# WASTE REDUCTION ACTION PLAN

October 2017

LLOYD ECO DISTRICT

"Our relationship to the planet need not be zero-sum...as long as the sun still shines and people still can plan and plant, think and do, we can, if we bother to try, find ways to provide for ourselves without diminishing the world."

*Michael Pollan*

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LLOYD ECO DISTRICT

# ACKNOWLEDGEMENTS

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# INTRODUCTION

Lloyd EcoDistrict operates on behalf of residents, organizations, and businesses in Lloyd to reduce waste. Working at a neighborhood level, we bring the community together to solve problems collaboratively. We aggregate resources, educate on best practices, and catalyze innovation to accelerate change.

Building an equitable community is a key aspect of ecosystem resiliency and is core to the mission of Lloyd EcoDistrict. Many of the strategies in the Waste Reduction Action Plan (the Plan) aim to engage the public, because change begins with the individual but spreads with community. Our community-building activities strengthen public awareness of issues around waste, enhance visibility of environmental successes in Lloyd, and provide an entree for individuals to participate in this important work. As we implement this plan, we will ensure the benefits of these actions are equally accessible to businesses, residents, and all those who spend time in Lloyd, especially low-income populations and communities of color. We will act responsibly on behalf of our community to prevent any undue burdens associated with our actions.

Lloyd has many sustainability leaders who are already achieving impressive waste recovery rates, and those involved with the Plan have committed to individual actions that contribute to Lloyd EcoDistrict's overall goals. However, working together as an EcoDistrict requires a Plan that emphasizes collaborative solutions that take advantage of collective knowledge and district-scale efficiencies. This emphasis will enable Lloyd to achieve ambitious goals beyond what individuals could do alone.

Similarly, we could not create the Plan in a vacuum. Lloyd EcoDistrict's waste reduction goals and strategies align with the City of Portland's Climate Action Plan and the Oregon Department of Environmental Quality's guidance and mandates, as well as regional and federal policy. We seek the collective benefit in adopting and advancing these broader policies.

Lloyd EcoDistrict has adopted ambitious waste-reduction goals: by 2035, no net increase in current (2016) total waste generated by weight, and recycling or composting ninety-three percent of Lloyd's waste. The Plan presents the first five years of actions to engage the Lloyd community in achieving the goals. As interim targets, the Plan sets five-year goals of increasing the volume of waste recycled or composted by six percent and maintaining the current rate of waste generated.

In developing the Plan, the committee applied best practices for each level of the waste hierarchy — avoid, reduce, reuse, recycle, recover, and dispose — to identify and prioritize strategies and actions for moving Lloyd toward its goals.

While each of the actions were chosen to address core aspects of waste reduction, some of them predominantly address environmental impacts while others seek to build community involvement and commitment. Taken together, these actions have the potential to significantly reduce waste in Lloyd.

# GOALS & METRICS

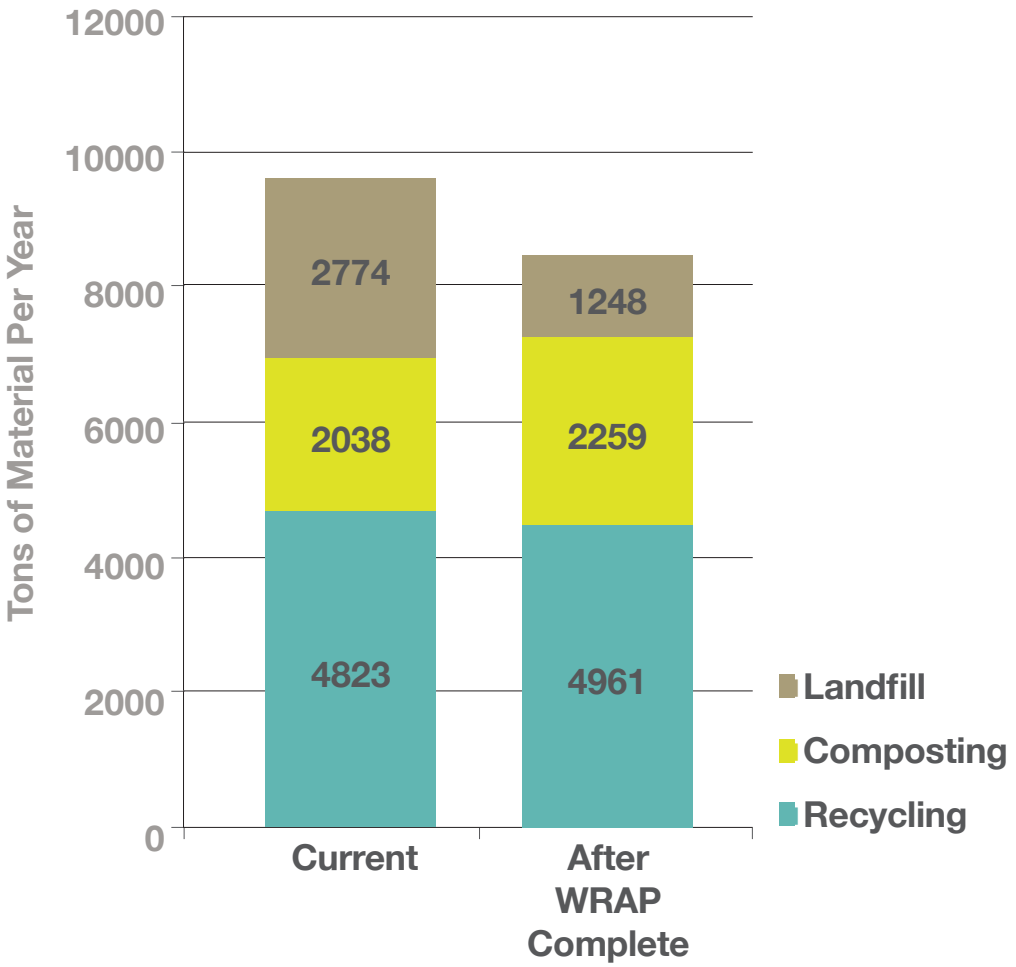
**Lloyd EcoDistrict has two overall twenty-year goals for reducing waste:**

1. **Generation:** Have no net increase in the current total waste generated by weight through 2035.[1]
2. **Recovery:** Achieve a waste recovery rate of ninety-three percent by 2035.[2]

**This Plan sets the following five-year interim goals:**

1. **Generation:** Maintain the current rate of waste generated.
2. **Recovery:** Increase the waste recovery rate by six percent.

## IMPACT OF ACTIONS ON LLOYD'S WASTE STREAM




[1] Generation will be evaluated based on an estimation of generation which is the sum of waste to landfill, recycling and composting.

[2] Recovery will be evaluated based upon calculating recovery rate from the sum of waste to composting and waste to recycling, divided by the generation.

The plan includes metrics to gauge progress toward these long-term and interim goals. Data gathering methods include the following:

- **Surveys (qualitative).** Lloyd EcoDistrict will track metrics through outreach and ongoing engagement with the Lloyd community.
- **Member tracking (quantitative).** Individual Lloyd stakeholders will track data on at least three key metrics: waste to landfill, organics, and recycling. Additionally, the Plan encourages tracking of certain high-impact materials: film and rigid plastics, carpet, and e-waste. Lloyd stakeholders will report at one of the following levels of detail:
  - **Best:** Track waste to landfill, waste to recycling, and waste to composting by weight, plus track plastic, carpet, and e-waste by weight.
  - **Better:** Track only waste to landfill, waste to recycling, and waste to composting.
  - **Good:** Track waste to landfill, waste to recycling, and waste to composting at gross level using weight calculated by bin count.

# ACTIONS

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# ACTIONS

# COLLABORATIVE

Building a foundation of collaboration is critical to the success of the Plan. This section lays out the intended actions necessary to facilitate community and member engagement and to create, monitor, and report the outcomes of implemented strategies.

## Strategy: Establish Collaborative Infrastructure

Focusing on people and performance, validating our work with what the community finds useful, and making connections among the business, residential, employee, visitor, and property owner communities is the cornerstone to this Plan. Ultimately it is the community who will enact this change, Lloyd EcoDistrict serves as the catalyst, instigator and organizer. Therefore, before we can talk about the projects, we have to make sure we have a structure for supporting and growing the community base of involvement.

[3] The "key implementers" of these actions will advise, collaborate on, or organize the implementation of the action.

# COLLABORATIVE INFRASTRUCTURE

## ACTION 1 Create and Support Stakeholder Committee

*Lloyd EcoDistrict will convene and facilitate an ongoing committee of district stakeholders.*

**How it works:** Quarterly, Lloyd EcoDistrict will convene and facilitate the stakeholders from this planning process and other interested community members, especially residents, small businesses and minorities. This group is charged with implementing this plan. We will update each other about progress and challenges, review data reports, and share best practices. Lloyd EcoDistrict will coordinate across all participating businesses, and will archive records, key learnings, and results data.

**Benefits:** Facilitated meetings will keep participants focused on their waste reduction efforts and will provide just-in-time assistance. Collaboration will create the synergy needed to achieve lofty waste reduction goals.

**Key implementers[3]:** Lloyd EcoDistrict

## ACTION 2 Establish Baseline, Manage Data and Reporting

*Lloyd EcoDistrict will collect data and establish a more accurate baseline of current waste generation and recovery rates in Lloyd. We will also take responsibility for monitoring participation in the activities described throughout the Plan.*

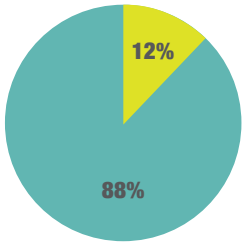
**How it works:** The participants in the Plan committee have agreed to record data on key metrics: waste to landfill, recycling rate, and composting rate. Lloyd EcoDistrict has chosen Energy Star Portfolio Manager — used successfully for the Lloyd EcoDistrict energy plan — as the tool for managing district businesses' data. Lloyd EcoDistrict will ensure that each member is trained to enter their own data about materials flow, and will compile district-wide data for review. As depicted in the chart below, each participant has agreed to track the three core metrics at least monthly. Half the participants also agreed to track carpet, plastic, and e-waste. Some participants have contracted with their haulers to provide data. We will conduct outreach, training, and assistance for small businesses to participate in this tracking effort.

**Benefits:** If we create a true baseline we will be able to measure progress in these waste initiatives. Also, by helping participants measure their monthly waste and recycling outputs we help them get started with the first steps of the more complicated initiatives. Measuring performance helps participants make the case for future and continued involvement in waste reduction activities to upper management, who may not fully understand the reasons for engaging in this work in the first place. Participants can also benefit from having more hands-on understanding of their building's material flows, with possibility for cost savings if they adjust the hauling contracts to fit their needs and actual usage.

**Key implementers:** Lloyd EcoDistrict

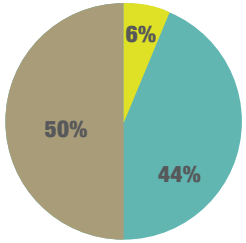
*On April 11th, the stakeholders involved in this plan were polled regarding their capabilities and commitment to tracking waste metrics. These were the results:*

**How often are you willing/ able to collect data?**



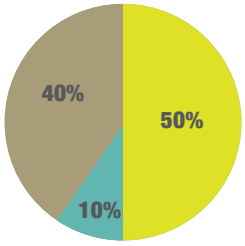

- Weekly
- Monthly

**How do you anticipate reporting the data? (all measured separately)**



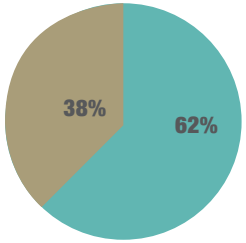

- Waste to landfill, compost, and recycling
- Waste to landfill, compost, and recycling by # of bins
- Waste to landfill, compost, and recycling by weight PLUS added categories

**Who is going to collect the data?**




- My hauler does it
- I want my hauler to do it
- I will do it

**Would you like to have an audit done on your waste stream?**




- I'd like to have one done if it's free
- I'd be willing to pay a small fee to have one done

# PREVENTION

Preventing unnecessary waste should always be the top priority. Prevention is challenging to measure and hard to implement because it depends on the behavior of individuals and the ability of large organizations to change. However, Lloyd EcoDistrict is well-positioned to work with the community to facilitate, coordinate, educate, and collaborate on prevention through events, challenges, classes, and other resources.

**Strategy: Prevent Waste**

Lloyd EcoDistrict will encourage waste prevention through public education and through advancement of sustainable purchasing practices at Lloyd businesses.

# PREVENTION

## ACTION 3 Host Resource Fair

*Lloyd EcoDistrict and Lloyd partners will host resource fairs to raise community awareness about waste prevention, and to connect individuals to resources for materials reuse, sharing, and repair.*

**How it works:** This one-time or recurring resource fair could showcase local reuse options, highlight ideas like sharing libraries, feature repair workshops, or allow participants to swap reused goods. The event could benefit from emulating or partnering with events like Repair Cafe.

**Benefits:** A fair is an approachable starting point for engaging with the broader local community and raising awareness of waste reduction strategies. A fair is well-suited to presenting a large topic like waste prevention to a large audience in a digestible way.

The simple experience of learning to fix a broken vacuum or finding a high-quality item secondhand could be the entree an attendee needs to start looking for ways to prevent waste. A fair would also provide a needed opportunity for community gathering, since Lloyd has few community-focused events. And the event would increase visibility of waste reduction efforts already underway in Lloyd.

**Key implementers:** Lloyd EcoDistrict, Pacific Power, Lloyd Center Mall, Bonneville Power Administration, and Hassalo on Eighth

## ACTION 4 Develop and Offer Classes

*Lloyd EcoDistrict and partners will develop and present classes for a range of audiences including large organizations, small local businesses, employees, customers, and residents to help them reduce waste in their homes and workplaces.*

**How it works:** Classes could be brown bag presentations, full-day workshops, or multi-day programs (similar to a Master Recycler Program). In this action, we are going to focus on food in the next five years. Topics could include reducing food waste at home and sustainable purchasing in commercial settings. Lloyd EcoDistrict could also arrange site visits to showcase how Lloyd stakeholders are managing waste reduction. The Recycling 101 class offered online through OSU, could be leveraged and promoted as well. To ensure equitable access, the classes will be hosted in Lloyd but open to the broader local community, especially adjacent neighborhoods with low-income populations and communitities of color.

**Benefits:** Food waste has high impact, so prevention education is important. These classes would arm individuals and organizations with the skills they need to change practices that cause waste. Classes are also an opportunity to showcase the best practices of Lloyd organizations and to leverage expertise among Lloyd stakeholders and the community.

**Key implementers:** Lloyd EcoDistrict, and Department of Environmental Quality

## ACTION 5 Host District Challenges

*Lloyd EcoDistrict will organize a challenge with Lloyd stakeholders and the Lloyd community to encourage new behaviors and practices.*

**How it works:** A Lloyd EcoDistrict challenge is a fun way to try new things and build community with a bit of friendly competition thrown in to spur on action. We could leverage existing challenges such as Northwest Earth Institute's annual EcoChallenge, or develop something similar to our E-bike Challenge from 2015.

**Benefits:** A Lloyd waste challenge could give individuals a reason to try a new activity. It could capitalize on the desire to be part of a group, and contribute to normalizing new behaviors. It could increase enthusiasm for waste reduction efforts and, in the process, build employee and customer loyalty and engagement. It could quantify impacts of waste in a way that is accessible to the public. It could also improve organizational transparency and knowledge-sharing among The Lloyd community. Event publicity could enhance the visibility of Lloyd's waste reduction efforts.

**Key implementers:** Lloyd EcoDistrict, Metro Regional Center, Oregon Convention Center, and Department of Environmental Quality

## Portland Trail Blazers' Green Games


The Portland Trail Blazers "Green Games" series is a great example of how to engage individuals in a fun way to change their patterns, as Lloyd EcoDistrict aims to do with our district waste challenges. Each game highlighted one of the five pillars of their sustainability efforts: waste, energy, water, transportation, and food. The "waste" game aimed for 100% waste diversion. They achieved this through labor-intensive separation of hard to recycle materials and donation of unsold food. Game goers were educated about these efforts and given opportunities to participate, such as buying raffle tickets in support of the nonprofit partners, or buying merchandise made from upcycled jerseys. The Trail Blazers partnerships within the community added great value to the educational activities by building on existing waste reduction efforts in Portland, and amplifying that work for the benefit of the broader community.

# PREVENTION

## ACTION 6 Establish Sustainable Purchasing Protocol

*Lloyd EcoDistrict will create a document that provides clear guidance on operational changes to implement sustainable purchasing that reduces waste.*

**How it works:** The first phase of this strategy is to gain member commitments to buy fewer or no disposable products. Some businesses have already committed to do this. Such products could be replaced by more durable options, or processes could be redesigned to eliminate the need for the product altogether.[4] These voluntary changes could take time and may be hampered by existing purchasing agreements. A protocol creates a roadmap for amending future purchasing agreements.

**Benefits**: Reducing single-use products has the dual benefit of reducing waste while reducing costs if durables are used over time. Guiding organizational purchasing strategies across Lloyd will especially help smaller businesses identify changes and could produce collective benefits like price discounts through group purchasing.

**Key implementers:** Lloyd EcoDistrict, Department of Environmental Quality, Metro Regional Center, Oregon Convention Center, 1201 Building

## ACTION 7 Develop Commercial Food Waste Prevention Guide

*Lloyd EcoDistrict will create a commercial food waste prevention guide that will outline changes commercial kitchens, grocery stores, and other food operations can make to prevent food waste.*

**How it works:** Several Lloyd stakeholders have agreed to expand food waste prevention efforts in their organization and to contribute information to this guide. The guide could cover waste-saving food preparation, such as using vegetable trimmings for stock and filleting fish efficiently, and could suggest logging food waste to identify opportunities for waste reduction. It could present a clear business case for the affordability of practices that reduce food waste. It could also include case studies, signage, and information about food prevention services, such as LeanPath. This guide will leverage and align with material being produced by local government agencies.

**Benefits:** The guide will help businesses by disseminating best practices widely. Because of the especially high impact of food waste, this strategy could have significant impact on the waste reduction goals.

**Key implementers:** Lloyd EcoDistrict, Green Zebra, Doubletree, American Assets Trust, Oregon Convention Center, Department of Environmental Quality

[4] See Appendix B for Sustainable Purchasing Guidlines which would be included in this protocol document.

## ACTION 8 Develop Best Practices Library

*Lloyd EcoDistrict will collaborate with businesses to create a library of best practices and supporting research to promote practices that reduce waste.*

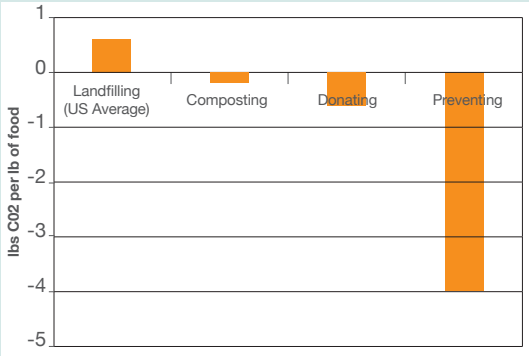
**How it works:** The library could include short case studies of best practices in waste management and prevention. It could include information about how organizations overcame legal barriers, developed logistics for managing materials, and resolved concerns for safety and efficiency. Library materials would be publicly accesible for businesses to use in their own operations.

**Benefits:** Providing a financial rationale may enable the Lloyd community to make a case for, for example, using a reuse service or adopting other strategies from the Plan. Case studies and other research will support Lloyd EcoDistrict's outreach and education efforts, and will highlight that the Lloyd community is leading the way in waste reduction.

**Key implementers:** Lloyd EcoDistrict, Metro Regional Center, Oregon Convention Center, 1201 Building, Department of Environmental Quality

### Why is food waste so important?

Almost forty percent of waste in the landfill is food. Food waste is particularly problematic because it is heavy and wet, contributing to increased waste hauling costs and methane production. Based on Community Environmental Services[5] waste characterization study completed in 2014, if the Lloyd community composted food that is otherwise headed for the landfill that could improve the recovery rate by ten percent. Composting reduces the amount of greenhouse gases produced by decomposing material in the landfill, however, preventing the same amount of food waste results in a substantially greater reduction in greenhouse gas emissions. Composting produces 0.2 lbs less CO2 per lb of food consumed, whereas preventing food waste produces 4 lbs less C02 per lb of food consumed. This is due to the full system impact of food, from farming through refrigeration — each stage produces significant greenhouse gas emissions.




**Greenhouse Gas Impact of Food Waste**

[5]Materials Infrastructure Analysis, Prepared by Community Environmental Services – Eric T Crum, Nate Forst, Erin Anderson and Lauren Bruschi, February 10, 2014. (See Appendix A for excerpt)

# REUSE

The 2014 Materials Infrastructure Analysis conducted in Lloyd revealed that 61 percent of the materials currently going to landfill are actually recoverable. These are usually durable materials or products that no longer serve the owner, but that could meet others' needs. The materials that most commonly fall into this category include office furniture, electronic equipment, display fixtures, and office supplies. Food also falls into this category, and given the high impact of food waste and the level of food insecurity in Portland, food donation was identified as an important strategy in the Plan. In order to ensure that Lloyd is extracting as much value out of materials and food as possible, Lloyd EcoDistrict will help coordinate and improve material reuse and food donation.

## Strategy: Increase Reuse

Lloyd EcoDistrict will increase reuse through two strategies: We will build connections to community resources to help Lloyd businesses reuse products, and we will work with partners to increase food donation.

# REUSE

## ACTION 9 Create Reuse Directory

*Lloyd EcoDistrict, with the help of the Lloyd community, will create, distribute, and maintain a directory of existing materials-sharing resources in order to improve access to these options.*

**How it works:** This publicly accessible directory will be easy to use and fully vetted to ensure that materials are appropriately handled and reach their best next use. Lloyd EcoDistrict will serve as the central touch point and help make the connections between organizations with reusable material and organizations that will use them.

**Benefits:** By connecting organizations to keep material flowing in the economy, Lloyd EcoDistrict will divert materials from landfills. The directory will help the Lloyd community feel confident about where materials go. For example, many organizations are interested in donating electronic waste, but there are data security risks if e-waste falls into the wrong hands. The directory could, for example, connect the Lloyd community to Portland's Free Geek, a reputable organization that has addressed e-waste security risks. (Free Geek provides other social benefits, such as computer training.)

**Key implementers:** Lloyd EcoDistrict, Green Zebra, Hassalo on Eighth, Oregon Convention Center, Metro Regional Center, American Assets Trust

## ACTION 10 Develop Community Reuse Partnerships

*This action is closely related to Action 8, "Create Reuse Directory." Once the directory is complete, Lloyd EcoDistrict, on behalf of stakeholders and the broader community, will develop mutually beneficial partnerships rather than simply using these organizations and businesses on a transactional basis.*

**How it works:** A sampling of possible partnerships could include such services as Go Box, which provides reusable containers for take-out food, ResourceFull Use, which is a materials pooling consortium, or Alien Box, which collects and delivers moving boxes. For example, if we broker connections between property managers, tenants and a durable moving box service, it helps everyone involved understand each other's needs and opportunities. Lloyd can make the market more efficient by bringing those connection points together more quickly and easily in order to facilitate a change in how people move in and out of apartments. Lloyd EcoDistrict will expand reuse by serving as a go-between for its extensive network of businesses and the broader Lloyd community to secure feedback about how partnerships with reuse services are functioning.

**Benefits:** By connecting all of the Lloyd community to these reuse services, there is the opportunity to influence service offerings or create synergist partnerships that benefit the service and its participants.

**Key implementers:** Lloyd EcoDistrict, Oregon Convention Center, DoubleTree

## ACTION 11 Facilitate Material Reuse

*Lloyd EcoDistrict will collect information from district organizations about materials they have that could be reused, and will create a database to enable district businesses to list items for reuse. Depending on demand, Lloyd EcoDistrict will establish shared storage space for reusable items.*

**How it works:** The Lloyd community will be asked to create an itemized inventory of reusable materials in order to identify the largest reuse opportunities. Lloyd EcoDistrict will create a comprehensive database that can be searched by the public. It will describe the features and uses of materials that are available for reuse. Additionally, Lloyd EcoDistrict and partners could manage the database on behalf of the Lloyd community, push notices to participating subscribers about new materials as they become available, and help broker exchanges. As a later phase, Lloyd EcoDistrict may establish shared storage space for materials that are not immediately placed within the district.

**Benefits:** The primary aim of this action is to create infrastructure to make reuse easier. Few Lloyd stakeholders have the capacity to track, transport, and store materials, especially large items like furniture or equipment, which often turn over quickly leaving little time to advertise old items for sale or donation. By making it easy to capture reusable materials that are otherwise lost to the local economy, the database will potentially save money, product value, and time.

**Key implementers:** Lloyd EcoDistrict, DoubleTree, Metro Regional Center

# REUSE

## ACTION 12 Facilitate Food Donation

*Lloyd EcoDistrict will work to increase the number of organizations in Lloyd that are donating food, and will ensure that the donation process runs efficiently.*

**How it works:** Several Lloyd stakeholders are already donating food and several others have committed to establishing food donation within their organizations in partnership with local food programs. This strategy aims to increase use of existing food donation services, by removing the logistical barriers to getting food to potential users. Lloyd EcoDistrict will forge connections, coordinate with food donation providers about existing needs, and work to resolve problems, such as short term storage and small-volume food pickups. There could also be opportunities for establishing district-wide pickups depending on the volume of food and frequency of availability.

**Benefits:** Facilitating food donation is important because restaurants and other food-related businesses frequently have food that does not meet criteria for sale but is still edible. Even organizations without a food-service focus often have leftover food from meetings and events. Food waste is a triple tragedy. Not only does it contribute significant weight and volume to the waste stream, but it is also the most methane-producing form of waste. Wasting edible food also renders the energy and materials used to produce it a waste and fails to address the city's food insecurity problem.

**Key implementers:** Lloyd EcoDistrict, DoubleTree, Green Zebra, Metro Regional Center, Lloyd Center Mall, Oregon Convention Center, Department of Environmental Quality

### Bonneville Power Administration's Investment Recovery Center

Like most organizations, Bonneville Power Administration often finds itself in possession of excess equipment: for an electric power provider, this can be anything from ceramic insulators to office furniture to cell phones to airplanes. Bonneville Power Administration's Investment Recovery Center is tasked with disposing of surplus property in a manner consistent with the agency's commitment to environmental stewardship – i.e., landfill is last resort.

In FY 2016, the IRC returned over $4 million worth of materials back into Bonneville Power Administration's inventory. When there is no option for internal reuse, the IRC finds new life for property through transfer to other agencies, sale at auction, or donation to outside organizations. Recycling is also a priority: this past fiscal year the IRC diverted 1,578 tons of metal, 164 tons of glass and ceramics, and 89 tons of e-waste from the landfill. It is largely thanks to this hard work that Bonneville Power Administration's agency-wide recovery rate is over 90 percent.


Our aim is to help the Lloyd community create successful recycling and composting systems while taking full advantage of Portland's robust recycling and composting infrastructure. We also seek opportunities for services that are not available under the standard recycling system, in particular services that capture hard-to-recycle materials.

**Strategy:** **Increase Recycling and Composting**

Lloyd EcoDistrict will collaborate with the Lloyd community to facilitate needed expansion of existing recycling and composting programs and will create opportunities for efficiently and effectively targeting high-impact specialty materials.

**DoubleTree Hotel**
Compost Leader

DoubleTree Hotel has a long history with food recovery. It was the first business to participate in Portland Composts and has been composting food waste for over 10 years. Unused, severable food left over from large banquets goes down to the cafeteria to feed employees or is donated to local organizations. DoubleTree diverts an average of 14 tons of food waste each month from the landfill. DoubleTree is also dedicated to tracking their results. The compost bins are counted daily and totaled monthly. The weight of monthly food waste diversion is based on the weight of a sampling of bins. Every couple of months the chef will weigh the bins to get the average weight of each bin. Different meal periods produce different weights and volumes, so they take the average weight and multiply it by the number of bins to establish waste diversion numbers.

# RECYCLING AND COMPOSTING

## ACTION 13 Expand recycling and composting programs

*District businesses and organizations involved in creating this plan have committed to expand their current recycling and composting programs while targeting our district goal of a 6 percent increase in recycling and composting. Lloyd EcoDistrict will support district composting and recycling efforts through shared tools and resources available publicly for all busineses to use.*

**How it works:** This action involves uncovering and filling the gaps in current recycling practices to help Lloyd businesses increase their diversion rates and ultimately lower their hauling costs. Lloyd EcoDistrict and partners will help Lloyd businesses with the following:

- Waste audits
- Target messaging
- Infrastructure adjustments
- Consistent signage
- Educational events and materials
- Special equipment (e.g., composting equipment)

This action will work in conjunction with our prevention and reuse actions, especially Action 4: "Develop and Offer Classes."

**Benefits:** Success with this effort will ensure that we meet our waste reduction targets. We will also educate the public to reduce contamination in our recycling and composting streams. In the landfill, food waste produces methane, a potent greenhouse gas. So, after prevention and donation, recovering food waste through composting is a priority. Improvement of existing programs is also a more straightforward way to reach the community with this overall effort. Not every business or individual will be interested in a brand new idea in waste reduction, so it is important for us to have initiatives that are easy to say yes to at a variety of levels of interest, understanding, or commitment. We will also help prepare businesses for the commercial food waste disposal ban.

**Key implementers:** Lloyd EcoDistrict, DoubleTree, Green Zebra, Hassalo on Eighth, 1201 Building, Oregon Convention Center, Lloyd Center Mall, BPS, Department of Environmental Quality, Pacific Power, Metro Regional Center, American Assets Trust

## ACTION 14 Create high-impact materials recovery program

*Lloyd EcoDistrict will work with businesses, haulers, and potential markets to establish a program to increase recovery of "high impact materials." These are materials which Lloyd currently produces in large volumes, which have a high greenhouse gas reduction potential, and strong marketability. Some of these*

[6] Carpet is not in the chart on the next page because it is not disposed of in standard collection bins. However, this material has been identified for targeting due to the likely high volume in Lloyd and high greenhouse gas reduction potential.

[7] These materials were identified through guidance from the Department of Environmental Quality. The benefit of preventing waste of these materials, especially food, is even higher than that of recovery. Prevention is being addressed through Actions 4-12.

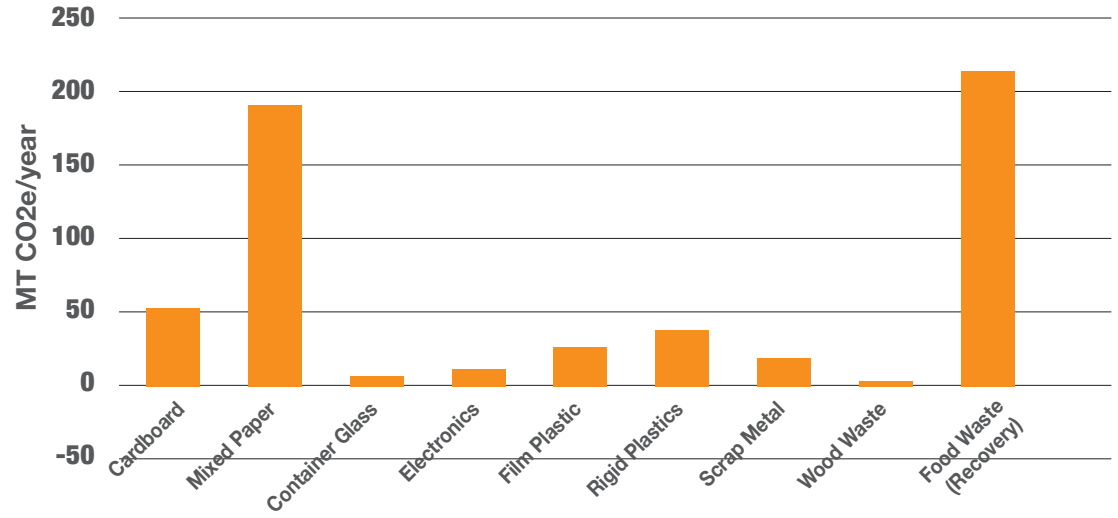
*materials are not currently recyclable under standard recycling programs. The high impact materials which will be targeted through this program include carpet[6], scrap metal from deconstruction, electronics, mixed paper, cardboard, rigid plastics, and film plastics[7]. Food is also a high impact material but it is not included in this action because it is being targeted through Action 13: "Expanded Recycling and Composting Programs."*

**How it works:** Lloyd EcoDistrict could develop a pilot with an interested partner and expand the program to all of Lloyd once successful. The pilot could entail a centralized collection location for high-impact materials, coordinated pickup options, and processing of materials for the market. Lloyd EcoDistrict could work with potential partners to assess what's needed and ensure efficient processes.

**Benefits:** Lloyd EcoDistrict has the ability to have a large impact on the highest impact materials if we use our ability to bring Lloyd together on this issue. If we can develop a program to collect high impact materials at a neighborhood scale, we could share that process with other neighborhoods citywide, statewide, and beyond.

**Key implementers:** Lloyd EcoDistrict, Department of Environmental Quality

**Lloyd EcoDistrict GHG Reduction Potentials from Waste Recovery[8]**




[8] This chart identifies materials with the highest potential greenhouse gas impact from recovery. The calculation was provided by Department of Environmental Quality (DEQ) staff based upon prior analysis of waste collection bins in Lloyd. (See Materials Infrastructure Analysis Appendix A) and DEQ assessment of greenhouse gas reduction potentials for materials. This analysis did not include materials which are not disposed of in the standard disposal bins, such as waste which collected in construction waste bins. Certain materials such as concrete and wood are not on this list because although they have a high greenhouse gas impact during production, they have a low potential benefit from recovery.

## Oregon Convention Center
### Masterful Recycler

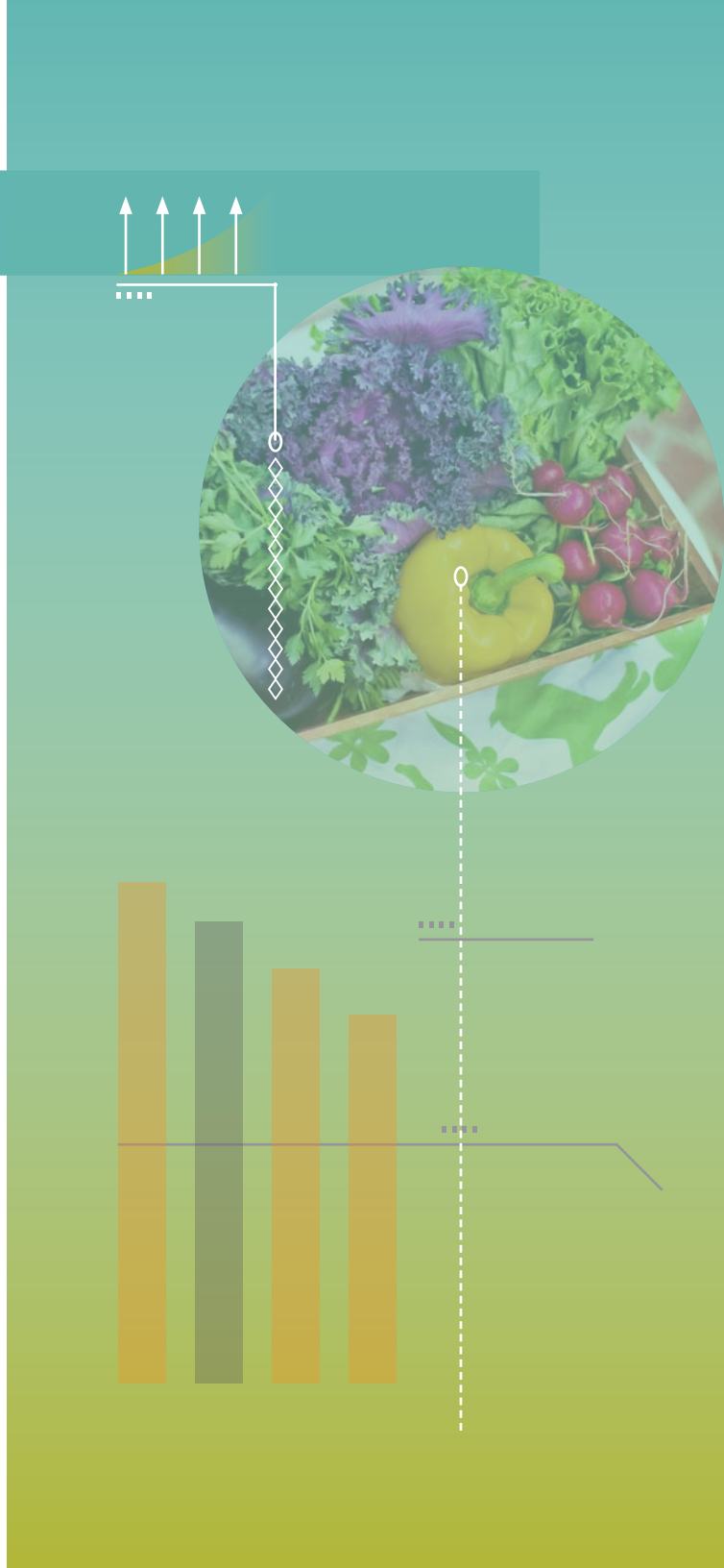
The Oregon Convention Center aims to be the most sustainable Convention Center in the world —and the first choice as a venue for green meetings. In keeping with this vision, they have implemented an ambitious recycling system to capture as much material as possible from their own operations as well as from the many events hosted at the center. In order to achieve their long-term goal of 80% materials recovery, they have implemented a Waste Diversion Policy that includes a deposit returned to clients when all applicable materials are either recycled, donated, or composted. The deposit is applicable toward exhibit fees if the exhibitors meet the requirements for recycling or removing all materials. To help ensure the standards are met, OCC provides exhibitors bins for more than 10 different types of materials including organic waste, glass, cardboard, plastic film, vinyl, Styrofoam, metal, glass and several construction materials where they apply. Implemented in 2016, the OCC already boasts an 84% compliance rate in spite of being the only convention center in the country with this high standard.

# CONCLUSION

*Together* we can do this. Lloyd EcoDistrict and the Lloyd community already provide a sturdy framework on which to build broader community awareness and collective action toward achieving the goals in this Plan. Lloyd businesses are enthusiastic about waste reduction and many are already setting national examples with their waste management practices. We have room to grow our efforts and the will to do so. Our next action will be to begin implementing the plan by convening the new stakeholder committee (see Action 1), identifying the tasks, timelines and resources needed to implement these actions, and determining our priorities.

The Plan provides a clear path for integrating the community in our work through education and public engagement activities. It also leverages Lloyd's many waste management successes to create district-scale efficiencies and new infrastructure to make it easier to reduce, reuse, and recycle waste.

Collaboratively implementing the strategies in the Plan will carry Lloyd to its five-year goals of increasing the volume of waste recycled or composted by 6 percent and maintaining the current rate of waste generated. In turn, Lloyd will move steadily toward the ambitious twenty-year goals of having no net increase in the current total waste generated by weight through 2035, and achieving a waste recovery rate of 93 percent by 2035. In accomplishing these goals, Lloyd will, through local effort, create synergy with the broader waste reduction goals of the City of Portland, Department of Environmental Quality, and other state and federal authorities. There is earth-saving power in community, and that is what Lloyd EcoDistrict is about.



# APPENDIX A: Materials Infrastructure Analysis Excerpt

The following is an excerpt of the executive summary of the *Materials Infrastructure Analysis*[9]. This report provides the most comprehensive analysis available of current conditions of the material stream in Lloyd. A full copy of this report is available on our website at www.ecolloyd.org/reports.

*The Lloyd EcoDistrict, with generous funding provided by Metro Regional Government, partnered with Community Environmental Services (CES) at Portland State University to conduct a materials infrastructure analysis project to better understand the landfill-bound material stream being generated by the district and also identify opportunities for the district to capture value from the waste materials while reaching its sustainability goals. The project was conducted in three phases. The findings from each phase are discussed below.*

### *Phase I*

*A district-wide inventory of buildings, by usage type and square footage, was created and existing waste generation and material composition data was compiled using existing CES, City of Portland, and Metro studies. Twenty five percent of the square footage within the district had material composition data from previous material assessments, this included 97% of the square footage for event spaces and 26% for offices. This highlighted the building usage types where additional material composition data was needed. Five (5) buildings were proposed for additional assessments. The proposed buildings would result in material assessments and composition data representing 54% of the district.*

### *Phase II*

*The proposed material assessments, identified in the previous Phase, were conducted on the landfill-bound materials for the following buildings (usage type):*

- *Double Tree Hotel (Hospitality)*
- *Crowne Plaza Hotel (Hospitality)*
- *Kaiser Permanente Administrative Headquarters (Office)*
- *Calaroga Terrace (Residential)*
- *Lloyd Center Mall (Retail) – two (2) proposed assessments*

*Material assessments included hand sorting the landfill-bound materials into various material categories to determine the types of materials being disposed of and provide insight to what waste items were generated throughout the district. Once the landfill-bound materials were sorted each category was weighed to provide quantitative data regarding the composition of the waste stream.*

### *Phase III*

*The material assessment data from the existing buildings and those completed in Phase II were combined into a comprehensive database to compare and combine the findings. All data was extrapolated to represent one day (24-hours) of material generation and was also projected to represent the entire Lloyd EcoDistrict.*

*The results from the material assessments showed that 15,203 pounds (7.6 tons) of landfill-bound materials were generated in the district in a one-day (24-hours) period. Projected out, the district would generate 5,548,837 pounds (2,774 tons) of material in one year.*

*Within the landfill-bound materials, 61% could have been diverted:*

- *13% was readily recyclable materials, which included items that could be recycled through standard recycling services offered by commercial haulers in the Portland-Metro region.*
- *9% was other recoverable materials, which include items that can be recycled but not through the readily recyclable systems and would require a special material processor.*
- *39% of the materials were compostable food and fibers, which could have been diverted through the City of Portland's commercial composting program.*

*Within the readily recyclable materials, mixed paper was the most common material representing 50% of the readily recyclables and 7% of all generated materials. Plastic film and rigid plastic were the most common other recoverable materials, representing 69% of the other recoverables and 6% of all generated materials.*



[9] "Materials Infrastructure Analysis" Community Environmental Services, Portland State University, Eric T Crum, Nate Forst, Erin Anderson, and Lauren Bruschi, February 10, 2014

### *Cost Analysis*

*The findings from Phase III were used to perform a cost analysis examining the price to dispose of the landfill-bound materials and the value of the items being disposed of. The cost analysis calculated disposal costs beginning at the point of disposal at a region transfer station, which is regulated by Metro, and does not include the costs associated with individual commercial waste hauling services because these are not regulated costs. The projected Lloyd EcoDistrict landfill-bound material generation figures show that it costs $522,680 annually to dispose of the materials. If all of the divertible materials (61%) found within the landfill-bound waste stream were removed and properly sorted, the district could save $320,835 annually from avoided disposal costs, including $73,000 a year from diverting the compostable food and fibers which represented 39% of all generated materials.*

*The cost analysis also calculated the value of the recyclable materials disposed in the landfill-bound waste stream utilizing current, real-market prices for secondary commodities. Within the landfill-bound waste stream, 2,818 pounds of recyclable materials were disposed of per day. If these materials were diverted and sold as secondary commodities, they could generate $183 per day or $66,795 annually.*

*The above figures only represent materials that were disposed in the landfill-bound material stream and do not include the secondary commodities that are currently being recycled through the commingled recycling systems. In order to understand the value of the secondary commodities in the commingled recycling stream and identify additional opportunities for the district, CES estimated the amount and types of materials being generated in the commingled recycling stream for the district. These estimates showed that the district could generate $628 per day and $229,329 annually from the secondary commodities found in the commingled recycling stream.*

*The combined net value from readily recyclable materials found in the landfill-bound and commingled recycling streams in the district is nearly $300,000 a year.*[10]

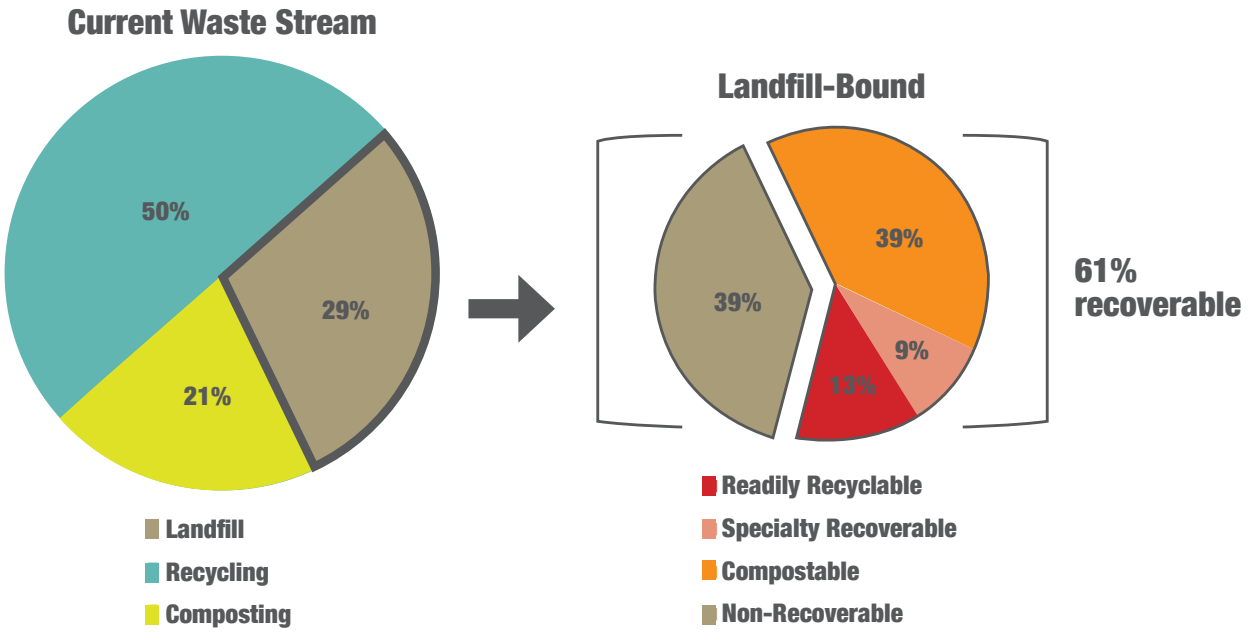
### *Next Steps*

*Various innovative programs currently exist in the region that maximize secondary commodity value from materials generated as a result of day-to-day organizational activities. It is recommended that Lloyd EcoDistrict further explore these programs as a potential model for district operations. However to best understand the case for a similar approach in the Lloyd EcoDistrict, more information is necessary. A deeper analysis of the recycling material stream is recommended to gain a better understanding of the materials being generated and their potential secondary commodity values. This will offer a more impactful business case to examine alternative materials management programs that would serve to improve both the financial and environmental impact of materials management in the district.*

[10] A key issue with realizing these savings is that under standard hauling arrangements, the customer is not able to receive the commodity value of their recyclables. This would require either a different arrangement with the hauler, or processing these materials specially for the commodity market.

The following charts summarize the findings of this Materials Infrastructure Analysis. Throughout the planning process these two charts were used to guide our understanding of the rough baseline conditions of waste in Lloyd.

## CURRENT WASTE STREAM vs LANDFILL-BOUND WASTE




## MATERIALS COMPOSITION

| Readily Recyclable | | Compostable | | Specialty Recoverable | | Non-Recoverable | |
|---|---|---|---|---|---|---|---|
| *Currently collected* | | *Currently collected* | | *Special recycling possible* | | *No available market/processing* | |
| **Corrugated cardboard** | **1.9%** | **Food and fibers** | **39%** | Styrofoam | < 0.5% | Construction waste | 1.6% |
| **Mixed paper** | **6.7%** | **TOTAL** | **39%** | **Plastic film** | **3.8%** | **Restroom waste** | **9.7%** |
| Mixed metals | 1.3% | | | **Rigid plastics (i.e. lids)** | **2.4%** | Single-use cups | 2.7% |
| Plastic bottles & tubs | 2.4% | | | E-Waste | 0.5% | To-go containers | 1.6% |
| Glass bottles & jars | 1.1% | | | Textiles | 0.7% | Liquids | 1.5% |
| **TOTAL** | **13%** | | | Vinyl | < 0.5% | **True Waste** | **22%** |
| | | | | **Office reuse/donation** | **1.5%** | **TOTAL** | **39%** |
| | | | | **TOTAL** | **9.0%** | | |

# APPENDIX B: Public Outreach Results

In April 2017, the WRAP team conducted three days of public outreach at public locations to garner feedback on the committee's draft strategies. These occurred at the Lloyd Farmer's Market, Green Zebra, and Safeway on Broadway. Approximately 125 people shared comments and voted on these ideas.

Most of the forty participants at the Lloyd Farmer's Market work in the district. Green Zebra drew twenty-five people with a mix of district employees and residents, predominantly from Hassalo on Eighth. Safeway drew sixty nearby residents and frequent visitors to the district who represented the most diverse group of participants in terms of age (from six to eighty), income level, race, and physical abilities.

Overall, participants' reactions to these ideas were very positive, with much public support for events, increasing ease of use and signage, and expanded recycling. About one tenth of the comments stated that even when composting was available, it often was set up in a way that made it difficult to use consistently.

### Top 4 most popular concepts:

**a.** Hold waste round-up events for hard-to-recycle items like e-waste

**b.** Make composting widely available and easy to use

**c.** Collect specialty recyclables, such as plastic bags and lids

**d.** Provide consistent signage for composting and recycling

| Problems | Ideas |
|---|---|
| ▪ Apartment buildings do not make it easy to compost even when available<br>▪ Physical disabilities make it difficult to recycle | ▪ Reusable dishware for prepared foods<br>▪ Lendable "party pack" for offices<br>▪ Art installation about waste<br>▪ Provide tenants with compost bucket |

# APPENDIX C: Planning Process

This plan is the culmination of a 9-month stakeholder-driven process. A stakeholder committee was convened, encompassing both major property owners in the district, as well as a representatives of different segments of Lloyd. These stakeholders represented leaders from commercial offices, public agencies, residences, groceries, restaurants, and hotels. Representatives from regulatory bodies at city, regional and state level attended to lend policy guidance and technical expertise. A team of technical advisors from managers of sophisticated materials management programs, leaders of pioneering non-profit solutions for reducing waste to top-level materials management analysts, also helped guide this process.

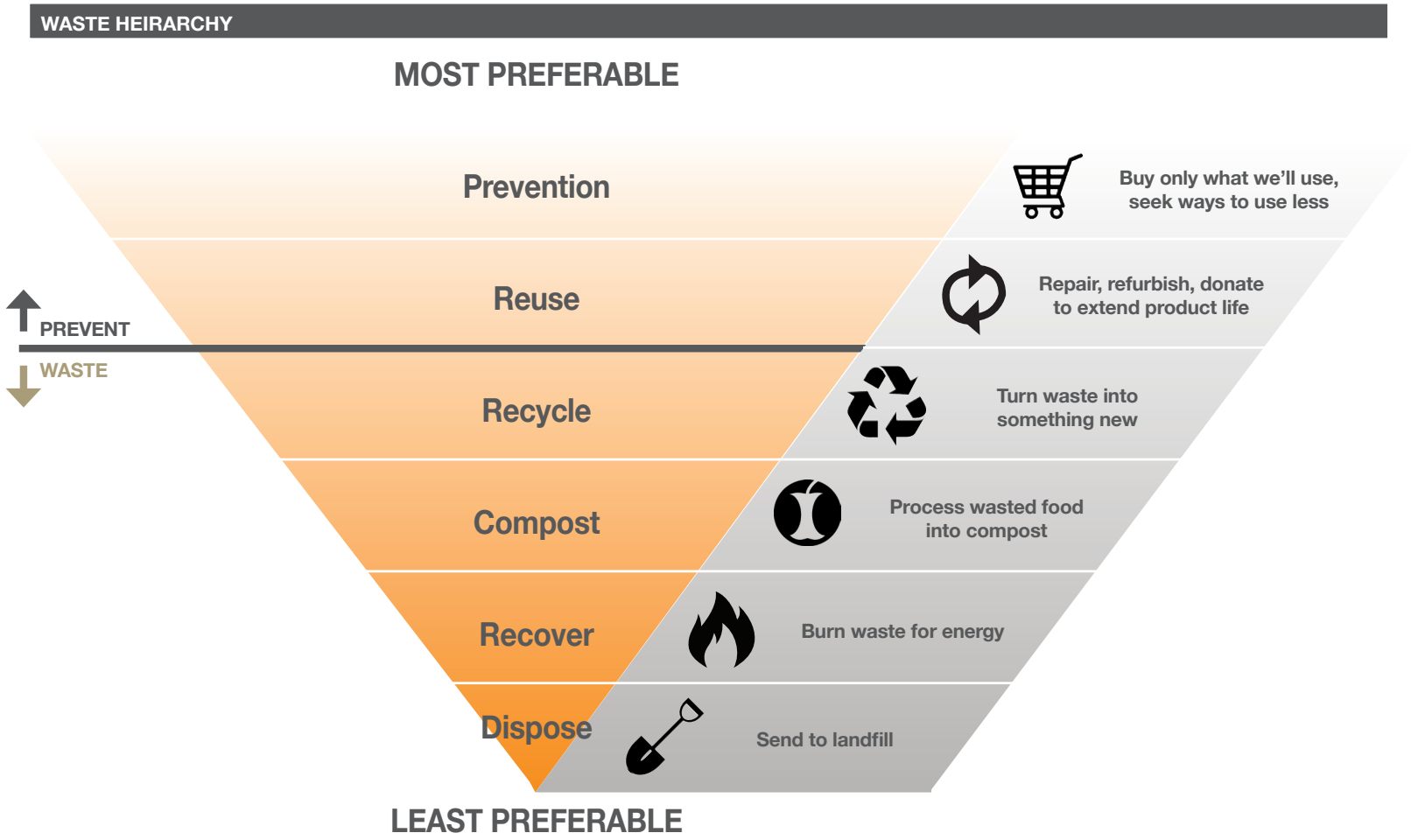
The committee reviewed applicable studies and refined our goals to clarify language. Then, the committee began to develop a growing list of strategies through an iterative process, following the waste management hierarchy, a tool for which places prevention as the highest priority for managing materials. This provided an initial overlay for prioritizing the strategies developed by this group.

After assembling a set of initial strategies, the work of this committee was reviewed through public outreach to residents, workers and the community at-large. Combining this feedback with the committee's responses, the strategies were analyzed and condensed into the set of actions included in this report.

## Process Outline

| | |
|---|---|
| **Phase 1:** Understanding current conditions | **Session 1:** Background & Goals |
| **Phase 2: (iterative)** Defining Goals, Assess Barriers/Opportunities, Determine Actions & Assess | **Session 2:** Optimized Recycling |
| | **Session 3:** Organics Recovery |
| | **Session 4:** Innovative Reuse |
| | **Session 5:** Source Reduction |
| | **Session 6:** District Actions |
| **Phase 3:** Finalize Actions, Commitments, Goals | **Session 7:** Metrics |
| | **Session 8:** Roles & Responsibilities and Implementation |
| **FINAL** | **Session 9:** Final draft review & celebration |

The waste management hierarchy is a key tool used in sustainable materials management. Sustainable materials management is a framework which views waste from a lens that provides a more holistic understanding of its environmental impacts. This approach represents a shift away from end-of-life management towards "using and reusing materials most efficiently and sustainably throughout their life-cycle," as defined in Environmental Protection Agency (EPA) guidance.



# APPENDIX D: General Readiness Assessment

At the first meeting of the WRAP stakeholder committee, the participants were asked to express their organizations' current attitude and support of waste reduction through a Strengths Weaknesses Opportunities Threats (SWOT) analysis. The table below organizes their comments into common themes.

| WEAKNESSES | |
|---|---|
| **Themes** | **Comments** |
| **Data collection** | Ability to measure |
| | Missing data |
| | It will be hard to get people to share their data monthly |
| | More data needed |
| | New data needed |
| | The need for data could be a red herring and might prevent action |
| | Missing information about organizational perforamnce |
| | Having different (data collection) needs and abilities |
| **Haulers and costs** | Reuse facilities/organizations (missing from district) |
| | Business competition — desire to get/keep customers |
| | Costs |
| | # of haulers in the district |
| **Other** | Changing/unstable recycling market |
| | Poor definitions |
| | Lack of knowledge about what can be recycled |
| | May not be core business goal of business |
| | Lack of clear process |
| | Co-mingled recycling |
| | Communication to all stakeholders |

| THREATS | |
|---|---|
| **Themes** | **Comments** |
| **Cost/expense** | Cost to document & track |
| | Cost to implement |
| | May end up costing more |
| | Communication challenges |
| **"No"** | Naysayers who are not helpful or interested in some kind of progress |
| | Not having business at the table |
| | Cultural rejection |
| | If problems happen it might weaken future efforts with partners |
| **End market** | Recycling stream contamination. Did "reduced waste" really make it to the target endpoint? |
| **Consistency** | Implementing (consistent) change throughout the building |
| **Space** | Space for recycling |
| | Not enough space for additional containers |

| STRENGTHS | |
|---|---|
| **Themes** | **Comments** |
| **Momentum and leadership** | District has leaders who want to go forward |
| | Many organizations already working hard to reduce |
| | Blazers, Oregon Convention Center, DoubleTree are already doing a great job |
| | Momentum of the state and the district's ethic |
| | Existing local and state goals driving waste reduction |
| **Culture** | Supportive culture |
| | Build on values of the organization |
| **Incentives** | High existing disposal costs |
| | Economies of scale |
| | Mandatory business recycling |
| | (Existing tools) Porftolio Manager can maybe help us track? |
| **Composting** | Participation in recycling/composting |
| | Composting througout the building |
| **Expertise** | Expertise from Department of Environmental Quality and Metro |
| | Department of Environmental Quality is in the distric |

| OPPORTUNITIES | |
|---|---|
| **Themes** | **Comments** |
| **Eco District culture** | Peer pressure |
| | Creating an inclusive environment |
| **Benefits** | Positive impact on community |
| **Leadership** | District can/will be seen as a leader in environmental action |
| | Role model for successful waste reduction |
| | Positive impact on business image |
| **Priorities** | Reduction potential for high impact |
| | Potential to target “high climate” materials |
| **Needs** | Terminology — use standard terms |
| | Need a “Portfolio Manager” for waste |
| **Opportunities to seize** | More education about waste |
| | Creating a system approach that includes incentives, a cultural development |
| | Enhance food waste prevention by optimizing operations and eliminating health code obstacles |
| | Big food biz could help little food biz in the mall food court |
| | Sustainable purchasing tools |

# APPENDIX E: Baseline

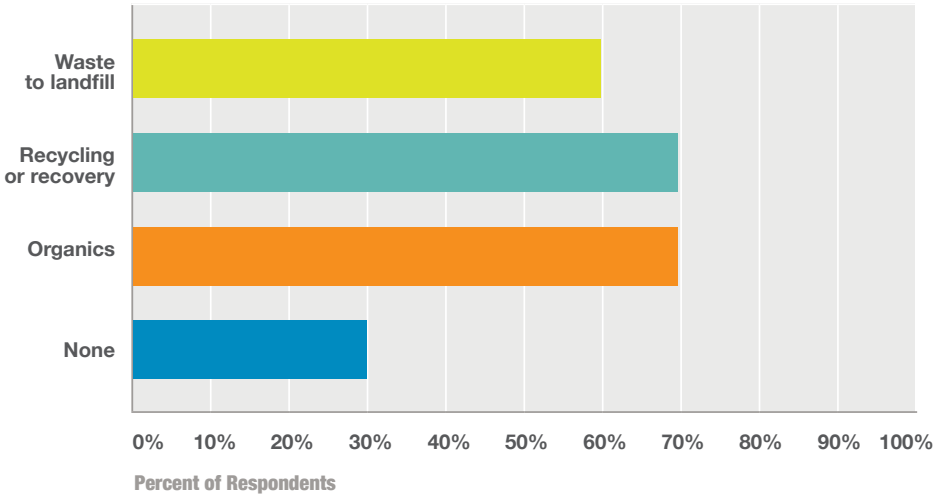
## Appendix E: Baseline of Waste Management Practices

The charts on the left show how Lloyd District businesses are tracking and managing their waste streams.

TRACKING SURVEY I

**Which of the following material streams do you track? Check all that apply.**

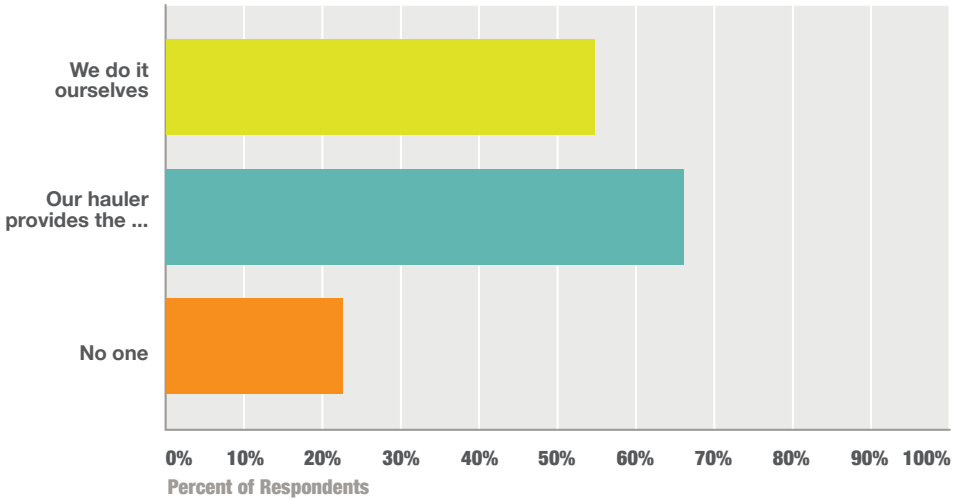
**Answered: 10 Skipped: 0**




TRACKING SURVEY II

**Who gathers this information?**

**Answered: 9 Skipped: 1**



# APPENDIX F: Impact and Feasibility Rating

After the WRAP committee determined its key strategies, they rated each per two criteria: 1) the level of impact the action would have on progressing toward the goal, and 2) the feasibility of implementing it within their organization. They used the following scoring method:

1. The strategy was neither terribly impactful nor feasible for them to implement
2. The strategy was either impactful or feasible, but not both
3. The strategy was both impactful and feasible

| Scoring Convention |
|---|
| 1 = don't like |
| 2 = neutral |
| 3 = like |

The results were compared to the ratings provided through the public outreach conducted in April 2017.

| WRAP Committee Priorities | # of votes for each rating | | | Total Score | Average Score | Public Input | | | Total Score | Average Score |
|---|---|---|---|---|---|---|---|---|---|---|
| Implement recycling program | 1 | 2 | 3 | | | 1 | 2 | 3 | | |
| Target high impact materials | 0 | 1 | 10 | 32 | 2.91 | 0 | 1 | 45 | 137 | 2.98 |
| Provide educational signage | 0 | 3 | 9 | 33 | 2.75 | 3 | 2 | 44 | 139 | 2.84 |
| Create a library of research and best practices to support district businesses | 1 | 3 | 8 | 31 | 2.58 | 0 | 6 | 27 | 93 | 2.82 |
| Provide compost "messaging" for front of office | 2 | 2 | 7 | 27 | 2.45 | 0 | 3 | 32 | 102 | 2.91 |
| Establish food donation program | 1 | 5 | 6 | 29 | 2.42 | 1 | 4 | 46 | 147 | 2.88 |
| Conduct an inventory of district assets (i.e. enterprises that can accept materials)* | 1 | 5.5 | 5.5 | 28.5 | 2.38 | 0 | 8 | 39 | 133 | 2.83 |
| Promote and leverage services that offer waste prevention | 1 | 6 | 5 | 28 | 2.33 | | | | | |
| Establish a district wide challenge program | 1 | 6 | 5 | 28 | 2.33 | | | | | |
| Establish "back of office" composting best practices | 0 | 8 | 3 | 25 | 2.27 | 4 | 18 | 11 | 73 | 2.21 |
| Create links and partnerships with other materials mangement enterprises like the government surplus program and ResourceFULL use* | 2 | 5 | 5 | 27 | 2.25 | | | | | |
| Establish, maintain and staff an on-line materials exchange databank. | 1 | 8 | 3 | 26 | 2.17 | | | | | |
| Commit to buying few (or no) disposable, one-use products. | 2 | 6 | 3 | 23 | 2.09 | 4 | 6 | 18 | 70 | 2.50 |
| Conduct a community resource fair | 3 | 5 | 4 | 25 | 2.08 | 0 | 2 | 42 | 130 | 2.95 |
| Condust an inventory of reusable materials* | 3 | 7 | 2 | 23 | 1.92 | 0 | 9 | 25 | 93 | 2.74 |
| Establish group purchasing program to enable to affordably buy highly recyclable, one-use products (e.g. aluminum drinking cups) | 4 | 8 | 0 | 20 | 1.67 | | | | | |
| P{rovide classes that teach people how to lower their impacts (e.g. cooking classes that encourage buying less ready-to-eat food and encourage composting) | 5 | 7 | 0 | 19 | 1.58 | | | | | |
| Establsih a shared district storage space for materials* | 7 | 4 | 1 | 18 | 1.50 | 0 | 6 | 26 | 90 | 2.81 |
| Establish a materials library (to include borrowable materials and literature)* | 8 | 3 | 0 | 14 | 1.27 | | | | | |
| Public vote on waste round up | 8 | 2 | 0 | 12 | 1.20 | 1 | 3 | 29 | 94 | 2.85 |

# APPENDIX G: Sustainable Purchasing Guide

The following strategies, drawn from guidance from the Sustainable Purchasing Leadership Council[11], are ways that sustainable purchasing policies can help to reduce waste. These will be used to inform Action 6, "Establish Sustainable Purchasing Protocol."

Sustainable purchasing policies can reduce waste through:

- Reducing the amount of material or products purchased. This efficiently cuts both the costs of purchasing and disposal.
- Minimizing the purchase of single-use, disposable products. These products most commonly include paper hand towels; to-go food containers; and disposable plates, cups ,and cutlery. Using durable, reusable versions of these products not only reduces waste, but often lowers overall purchasing costs.
- Targeting more sustainable versions of products. While there is no single definition of a "sustainable" product, many organizations prioritize and establish criteria to guide purchases of the least impactful products. Common sustainable purchasing criteria include: recyclability, made from recycled materials, sourced from sustainably managed resources or organizations, and minimal or recyclable packaging. While this strategy may not reduce an organization's waste by volume, it does reduce the life-cycle impact of material consumption.



[11] "Solution Strategies for Sustainable Purchasing" No. 2014-002, Rev. Dec 03 2016, Page 1.

# APPENDIX H: Data Collection Guide

## Appendix H: Data Collection Guide

In order to monitor progress toward the WRAP goals, the stakeholders committed to a set of metrics to provide answers to impact-related questions:

- What is the total amount of waste by weight coming out of the District and how is it trending over time?
- What is the total waste normalized by population (per-capita waste)?
- What portion of the total is being diverted to recycling?
- What portion of the total is being diverted to composting?
- What can we surmise about reduction in consumption or increase in reuse based on the data collected?

The goal in creating the metrics was to create a management system that returned useful information efficiently. The technical committee devised a core set of six indicators: three leading indicators and three lagging indicators. District businesses have been asked to record data about the lagging indicators into Portfolio Manager each month.

Some businesses receive these data from their waste haulers. Others have to measure the three waste streams themselves. Those who lack the facilities to weigh their waste, recycling, and composting bins will enter bin information (size, number, and frequency of pick up) and use Portfolio Manager's estimator to generate weights.

| Leading Indicators | Lagging Indicators |
|---|---|
| 1. Number of district businesses participating in recycling<br>2. Number of district businesses participating in organics collection<br>3. Number of district businesses participating in reuse or exchange programs | 4. Total weight of waste sent to landfill<br>5. Total weight of recycled material<br>6. Total weight of organic waste composted |

### Portfolio Manager Input Spreadsheet

The sample spreadsheets below are representative of the data entry format in Portfolio Manager. Due to the variety of commitment levels and potential difficulties of gathering this data, we will pursue funding to support and normalize this data collection process.

**By Container**

| Start Date | End Date | By Container | | |
|---|---|---|---|---|
| | | Number of Times Emptied | Average Percent Full | Container Size |
| June 1, 2017 | June 30, 2017 | 10 | 75% | 1.5 yard |

OR

**By Weight**

| Start Date | End Date | By Weight | |
|---|---|---|---|
| | | Quantity | Lbs or Tons |
| June 1, 2017 | June 30, 2017 | 21,450 | lbs |

This cover photo depicts pieces of plastic taken out of the ocean. Despite the beautiful graphic quality of this image, these small plastic pieces represent one of many large and ugly problems associated with our waste. According to a 2014 study, an estimated 8 million metric tons of plastic end up in the ocean each year, making their way to collect in large slow-moving patches called gyres and also into the stomach of marine animals.[11] This illustrates the grand scale of problems which occur when we do not take care to properly manage our waste. This plan takes aim at these small plastics pieces with the goal to make less and recycle the rest.

11 http://science.sciencemag.org/content/347/6223/768

LLOYD eco DISTRICT