefit Analysis of Bioplastics and Compostables Wares

With the help of a faculty project manager, a group of students in a Sustainable Solutions Consulting class at the University of Colorado Boulder compared the costs of reusable dishware with compostable dining ware in the University Memorial Center (UMC) Alfred Packer Grill. Compostable to-go ware was originally implemented into the grill after it was deemed the largest source of post-consumer waste in the UMC. However, due to lack of education, improper sorting, and a shortage of compost receptacles on campus, most of the compostable ware ended up in the trash. Because most customers of the Alfred Packer Grill eat their meals within the premises, reusable dishware is a feasible alternative to single-use to-go ware. The analysis focused on cost per use of an item, taking into account:

- the price of each item & its number of potential uses
- the price of washing (for reusables)
- worker labor time

# Case Study Continued

Storage space was not taken into account as storage is something required for both compostable ware and reusable dishware inventory (collection and disposal for compostables, and collection and washing for reusables). The project team also decided not to take into account compost pulling costs, as the majority of compost generated by CU Boulder campus is from pre-consumer food waste and not compostable food containers. Compost waste at CU Boulder is hauled four to five times a week, at a total cost of \$400/month. The means of calculating the cost per use of an item is as follows:

**Compostable Items:** cost per item X  
number of items purchased

Compostable Item	Cost per piece
Sugarcane clamshell	\$0.16
salad container and lid	\$0.15
soup cup and lid	\$0.15

**Reusable Items:** (cost per item /  
number of uses) + (cost of washing  
X number of uses)

- Time Spent Washing Reusable Dining Ware (A) = **2.8 hours**
- Wage Labor (B) = **\$7.99/hr**
- Utility Costs (C) = **\$0.52/hr**
- Avg. Number of Reusables Used Per Day (D) = **285**

Washing Cost Per Day  
(E) = (A x B) + (A x C)      **\$23.80**

Overall Cost Per Wash  
Per Item = (D / E)      **\$0.08**

Cost/Piece Single-use compostable Reusable counterpart	Cost/ Piece (A)	Cost After 100 Uses A + (100 x \$0.08)
Sugarcane clamshell	\$0.16	\$16.00
Al's Exchangeable	\$3.80	\$11.80
Salad Container & Lid	\$0.15	\$15.00
Salad Bowl	\$4.03	\$12.03
Soup Cup & Lid	\$0.15	\$15.00
Soup Bowl	\$1.48	\$9.48
Plastic Plate	\$2.28	\$10.28
Ceramic Plate	\$1.75	\$9.75

## Takeaways and Other Notes

- While reusables cost more up front, they are more cost efficient than single-use compostables in the long term
- Dining services purchase plates independently of the company through closeouts and yard sales, allowing for inexpensive acquisition of reusable dishware while also cutting down on carbon emissions from the elimination of transportation costs

Source: Endnote 15



## Cutlery

### Case Study: UVM Responds to False “Biodegradability”

For a time, eateries at the University of Vermont had been purchasing biodegradable cutlery to offer their customers, until they found that the product was comprised of a small percentage of traditional plastic material, and thus could not be incorporated into local industrial composting operations. In response to this, the campus now offers reusable metal cutlery at all eateries. In addition, the campus sells reusable sporks (a onepiece combination of spoon, knife and fork) for \$1 each after a successful pilot program in 2010. Customers receive a \$0.05 discount on take-out meals when they present their spork to a cashier. Other reusable to-go cutlery options like spork knives are available for purchase on campus, and include a carrying case to be kept readily on hand.

Source: Endnote 16



# Vending Machines

The epitome of to-go food, vending machines are huge sources of single-use plastic waste, from bottled beverages to candy bar wrappers. Phasing out traditional vending machine products doesn't mean student can't snack on-the-go. Rather, vending machines can be stocked with more sustainably packaged products, or even recovered food items!

## Case Study:

### College of the Atlantic's Food Recovery Vending Machines

One of the cafes at the College of the Atlantic in Bar Harbor, Maine, has installed a vending machine designed with food recovery in mind. Leftover food and snacks are put into compostable or recyclable packaging (CoA has access to an industrial composter for compostable packaging) and stocked in vending machine slots. Not only does this reduce plastic packaging, but it also reduces food waste and provides students with healthier snack options.

Source: Endnote 17



Positive &

Negative

# Reinforcement

Make the change worth it for students. Work with campus eatery and store managers to reward customers who participate in plastic-free alternatives.

For example, customers who bring their own coffee cup can receive:

- a discount on their drink
- charge for a “small”, no matter the size of the mug or thermos
- free or discounted refills
- a stamp card for a free drink

Often times these discounts and freebies are worth the trouble for stores and eateries as they save money on to-go cups.



San Jose State University in California advertise a \$0.50 discount at all on campus eateries as a part of their “Mug life” reusable mug campaign.

Just as you can reward campus residents for participating in plastic-free initiatives, reprimanding students for non-compliance can also be effective. Instead of offering discounts, eateries and campus stores might charge customers extra when they request a disposable to-go cup, food container, or plastic bag. Keep in mind that disincentives have the potential to frustrate campus residents, and may result in pushback against plastic-free initiatives so use them wisely and sparingly.



The Department of Environment in San Francisco enforces a \$0.10 minimum charge on all bags used for takeout at city eateries.

## 4. Alternatives Through Procurement



As discussed in the “Know Your Stuff: Campus & Community Infrastructure” chapter, a ban prohibits a product or material from being purchased, sold, or used on campus. Once incorporated into campus policy through a ban, plastic-free initiatives will have more strength and stability. All campus vendors and contractors must abide by the language of the ban; this puts pressure on vendors working with major institutions like your campus to create plastic-free alternatives for the greater consumer population.

### Using the Word “Ban”

The use of the word “ban” can potentially come across to campus residents as negative. Try and construct your campaign with positive language. Focus on the benefits of moving away from single-use disposable plastics. Build messaging around the environmental and public health harms of plastic and the benefits of the alternatives. With this focus, phasing out plastic items will be framed in a positive light, rather than an intimidating mandate. When talking about a “ban” on single-use plastics, focus your discourse on the following:

- less plastic in the waste stream means lower landfill hauling costs for the campus
- with fewer types of single-use disposable items available, there will likely be less litter on campus (making your campus more aesthetically pleasing overall!)
- plastic alternatives can be more durable and affordable, and thus, more sustainable!

If you focus on the positives of what you are doing, you never really have to tell anyone that you are “banning” anything!



Check out our suggested organizations in the “Resources & Support” chapter for more messaging ideas and inspiration.



# Alternatives to Specific Materials

Your campus will likely have pre-established criteria for product purchasing, facilitated through the Procurement Department. These criteria might require your campus to purchase products from companies that are committed to reducing greenhouse gas emissions or utilize a certain percentage of post-consumer recycled content. If these guidelines exist within procurement contracts, use them to guide your search for single-use plastic alternatives.

For most of the items to follow, you can speak to campus eatery and store managers about making them available only upon request. Make sure to have this conversation strategically! (See “Avoiding Administrative Run-Arounds” in the “Introduction” chapter and talk to your Campus Coordinator for tips) A list of alternatives for specific single-use plastic items might come in handy! There are many, many companies out there that make reusable items from sustainable materials like bamboo, steel, wheat, and more!

## Lids, Straws, & Stirrers

- wooden stirrers
- compostable lids
- paper or reusable straws

Also, encourage students to bring their own cup or mug

## Bags

- cloth bags, either purchased or homemade out of old pillowcases or T-shirts
- paper bags ( consumer must be encouraged to reuse them or dispose of them properly, i.e. compost or recycle)
- cardboard boxes (again, consumer must be encouraged to dispose of them correctly)

(Continued on next page)

## Bottles

- water fountains with gooseneck spouts
- fountain beverage machines
- pitchers (for bulk liquids)
- reusable water bottles (preferably not plastic!)

## Cutlery

- compostable ware
- old fashioned metal spoons, forks, and knives!
- metal chopsticks w/ carrying case
- reusable bambooware (that can eventually be composted!)
- reusable spork knives

## Plastic Film

- compostable film
- reusable containers with lids for catering type events
- aluminum foil (make sure to recycle it!)
- wax paper

## Dishware & To-Go Containers

- compostable boxes
- wax paper
- jars, sturdy to-go containers
- reusable dishware made out of durable products like ceramic or harder plastics
- stainless steel options

Keep in mind the waste hierarchy. Compost should not be your go-to solution. Compostable items still count as single-use, perpetuating throw-away culture. Consider your chances of implementing reuse initiatives first.

## Choosing your Alternatives

With all of these options for procuring reusable alternatives, how are you to choose? The company you work with in purchasing bags, bottles, and other materials will depend on what is in your locality, what kinds of businesses your program wants to support, existing campus procurement contracts, and your program's budget. Do your research on what's available to you, and come back to your advisor and/or administration with a list of a few different options - you might come across a vendor that is local, or one that allocates a portion of their profits to other social change projects. This might involve calling up these vendors individually, and asking more about their products and pricing, or even having a chat with your campus Procurement Department.

No matter who you choose to work with, keep in mind that campuses can often **establish an agreement for bulk discounts**, and even get your campaign logo branded onto the product for **plastic-free merchandise!**

## 5. Cross-Disciplinary Alternatives

Plastic-free is just one component to overall campus waste reduction. Joining forces with other waste reduction initiatives on campus can strengthen your campaign. A plastic-free campus is by no means mutually exclusive from sustainability initiatives concerning food recovery and hard-to-recycle materials.

### Prioritize Local

Sourcing locally for food and other items reduces the need for extensive packaging, cuts carbon emissions associated with transportation, and allows for more opportunity to negotiate sustainable alternatives with vendors.

### Recycling

An efficient recycling infrastructure is important for managing any plastics that do end up on campus. By recycling plastics, products get a chance to become something else, making it not quite single-use. Try to raise awareness around campus recycling operations participation rates among students. You might make your Plastic Audit a part of a larger campus Waste Audit to gauge all of the different types of waste materials generated on campus and how they are being disposed of.

For more on Waste Audits & Recycling, see PLAN's "Waste Audits" manual.



### Composting

Switching to compostable to-go ware and packaging is a great first step but it must come along with a composting system that can handle not only the material but the volume produced.



To learn more about establishing a composting program on your campus see PLAN's "Food Recovery" manual.



# EDUCATION & OUTREACH



We have already covered the “Why” and the “What” of Plastic-Free; this section covers the “How”: who to talk to and what to say, using resources (like social media and partnerships), and tackling the tricky parts of campus operations.

Behavioral change is a powerful tool in fostering a more sustainable campus culture. Educating around the incentives for going plastic-free, and how to make it happen within the infrastructure of your campus can and will change the way students behave.

When students know why your group is asking them to do something- filling up a water bottle rather than buying a new one, or composting the fork they just ate with - it is more likely they will incorporate those practices in their daily lives after leaving the university. Students who have the ability to recycle and compost on campus will look for it where they go after, questioning when the service is not there and perhaps even doing something about it. Students who drink water for free are probably less likely to pay for bottled water ; those who remember their reusable mug or pay extra will be more prone to bringing along a mug when they go to a coffee shop.

# Partnerships for Publicity

How do you begin to establish a visual presence for your project to students? Most campuses have a variety of publicity resources. These may include but are not limited to:

## Student Activities office

Can help you put events on campus wide calendars and make sure nothing conflicts.

## Academic Departments

Professors can say a few words at the beginning of classes to help recruit volunteers and group members as well as spread the word.

## Student Government

Always a good support for proposed policy change or bans, they can spread the word with a public statement to your campus.

## Sustainability Department

Can assist with campus wide emails, funding for printing and advice on strategy.

## Intramural/Recreation Department

Can encourage and sponsor sporting events to be plastic-free.

## Internship and/or Volunteer Office

Another avenue through which to spread the message and gather people power.

## Residential Life/Housing

Can distribute information (like how to use new sorting stations) through RA's who in turn teach their residents.

Create an informational flyer to present to any of these campus bodies and have approved for campus posting. Oftentimes, residential and housing department staff will even **post the flyers for you!** Scope out campus for multiple areas where students can hang banners, large posters, or displays. Heavy traffic locations on campus are prime for program advertisement, including the library, the bookstore or other types of student stores, and cafés. Inquire to the managers of these facilities to get permission to keep an educational display there long-term where folks will see it.

For even more creative advertising ideas talk with your Campus Coordinator!

# Case Study: UCSC Sustainability Office and the Global Village Café

Student employees in the Sustainability Office at the University of California Santa Cruz noticed that many of the compostable to-go containers from the McHenry Library's Global Village Café were not being disposed of in the designated compost bins set up throughout the building. Confusion on the part of café users resulted in these items being thrown in the trash or recycling containers. The student employees communicated this observation with the Global Village Café manager, and asked if they could set up an informative sign in front of the cash register so that customers waiting in line to order would know ahead of time how to dispose of their waste. The café manager agreed to purchase a sign holder, while the student employees constructed the sign out of actual cups, plates and bowls from the café. Utilizing 3-Dimensional items is one of the most effective tactics when it comes to signage.

Source: Endnote 18

## MORE OUTREACH IDEAS: ZERO WASTE GOODIES



PLAN distributes a Zero Waste Goodie-Bag at our annual Students for Zero Waste conference.

Another great option for promotional partnerships is to team-up with athletics and/or your school's bookstore during student giveaways at major events like Orientation Week. The promotional freebies at these events can easily coincide with a plastic-free initiative, in the form of university-branded reusable totes or water bottles. This way, students are being encouraged and enabled to follow initiatives and the university is getting a chance for endorsement. To ensure that these items get used correctly be there when they hand out goodie-bags so that you can explain the university's plastic-free initiatives. Insert fact sheets, event advertisements, meeting announcements etc. inside the zero waste goodies that you give out.



# Campaigning

There are a ton of resources both on and beyond campus that you can utilize to spread the word for your project or campaign. Collaborate with your advisor, or equivalent project “champion” (as we mentioned in the Introduction), about how to reach out to local, regional, national, and international groups who are implementing plastic-free initiatives on a larger scale. Support in all shapes and sizes is important - augment the impact of students in numbers with a shout out from campus staff and faculty, community leaders and organizers, and non-profit advocates!

## Take Advantage of Outside Resources

There are lots of big names associated with the larger sustainability movement that many students may recognize, including our buddies at **The Plastic Pollution Coalition (PPC)**, **The 5 Gyres Institute**, and **The Story of Stuff Project**. Incorporate these names, and the language that they use into your campaign efforts to strengthen your message. Groups like these are often able to craft the discourse of their cause in a way that hits home with many people. Use these groups as a resource both for information and inspiration.



# Case Study: Santa Clara University's Fact Sheets

Santa Clara University wanted to increase participation with their reusable container program. It was found, through surveys and talking to students one-on-one, that very few students knew about, let alone participated in, the program. Sustainability minded students and staff handed out eco clamshell fact sheets on campus, hung posters/signs at registers and dining entryways, added information about the program on their website, Facebook page, and school newsletter, presented in classes, and provided free clamshells at faculty and staff events. Program promoters found outreach most effective when students and staff witnessed their friends, peers, and colleagues using the clamshells.

Source: Endnote 19

## Gather Student Support

Students are obviously a massive component of a college or university campus, so utilize that strength in numbers! Petitions are a fun and exciting way to get student support, as they require you to interact with a variety of audiences in-person! You want students to sign up for campaign updates and become ambassadors of the campaign..

### **Here are some tips to gather petition signatures:**

- Have leaders & members ask professors to present the campaign in classes and pass around petitions for students to sign
- Table in major areas on campus like outside of the dining hall or the library
- Pass the petition along via email, and ask others to pass it along too
- Target the entrances and exits of major events to gather petition signatures
- Social media!

Make sure you **train any students representing your group** to give a solid overview of the campaign. Every member of your group should be able to answer these **basic questions**:

- What are the goals of this campaign?
- How will it affect students? Staff? Campus in general?
- Who supports the project already?

# Advertise your Campaign!

## Signage and Flyering

- Use different types of font, **bolding** or underlining important words, to guide the reader's eyes and to break up the text
- Keep it **short and simple**. Anyone and everyone should be able to get the message with just a quick glance
- Use images to draw attention and help convey information
- Create a memorable **logo or slogan** for you campaign
- **Use numbers** on your visual - they can be powerful for putting things into perspective
- Signs should be at **eye-level** so students can't miss them
- **Get help** from art and graphic design students!

## Social Media Platforms

Social media is a powerful way to spread the word about your program. We recommend creating a Facebook page and Twitter handle for your plastic-free campaign and projects. Perhaps designate this task to a single person on your campaign team. Work with your Campus Coordinator to utilize PLAN's national media presence in advertising your campaign!

### facebook.

- Pages have a recognizable & shareable link with at least 25 "Likes"
- Easy to reach out to other campus and community groups who have their own page
- Send invites for upcoming events well ahead of time—post regular updates leading up to the event



### Instagram

- Attach "fast-facts" to thought-provoking pictures of single-use plastic
- Post worker bios and campaign background



- Can be used to publicize FB posts
- Good for last minute updates like giveaways at events
- Send out thank-yous to supporters i.e. campus groups, local businesses

# Advertise your Campaign! (continued)

## Educational Events

Interactive displays and educational events are a fun and exciting way to get more campus residents involved in your plastic-free campaign! They can be a source of education around the dangers of plastic and the volume of plastic use, or a way to spread awareness about new plastic-free infrastructure on campus, like water refill stations or dishwashing stations. Good locations for these types of events are high traffic areas, or tables and booths at larger events.



The goal of this activity is to bring about a more positive attitude about tap water. Most students who participate realize that local tap water tastes about the same or even better than the bottled water that they normally buy. Set up a table in a central location; perhaps outside the cafeteria at a busy meal time. You should have at least 3 water options: tap, a popular more conventional water bottle brand, and a more expensive water bottle brand. (Note: we know it's hard to go buy one of these but know that if buying one bottle of water can convince someone that they can drink tap water the rest of their life, it's worth it!) Set up sample (reusable or compostable) cups in groups with one of each type of water, so that each participant tries every water type. Be sure to label them with numbers or letters for your own knowledge of distinguishing the water. Ask passersby to taste-test and guess which sample is which type of water. Participants are often shocked once you reveal which is which!

## Disposable Display

Using a single-use plastic item of your choice, create a display that portrays, on average, how much of that particular item is used and disposed of on campus in the average day, week, or month. This might take the form of a cube composed of the 1000 disposable to-go containers used on campus each day. Other ideas include making a Plastic Bag Monster suit out of the number of bags your campus bookstore or convenience store go through in a week, making a sculpture out of the plastic utensils used in a week, or covering a functional part of campus (i.e. benches) with plastic film that one of the dining halls uses in a day. Have a clear explanation beside the display, and consider having volunteers sit or stand by it to interact with students and answer questions.

Interactive displays and events may receive criticism from passer-bys and participants. For example, a participant might deem your water taste-test as a waste of water. Construct your displays out of items recovered on campus, or use new items in a way that they are still usable after the display. Communicate the steps you took to reduce waste in the making of your display in your interaction with participants. And remember people will always have critiques of what you are doing. Take these critiques as constructive criticism and nothing more - at the end of the day it is a good thing that people are talking about your campaign!

# Making Plastic-Free a Positive Experience

It's really important that the students of your campus leave having had a positive experience with plastic-free initiatives. The goal is not to burden individuals by making it difficult to follow these initiatives. Reducing plastic use is important, and the goal is for students to realize that being plastic-free is possible, easy, affordable, and can be done without missing out on anything.

## UPDATE AND CHECK-IN

Regular check-ins (we suggest every year or so) with your campus community is a good idea to assess understanding of and participation in plastic-free initiatives. Do students understand **why** they are being asked to reduce their plastic footprint? Are they clear on **how** to reduce their plastic footprint? Table at well-trafficked campus areas to personally reach out to individual students and find out what they know about your campaign. Make a survey and send it through email blasts or distribute it in classrooms.

### Sample Survey Questions:

- What does a plastic-free campus mean to you? or..
- Circle one: "Plastic-free" on my campus means...
  - A. the university does not use single-use plastics in dining
  - B. there are no single-use plastics at all on campus
  - C. the university is getting rid of all single-use plastic products
  - D. the university is phasing out select plastic products
- How often, on an average day, do you see a sign about a plastic-related campaign?
  - A. Often
  - B. Sometimes
  - C. Don't Notice
  - D. Never

### Some Harder Hitting Questions

- How much has this initiative altered your behavior or how much you think about plastic?
  - A. Very much
  - B. A little
  - C. Not much
  - D. Not at all

I have noticed that the university has stopped selling/providing certain plastic products.

I make a conscious effort not to buy bottled water/beverages.  
why/why not

I make a conscious effort not to use plastic bags.  
why/why not

I use the reusable food container program on campus.  
why/why not

In assessing the understanding of campus participants, you can use our "7 Reasons to Go Plastic-Free" in the first chapter of this manual



## UPDATE AND CHECK-IN CONTINUED

### Working with “Mom and Pop” Establishments On and Around Your Campus

Change can be scary and hard for these small establishments, making it difficult to approach them about student-led initiatives. Here are some tips on how to talk to the owner of that beloved local spot about changing their ways to move away from single-use plastics:

1. **Explain** where you are coming from. That you are a student, working with a group to help the campus find sustainable and cost effective alternatives to single-use disposable plastics. **Explain what you have already accomplished.**
2. **Show how much students already support this.** Bring the collection of signatures for your petition, or explain student body excitement for the changes you are bringing. Let them know that they can be a part of this excitement alongside students.
3. Discuss options that are **financially sustainable** and environmentally sustainable! As they get closer to being zero waste, they will save money on waste management costs. Use a cost benefit analysis for existing plastic-free projects.
4. **Offer to help** with transition.
  - a. Provide them with lists of alternatives to specific single-use items.
  - b. Help them to communicate with campus waste management to secure ample receptacles and signage.
  - c. Check in regularly, ask about any implementation difficulties, and help make adjustments where needed.

## ORIENTING NEW STUDENTS

Anxious, nervous and eager - new students are impressionable. During orientation and the first weeks of the term, new students will be bestowed with too much information to retain. Administration, academic departments, sports teams, and school clubs will all try to fill heads with their own information. You and your sustainability group or department must do its best to make sure that amongst all of this influence, your initiatives are noticed and understood. Be a presence on campus from the very moment students step on site.



## ORIENTING NEW STUDENTS CONTINUED

Show students that *“this is a part of being a student on this campus”* and they will likely follow the lead. The hope is that those same water-bottle-bearing students will leave at the end of the year convinced that a reusable water bottle is a no-brainer, and that students will realize that if they want coffee they have to bring their own mug. The goal is that these concepts will become a part of the college experience immediately, and that through time at your university, behavior will be shaped to sustainable habits people will carry with them beyond college. It is worthy to note that underclassman, especially first-years, are greatly influenced by the behavior of upperclassmen. Increasingly sustainable behavior on campus can lead to an accelerated rate of adoption of that behavior by new students.

**Be there visually** with new and brightly-colored signs pointing out the compost and recycling bins. Table in highly frequented areas. Make displays for areas you cannot staff. Prepare for this type of advertising to be extra heavy at the start of the year, during summer orientation tours, or after long school breaks.

**Be there physically** to help students understand: what does it mean for a campus to be free of single-use disposable plastics? Why do I care that this applies to my campus? What does that mean for me and my behavior? Tabling in major areas will allow you to interact with students one-on-one, answer questions, and clarify any confusion. It would help to do the same in residential areas during move-in. Answer immediate questions students have as they unpack. Let them know why they can't buy a bottled beverage on campus, or why they won't find any plastic bags. Seize the opportunity to educate another generation by answering questions that parents may have. Some students will undoubtedly walk in carrying cases of water bottles. Being there at that first moment allows you to explain to them why they can't access more bottled water here, and why they should consider making that the last case of water they ever buy. The hope is that these concepts will become a part of the college experience for all of these young people right away, and that throughout their time on campus, their behavior will be shaped to sustainable habits they will carry with them beyond college.

## Educating Visitors

Educating visitors is not an obstacle, but an opportunity! Chances are that your university rents or donates space to community and private groups for events, such as conferences or summer camps. These visitors are likely unaware of campus plastic policies and initiatives. Work with whomever on your campus maintains communication with these types of groups, such as **Admissions**, **Conference Services**, or **Orientation Staff**, to ensure that the best effort to inform people of your university's policies is communicated before the visit.

This also includes educating guest speakers and performers. To make it easier for speakers, performers, and other traveling individuals or groups to comply with your campus policies, offer them advice from the **Plastic Pollution Coalition's one-sheet** on "Touring Plastic Free", available in the Plastic-Free folder in your Google drive..

University tours are another major avenue to convey campus practices. Talk with the department in charge of campus tours about training orientation guides to be able to effectively explain the plastic-free initiatives your campus has adopted.

Guest Speakers & Tours	<ul style="list-style-type: none"><li>- publicity for your school to community members who may be in attendance</li><li>- sets an example for future events to be plastic-free</li></ul>
Conference Attendees	<ul style="list-style-type: none"><li>- great way to communicate to professionals and other innovators the importance of plastic-free</li><li>- can serve as an example as well as publicize your campus efforts</li></ul>
Summer Camps	<ul style="list-style-type: none"><li>- most likely younger audience, grade school through high school; great way to educate younger students on the importance of plastic-free early in their education!</li></ul>
Prospective Students	<ul style="list-style-type: none"><li>- can give incoming students a feel of how things run on campus</li><li>- allows students to think about whether or not they can comply with these sort of behavior changes in their newfound campus home</li></ul>
Alumni and Donors	<ul style="list-style-type: none"><li>- alumni who come back to visit regularly want to witness changes taking place on campus - they can be a source of verbal and financial support for change that they deem positive</li><li>- explain to those with financial leverage in your institution that supporting plastic-free initiatives is an opportunity for them to portray their sustainability values</li></ul>

# Maintaining the Importance of Recycling

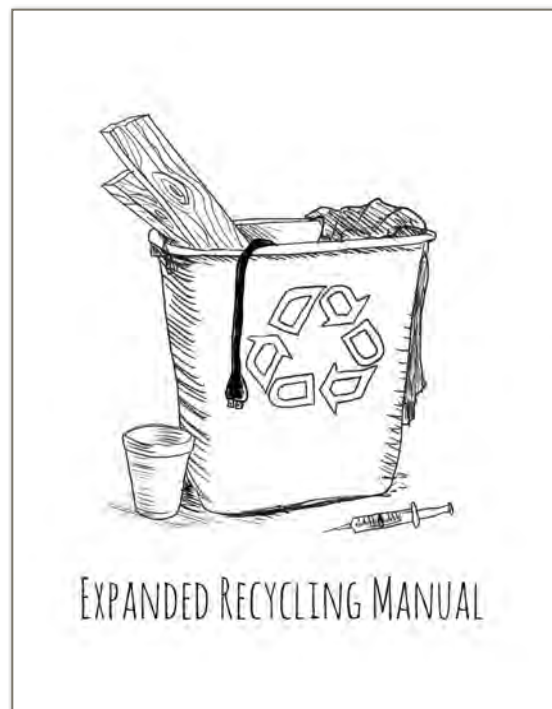
Recall any waste or plastic audits you performed in the beginning stages of your project or campaign (see pages 25-27). You may have found that a lot of students throw away recyclable materials. This often happens with lack of education regarding recycling infrastructure on campus. It might also be caused by inadequate recycling infrastructure to begin with: if recycling bins are not in close-enough range to a trash can, some people may not make the extra effort to distinguish where they are throwing away their waste.

Going plastic-free won't happen all at once, so continue to **give attention to recycling** infrastructure and participation on campus. Be sure that bins for all different waste streams are present at disposal areas, and are clearly marked and distinguishable. You also may have found in your audit that there is a significant amount of plastic from off-campus sources. It is important to continue education of proper disposal of these items, as they will inevitably enter campus from time to time.

Finally, being plastic-free does not mean disregarding recycling entirely. Even with a reduction of single-use plastics, recycling can still serve as an appropriate disposal method for glass, aluminum and more difficult to dispose of plastic products.



For more on recycling, and hard-to-recycle plastics, see PLAN's "Expanded Recycling" manual





# RESOURCES & SUPPORT

First and foremost this section covers the importance of long lasting programs. Leadership turnover and constant evaluation is imperative to creating a plastic-free campus. This sounds like a tall order but don't worry, you are not alone! PLAN and our student network has many partners who will have your back. Check out these organizations in this chapter and let us know if you would like to connect with them further.

## Sustaining Plastic-Free Projects & Initiatives

With any waste reduction project on campus, you want to be able to show progress and change. Hard numbers and qualitative feedback are valuable for showing campus administration the positive effect that being free from single-use plastics has on your campus. This might be through cost savings, higher diversion rates, or positive campus publicity. The following activities are all great ways to gather information on the progress of plastic-free initiatives:

Regular plastic audits, whether that be semesterly, annually, etc.

Surveys and tabling to gauge campus residents' understanding of plastic-free initiatives (see pg. 59)

Continual advertising through banners, posters, and social media posts

Talking to stakeholders involved behind the scenes, such as custodians, dining employees, and waste management staff (see "Avoiding Administrative Run-Arounds" in the introduction)

Taking next steps on plastics and other hard-to-recycle material (see our "Expanded Recycling" manual!)

Talk to your Campus Coordinator about Leadership Turnover and ways to further strategize and evaluate a long-lasting program!

## Partners for the Movement

For more up-to-date information on the dangers of plastic and existing plastic-free initiatives, check out the following groups and organizations. They have resources for education, outreach, and movement building, and do a great job at putting the benefits of going plastic-free into laymen's terms.



Plastic Pollution Coalition (PPC) has collaborated and supported PLAN in the development this Plastic-Free Campus manual. PPC is a powerful voice addressing the root of plastic pollution. It is a global alliance of individuals, organizations, businesses and policymakers working toward a world free of plastic pollution and its toxic impact on humans, animals, the ocean and the environment. PPC empowers individuals to refuse single-use plastics, offers alternatives to plastic use, consults on

legislation, provides easy-to-use resources, connects coalition members and facilitates collaborations, informs the public on the health and environmental risks of plastic through social media and their news portal - Plastic Free Times. Check out their website at [www.plasticpollutioncoalition.org](http://www.plasticpollutioncoalition.org). You'll find extensive resources and information for creating plastic-free programs in schools, towns and events. Join the Coalition by signing the online petition resolving to refuse single-use plastics. Participate in quarterly coalition calls to learn what's happening in real-time. Help students join PPC at your tabling events by having their signup page open on a laptop or circulate the petition on your campaign's social media platforms. Be sure to check out the Plastic Free Times blog for ideas, inspiration, and news related to current events, and talk to your Campus Coordinator about being in touch with PPC directly. They're eager to help!





5 Gyres is a non-profit organization engaged in researching design and policy solutions that address the global impacts of plastic pollution in oceans. As their name suggests, their researcher teams sail through the five major subtropical gyres - rotating ocean currents - to gather data on plastic pollution and its associated global effects. This information is spread through scientific publications, social media platforms, and travelling exhibitions to promote stricter legislation on the production and disposal of plastics. Check out their website to learn more about their research on plastic microbeads and sign their petition for the Ban the Bead campaign.



The Product Stewardship Institute (PSI) works to reduce negative impacts consumer products have on their environment and human health throughout different stages of their lifecycles. Partnered with businesses, government bodies, environmental organizations, and academic institutions, PSI mediates legislation and voluntary initiatives for products to be designed with sustainable end-of-life disposal in mind, and overall stricter producer responsibility. Check out their website for:

- Product-specific legislation and alternatives
- Maps pinpointing Extended Producer Responsibility (EPR) legislation by state and locality
- More information on related organizations advocating EPR
- Marine Debris Toolkit for advice on single-use plastic reduction (as mentioned in earlier chapters of this manual!)





Started by a group of surfers concerned about the effects on new development on their favorite surf spot in Malibu, CA, the Surfrider Foundation now has chapters all throughout the country dedicated to “the protection and enjoyment of the world’s oceans, waves and beaches through a powerful activist network”. Their Rise Above Plastics program offers educational resources to empower the individual, including an Activist Toolkit with advice on how to draft your own plastic-free ordinance. Check out their website to find a local chapter near you and the campaigns they are involved in!



Through their national action and education campaign “Think Outside the Bottle”, CAI is working with public institutions, campuses, and community groups to promote tap water over bottled water so heavily market by industry. Check out their website for a map of the movement and action-oriented resources like their “Tap Water Challenge Organizing Guide”. You might even use their Think Outside the Bottle Pledge at tabling events for your campaign!



The Story of Stuff Project is making way for conversation around the socio-environmental detriments of our consumer-crazed culture, and offering solutions to unsustainable production and consumption patterns. The organization works alongside PPC, CAI, and The 5 Gyres Institute to ban plastic microbeads and take back drinking water in California. Their educational short films, including “The Story of Stuff”, “The Story of Bottled

Water” and “The Story of Cosmetics” can be great for movie screenings to spread awareness about the dangers of single-use plastics and boost your campaign!



As a certified Benefit Corporation (or B Corp), ChicoBag's mission is to replace wasteful, single-use products with durable ones. While their focus is on bags, they also collaborate with other businesses, schools, and organizations to offer alternatives to general single-use products. They are also known for their Bag Monster, a personality used for interactive advertising to go plastic-bag free. Learn about plastic-bag bans and legislation throughout the nation, and track the greater movement with their Interactive Map. Some schools have participated in campus-wide fundraisers, or stuck their student campaign logo onto ChicoBag products to use as sustainable prizes at plastic-free events!



These are just a few of the major groups working to fight plastic and its negative effects. There are smaller, community-based groups and projects happening all around the country, and are over the world. Find those local to you using the resources mentioned above, and searching the hashtags we mentioned in the “Education and Outreach” chapter.

## So, What's Next?

You know the detriments of single-use disposable plastics, and have seen what many campuses across the country all already doing to refuse these materials. So how do you join the movement, and emulate these efforts on your own campus? Or maybe you have an idea to go plastic-free that we haven't covered?

Remember what we have reiterated from the beginning of this manual - gather support, share your ideas, and create a team of passionate individuals to make your project happen! Be sure to check out all of the resources that we have provided throughout this manual in the Plastic-Free folder of your PLAN Google drive. And remember that the Campus Coordinators here at PLAN are here to help and advise you every step of the way. You can achieve the goal of ridding your campus of single-use disposable plastics, and foster the greater Zero Waste movement on your campus!



# ENDNOTES

1. Interview with Doorae Shin, Sustainability Studies Student at University of Hawaii Manoa. July 27, 2015.
2. Marine Debris and Plastic Source Reduction Toolkit for Colleges and Universities; the Product Stewardship Institute and EPA, February 2015
3. Interview with Lisa Mitten, SUNY New Paltz Campus Sustainability Coordinator
4. Gregg, Candace. "How 5 students banned plastic microbeads on the UCLA campus (and you can too!)" [www.5gyres.org](http://www.5gyres.org)
5. Berman, E.R. & Johnson, R.K. "The Unintended Consequences of Changes in Beverage Options and the Removal of Bottled Water on a University Campus". American Journal of Public Health. July 2015, Vol. 105: 1404-1408.
6. Enterprise Staff. "Bottled water ban does not reduce waste, study finds". The Vermont Cynic. <http://www.vtcynic.com/bottled-water-ban-does-not-reduce-waste-study-finds/>
7. Sternbergh, A. "The Fight Over Plastic Bags Is About a Lot More Than How to Get Groceries Home". New York Magazine. July 15, 2015. <http://nymag.com/daily/intelligencer/2015/07/plastic-bag-bans.html#>
8. Interview with Smith Getterman, Assistant Director of Sustainability at Baylor University. July 31, 2015.
9. Marine Debris and Plastic Source Reduction Toolkit for Colleges and Universities; the Product Stewardship Institute and EPA, February 2015
10. Royle, E. "Corn Plastic to the Rescue". Smithsonian Magazine. August 2006. <http://www.smithsonianmag.com/science-nature/corn-plastic-to-the-rescue-126404720/?no-ist>
11. Schueneman, T. "Biodegradable vs. Compostable: Don't be Greenwashed". The Greenwashing Blog. March 17, 2014. <http://thegreenwashingblog.com/2014/03/17/biodegradable-vs-compostable-dont-greenwashed/>
12. Sustainability at Lehigh: Reusable Dishware Program. <https://sustainability.lehigh.edu/dishware>
13. Sustainability: Plastic Bag Exchange. <http://www.vpaf.uni.edu/energy/spotlight/bagexchange.shtml>
14. Cioci, M. & Minnesota Pollution Control Agency. "The Cost and Environmental Benefits of Using Reusable Food Ware in Schools". October 2014. <http://www.pca.state.mn.us/index.php/view-document.html?gid=21760>
15. Barlow, L. K., ed. "Fine Dining Zero Waste: Evaluation and Recommendations for Achieving CUSG Zero Waste Goals at the Alfred Packer Restaurant and Grill". 2013. [http://envs.colorado.edu/undergrad\\_program/C106/ENVS-3001](http://envs.colorado.edu/undergrad_program/C106/ENVS-3001).
16. Laumer, J. University of Vermont Cafeteria Adapting to False Biodegradability Claims for Cutlery". Treehugger Blog. October 31 2010. <http://www.treehugger.com/corporate-responsibility/university-of-vermont-cafeteria-adapting-to-false-biodegradability-claims-for-cutlery.html>
17. Interview with Lisa Bjerke, Discarded Resources and Composting Manager at College of the Atlantic. July 27 2015.
18. Interview with Chris Kane, UCSC Alumnus. July 2015.
19. Center for Sustainability at Santa Clara University. What's the deal with polystyrene?". 2014. <http://www.scu.edu/sustainability/stewardship/wastefaq.cfm?b=143&c=7179>