

Waste Stream Task Force Community Discussion

April 2019

Waste not, want not



Task Force Charge

- Examine Penn State's practices in procurement, operations, and solid waste management as guided by the triple-bottom line principles of Economics, Society, and the Environment.
- Provide a plan with phased implementation to meet these goals and principles.
- Determine the resources, both human and financial, needed for implementation.
- Identify people and University groups needed to implement the plan and target dates for accomplishment.



Task Force Members

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Task Force Subcommittees



Metrics



Procurement



Traditional Recycling



Housing



Dining & Events



Specialty Wastes



Commonwealth Campuses



Education & Awareness



Process and Timeline

- What we've done, when we did it
 - Task Force Charge – May 2018
 - Task Force and sub-committee meetings this past year
 - Waste Audit conducted in Spring and Fall of 2018
 - Preliminary Report in progress
- Plan for the future including submission of the report
 - Finalize Recommendations
 - Further define costs and benefits
 - Report out to Sustainable Operations Council and David Gray by July 2019



Values, Goals, and Metrics



- Resource Use, Quality, Human Health, Climate
- Volume, contamination, toxicity, greenhouse gases
- *Reduce*
 - Education, Procurement, Chemicals, Biomedical
- *Reuse*
 - Lion Surplus, Trash to Treasure, Asphalt and C&D
- *Recycle*
 - Composting, Traditional Recycling, Biomedical



2018 University Park Waste Stream Audit

- **Objective:** assess the quantity and composition/quality of refuse, recycling, and compost streams from selected buildings on campus.
- The audits were done the weeks of April 16-27 (Spring Audit) and November 5- 16, 2018 (Fall Audit)
- A total of 22 buildings were audited and were categorized into eight types:
 - academic, administrative, apartment, athletic,
 - dining hall, residence halls, library, student union.
- Each building's daily refuse stream was sorted and measured.
- The results of the audit, as well as additional research conducted by the vendor, were used to evaluate options and recommendations to improve Penn State's solid waste management system.



Waste Stream Audit Primary Conclusions

- Almost 20% of the refuse are materials that are accepted in the University's current recycling program (**mixed recyclable paper, plastic cups, and PET bottles**).
- An additional 15% of the combined refuse was food waste, which could readily be included in the compost stream.
- Nearly **40%** of the refuse are all other materials.
 - The largest category of this was **non-compostable paper food service ware**, primarily paper cups from the various quick service restaurants and coffee shops on campus.



Miscellaneous plastics

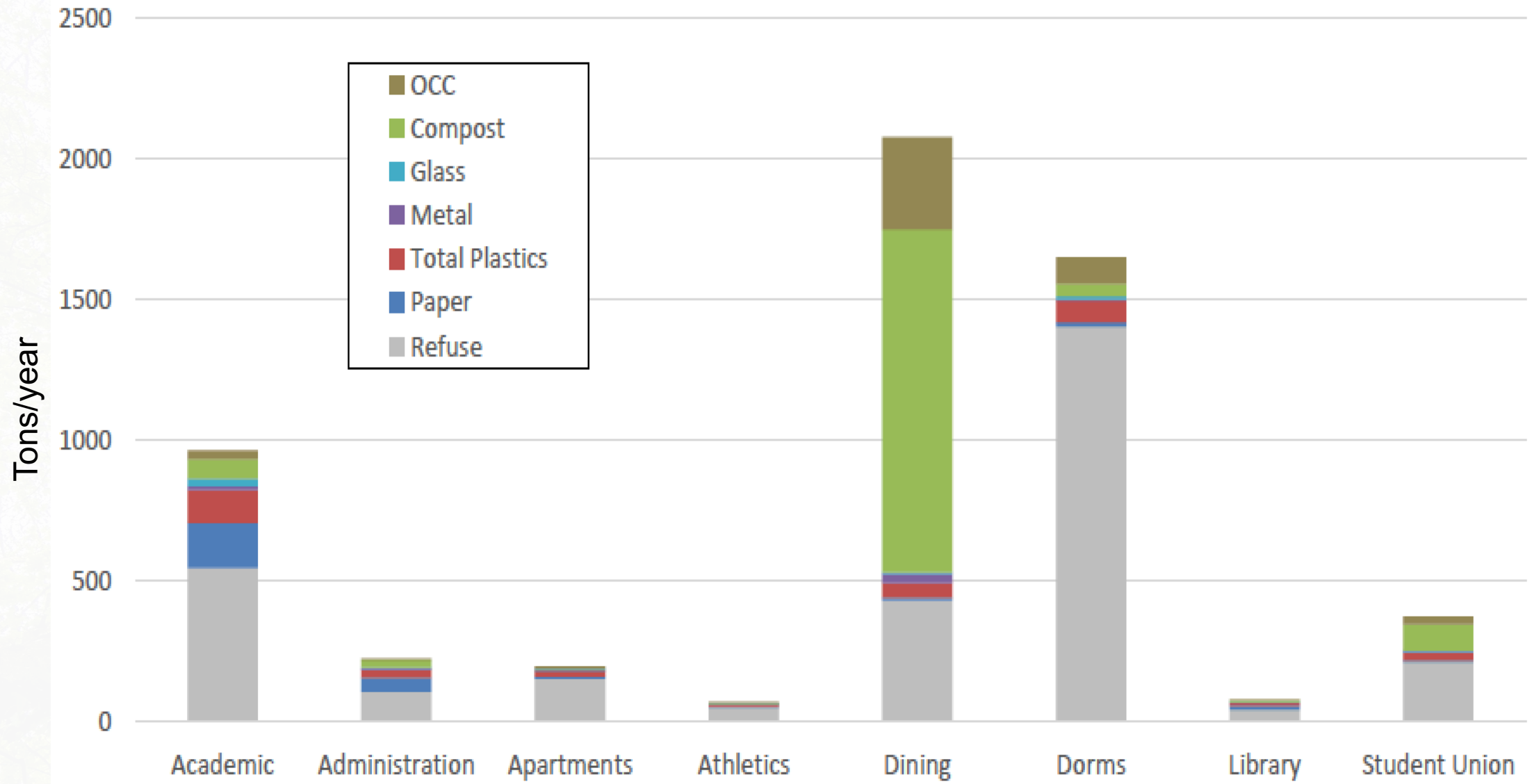
- Miscellaneous plastics were the **most contaminated** recycling stream assessed during the audit, about half non-target materials.
 - Some of this was misplaced recyclables (primarily plastic bottles and film), but about **a third of the overall stream was contamination**.
- The major contaminants were food-contaminated miscellaneous plastics, such as plastic clam shells or drink cups with non-water-soluble food residue (i.e. salad dressing, milk shake, whipped cream, etc.).
 - Often this would contaminate the entire bag of recyclables.



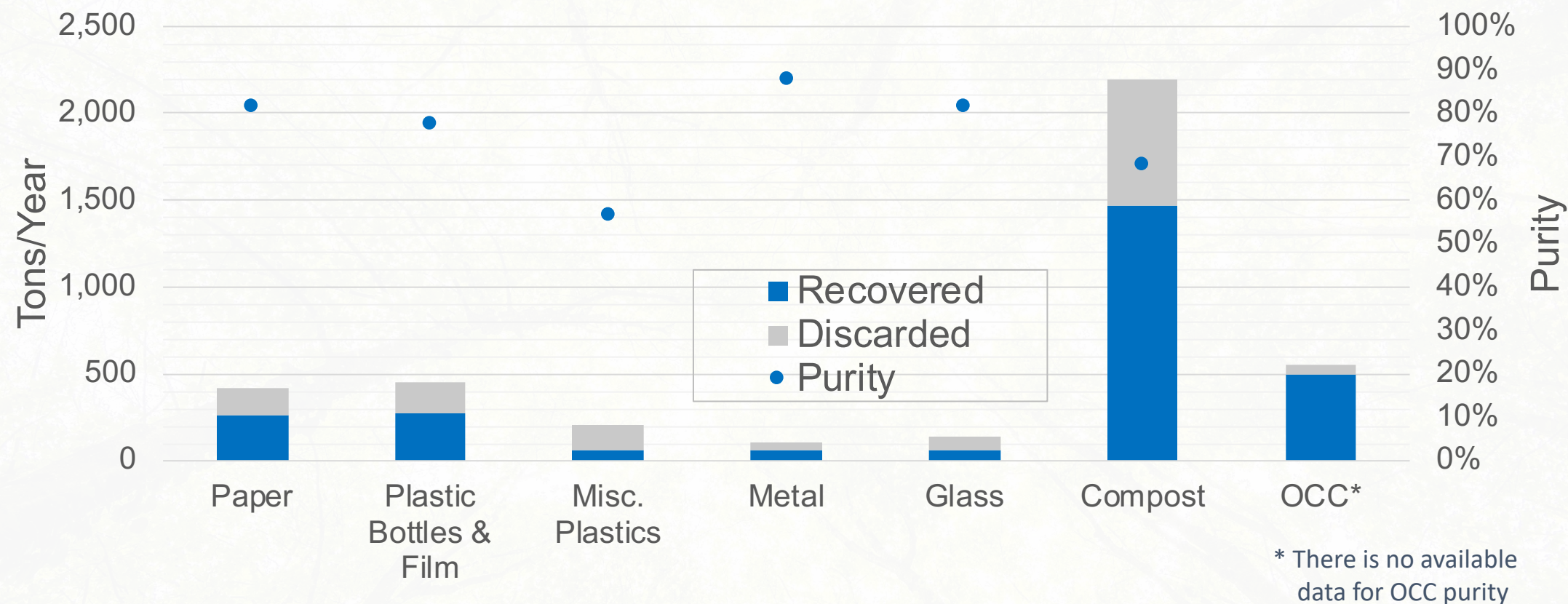
Compost

- Pre-consumer compostables were well sorted, but the post-consumer compostable stream was fairly contaminated. **Just over half of the stream was truly compostable materials.**
- A significant amount of the compost stream consisted of non-compostable paper containers and cups, mostly to-go paper cups, which were also a significant contaminant in many of the other recycling streams.
- In some cases, compostable to-go containers included plastic utensils and a plastic top, all of which were then placed in the compost stream.

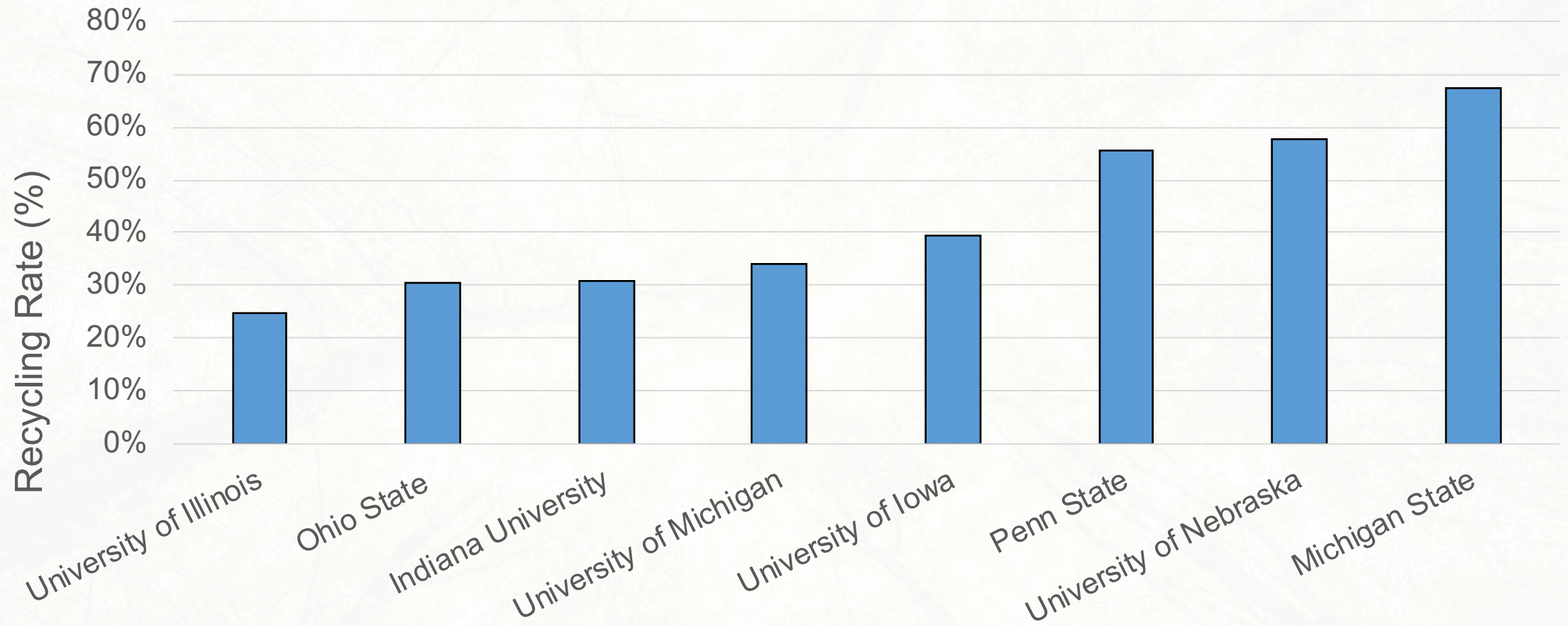




University Park Recyclable Volumes and Purity



Big 10 Comparison



General Challenges

- Funding Investments and Cost Analysis
 - Some recommendations have a significant one-time or ongoing cost associated with them. Savings are difficult to predict, and while external costs are documented internal labor and equipment costs are widely dispersed and not currently assessed.
- Collaborative Effort Required Across University Units
 - Success depends on all employees and students thinking and acting in a sustainable manner. Operational priorities and competing interests often are not compatible with actions required to successfully achieve waste management goals.
- Frequent and Changing Atmosphere for Recycling Locally and Globally
 - Ever-changing markets and requirements will challenge our ability to implement sustainable changes and adjust to future externalities.



General Challenges continued

- Sustained Focus Year to Year
 - Perpetual focus on waste management is required. There needs to be an ongoing effort to maintain awareness and participation and to adapt to future changes.
- Awareness of and Compliance with Proposed Sustainable Procurement Policy
 - Many people make purchasing decisions at the University and sustainability isn't always a primary consideration. Motivating and managing these decentralized decision makers will be challenging.
- Overall Approach to Change
 - In keeping with Penn State's historic approach, the recommended strategy is primarily to foster cooperation through "informed willingness" as opposed to "mandated compliance."



Inconsistencies across campus



General Recommendations

- Hire a Recycling Coordinator
 - We recommend a position be created and funded that will lead the effort to increase Penn State's recycling rate. Penn State's recycling rate has decreased in the past 3 years since this position was eliminated. Recommendations will require attention that is best achieved by hiring an individual to focus on these tasks.
- Reemphasize Existing or Implement New Waste Reduction Strategies
- Redesign and Launch a New Recycling Program Brand
 - The current Mobius brand is not consistently applied and is not strongly associated with recycling. Changes to the existing program provide a rebranding opportunity.
- Leverage Materials Management as a Living Laboratory
 - Create opportunities for students and faculty to engage and advance the business as well as the science of waste management and recycling.



General Recommendations continued

- Empower a Network of Advocates Across the University
 - Include OPP's facilities coordinators, unit sustainability leaders, and Green Teams to be responsible for recycling and waste reduction in their units.
 - Currently, the University relies on all students and employees to Reduce, Reuse, and Recycle as part of how they live and work. The Task Force recommends that an individual or small group is tasked with assisting and promoting these efforts in each college and department.
- Annually Review and Update Waste Stream Management Plan
 - Review practices annually each October under the auspices of the Sustainable Operations Council so that changes can be considered and implemented before the start of the next fall semester.
- Review and Revise University Policy AD34
 - The University Recycling Program policy should reflect those recommendations of the Waste Stream Task Force that are implemented.



Procurement



- Key Challenges and Opportunities
 - Implementing and enforcing sustainable purchasing policies in a decentralized purchasing environment, as there are multiple venues of purchasing.
 - Balancing the “best value” continuum when affordability, operational standards, and cost efficiencies are often seen as a more important factor when making spending decisions.
- Priority Recommendations
 - Garner leadership and customer support for sustainable purchasing policies
 - Develop change management strategies to help implement the policies
 - Implement sustainable purchasing policies



Traditional Recycling



- Key Challenges and Opportunities
 - Changing Requirements
 - Education and Awareness
 - Contamination
 - Participation
- Short Term Priority Recommendations
 - Promote waste reduction efforts, such as reusable hot mugs, beverage cups, water bottles, to-go containers, and bags
 - Eliminate miscellaneous plastic collection and reduce the number of bins
 - Eliminate collection of most plastic film (stretchy plastic)
 - Maintain office compost collection



Traditional Recycling continued



- Long-Term Priority Recommendations
 - Revamp collection infrastructure to improve sorting (including clear signage at recycling sorting stations) and provide future flexibility to adapt to changing requirements
 - Explore opportunities to further simplify post-consumer sorting and collection
 - Examine composting infrastructure and the opportunity to recycle more organics, like compostable food service ware



Housing



- Key Challenges and Opportunities
 - The complexity of the sorting station redesign
 - Education of new residents
 - Consistent messaging across the University
 - Reducing the volume/tonnage of solid waste during move-in and move-out
- Priority Recommendations
 - Enlist the EcoReps to deliver new educational programming addressing waste management on campus to first-year residents
 - Comprehensive study and change to the end of semester (move-out) collection effort.
 - Immediate redesign and roll-out of sorting station areas



Food & Beverage: Sports Venues & Events



- Key Challenges and Opportunities
 - Behavior of some sports fans and event attendees is not consistent with our waste management methods and goals
 - Current infrastructure is not adequate to collect and manage materials in a way that will increase diversion from landfill
 - Balancing operational practices with waste management goals and objectives
- Priority Recommendations
 - Collect all back-of-the house food and related items for composting
 - Remove Miscellaneous Plastics from recycling stream at events/venues
 - Invest in facilities to handle greater quantities of compostable material
 - Develop a list of compostable foodservice items that will be accepted



Food & Beverage: Dining & Hotel



- Key Challenges and Opportunities
 - Current infrastructure is not adequate to collect and manage materials in a way that will increase diversion from landfill
 - Balancing operational practices with waste management goals and objectives
- Priority Recommendations
 - Collect all back-of-the house food and related items for composting
 - Remove Miscellaneous Plastics from recycling stream at events/venues
 - Invest in OMPEC so it can handle greater quantity of compostable material
 - Develop a list of compostable food service items that will be accepted



Specialty Waste Streams



- Key Challenges and Opportunities
 - Overcoming the proactive budget approval process versus waiting for a failure/crisis response where money is found.
- Priority Recommendations
 - Minimize purchased quantities and maximize recycled/reused disposal amount without compromising regulatory compliance.
 - Have sustainable best business practices in place for the process to ensure future quantities of each unique waste stream are managed efficiently



Commonwealth Campuses



- Key Challenges and Opportunities
 - Across the Commonwealth Campuses, there are highly varied needs and capabilities for reducing waste
- Priority Recommendations
 - Provide educational and financial resources to allow flexibility for Commonwealth Campuses to implement waste-reduction initiatives that best fit their needs.
 - Provide guidance and training opportunities to support the waste-reduction initiatives being pursued at the Commonwealth Campuses.



Education and Awareness



- Key Challenges and Opportunities
 - Clear communication of what, why, and how recyclables and organics are collected as well as appropriate disposal of procured products
 - Ongoing messaging and branding that is consistent, relevant, and accurate for different campus venues and commonwealth campuses
- Priority Recommendations
 - Rebrand Penn State Sustainability and Recycling efforts
 - Improved communications and coordination – clear, relevant visuals with consistency
 - Increase ease of access to answers, including engaging educational materials (e.g., app, online resources, training)



Get Involved!

- Read the full draft of the Waste Stream Task Force report
- Ask questions

on the website

wastestream.psu.edu

