RECYCLING SYSTEM GAP ANALYSIS: ORLANDO REGION

Summary Report
Prepared by RRS
February 2018
Beyond 34 is a first-of-its kind public-private partnership to help break through the current national recycling barrier of 34%*. The goal of the project is to drive new local economies through development of closed loop recycling and recovery systems that divert valuable residential, commercial, and industrial resources from the landfill. The Orlando region has been chosen to pilot the Beyond 34 approach.

This document is a summary report that highlights results and recommendations of the RRS recycling system gap analysis for the Orlando region. It provides a brief background of the local stakeholder and champion building approach, as well as the results of regional data analysis, material mapping, and survey that was conducted in Fall 2017. We want to stress how important it is to work together to build a quality data set on the available tonnage of material to achieve critical mass. As with any pilot project, we learn things along the way. This project has been a good laboratory to identify ways to improve collaborative input and planning. More details and documentation about the pilot project and scalability of the Beyond 34 (B34) approach will be presented in a detailed case study produced by the U.S. Chamber of Commerce Foundation (USCCF).

*THE U.S. HAS PLATEAUED FOR APPROXIMATELY THE PAST 10 YEARS AT A 34% RECYCLING RATE. THIS INCLUDES A COMBINATION OF MUNICIPAL SOLID WASTE (MSW) RECYCLING AND COMPOSTING RATES. CONSTRUCTION & DEMOLITION DEBRIS IS ACCOUNTED FOR SEPARATELY.
HOW THE COLLABORATION BEGAN

At a recent USCCF sustainability forum, USCCF and RRS hosted a workshop for global business leaders to discuss the risks associated with low U.S. recycling rates. The focus of the conversation was on the lost economic opportunity from materials discarded in landfills that could be recycled into new products locally. These leaders responded by working collectively on a community-based project to examine the issues and accelerate a scalable-systems approach to increase recycling and recovery.

BENEFITS FOR THE ORLANDO REGION

Orlando is an ideal city to begin the Beyond 34 project. Strong private sector engagement, innovative culture, and robust sustainability goals were all factors that contributed to its selection. Beyond 34 will help increase the region’s recycling rate and mission to advance sustainability and economic growth. RRS estimated that the commercial, industrial, and residential sectors waste more than $84 million in recyclable material value that is disposed every year in the Orlando region. Recycling and recovering this material could provide a huge economic opportunity that cross-sector collaboration, data sharing, and targeted investment can help to unlock. Orlando has a goal to become a zero-waste community by 2040.

PARTNERS

B34 is a collaborative project conducted by these organizations:

SPONSORS:

[Logos of participating organizations]
B34 SPONSOR GOALS
Demonstrate a scalable process at a local economy level for improving recycling and reuse rates.

- Provide a blueprint demonstrating optimized recovery of a common suite of focus materials.
- Develop a strategic partnership throughout the value chain at the state and local level.
- Raise awareness of barriers and opportunities for transition to the circular economy.

RECYCLING OPTIMIZATION WORKSHOP
The Beyond 34 sponsor companies supported a recycling optimization workshop for local elected officials, recycling and solid waste representatives, and the business community. Experts shared best practices and facilitated dialogue on how to optimize recovery programs in the Orlando Region.

The Economics of Recycling
Jobs impact & where is value added?

Material Mapping

Best Practices: Operations, Mentorship, and Roles for Each Sector
What are the best practices that are known to increase recycling and economic benefits?

Regional Action Planning
Priority Projects to Build a Regional System. Where should investment be targeted?

Of the attendees at the workshop, seven public and private sector representatives volunteered as recycling champions to create a vision statement (see page 5).

- Jim Thomas, Orlando Regional Chamber of Commerce, Executive Director
- Chris Castro, Director of Sustainability, City of Orlando
- David Gregory, Section Manager, Orange County Utilities
- Judith-Ann Jarrette, Manager, Noise Abatement and Sustainability, Greater Orlando Aviation Authority
- Tammy Kaleel, Environmental Integration Director, The Walt Disney Parks and Resorts
- Alexa Stone, President, ecoPreserve
- Thierry Boveri, Associate, PRMG
KEY PARTICIPANTS ENGAGED DURING THE ORLANDO REGION RECYCLING OPTIMIZATION WORKSHOP:

1. Greater Orlando Aviation Authority
2. The Walt Disney Company
3. ecoPreserve
4. East Central Florida Regional Partnership
5. Southeast Recycling Development Council
6. Goodwill Industries of Central Florida
7. Florida Green Chamber of Commerce
8. Public Resources Management Group
9. Universal Orlando
10. WestRock
11. Waste Management, Inc.
12. Republic Services

RANGE OF MUNICIPALITIES RECEIVING BEST PRACTICES SURVEY

**Counties:** Lake, Orange, Osceola, Seminole

**Municipalities:** Altamonte Springs, Apopka, Casselberry, Clermont, Kissimmee, Lakeland, Leesburg, Maitland, Ocoee, Orlando, Oviedo, Saint Cloud, Sanford, Winter Garden, Winter Park, Winter Springs

VISION STATEMENT

“Orlando is working to be the most sustainable region in America and has a goal to become a zero-waste community by 2040. We aim to achieve this through the development of comprehensive waste management infrastructure, innovative technologies, and further educating and empowering businesses and citizens to fully adopt a “reduce, reuse, recycle” culture within their communities. We will embrace the principles of a circular and regenerative economy to ensure the sustainability of our community, environment, and businesses.”

-Beyond 34 Orlando Region Champions
THE RECYCLING GAP ANALYSIS

The next step was to conduct a recycling gap analysis of the region. A customized best practices survey was developed for municipalities and businesses to collect recycling data across sectors in the region, and provide an assessment of the opportunities for a regional hub-and-spoke system.

- RRS benchmarked current programs against national best practices and Florida’s 2020 solid waste planning objectives (75% recycling rate).
- Each municipality in the region was invited to participate.

Results: Recycling best practice gaps were identified that are opportunities for targeted investment to increase recycling. Detailed results are provided on pages 10-12.

HOW SECTORS WORK TOGETHER

Public and private sector leaders need to continue working with their local networks to make measurable improvements on recycling gaps. This includes the recycling champions, local governments, commercial businesses and institutions, elected officials, recycling industry, and corporate partners.

Local governments – Collect ongoing recycling and recovery data for their county or municipality. Good data leads to optimizing recycling efficiencies, and can be shared with commercial partners to provide opportunities for economic development and entrepreneurship. Work cooperatively as a region to achieve recovery goals. Focus on strong community engagement and set measurable goals.

Commercial businesses and institutions – Report data on recyclables available for collection to municipalities to achieve the critical mass that will in turn attract private and public investment in cost-effective hub and spoke recycling, help recruit additional businesses to be local champions, drive recycling message outreach via their communication outlets, and advocate for sustainable land use policies (e.g., landfill tip fees that reflect the real value of land).

Elected officials – Support building individual recycling program capacity in your communities and becoming part of hub-and-spoke.

Recycling industry partners (public and private sector) – Continue to assist with information exchange (including transparent reporting on material processed), relationship building, providing market data, and supporting policy incentives. All of these activities should be combined with client and partner education to better facilitate understanding and local community engagement.

Corporate sponsors – Continue to be engaged on shared goals; provide financial support and resources alongside new partners that have emerged such as Terra Cycle, The Recycling Partnership, and Closed Loop Partners. Support testing, implementation and scaling Beyond 34 pilot program efforts.

THE HUB-AND-SPOKE RECYCLING MODEL is the most efficient, cost effective approach. The centralized processing center, or hub, is where recyclables are sorted, baled and/or sold to market. The spokes are the surrounding communities that feed the recyclables they collect to the main hub.
SCOPE
Orlando Region metropolitan statistical area (MSA), including the counties of Orange, Seminole, Lake, and Osceola.

OBJECTIVE
Quantify the impact of commercial and residential recycling programs in the region, and provide a fact-based analysis that serves as a baseline to identify priority regional projects to achieve greater adoption of recycling best practices.

METHODOLOGY
Conduct recycling best practice analysis to obtain a data driven snapshot and identify biggest opportunities.

1. Build from past work of industry groups and experts to define best practices.
2. Apply RRS analytic framework to survey a cross sector of municipalities and participating businesses within the Orlando MSA.
3. Communicate through regional planning group of champions and recycling coordinators.
4. Compile and analyze multiple sets of available data from different sources.
5. Develop Regional Gap Analysis Summary presentation

SURVEY RESPONDENTS

1.2 M people
300K households
Orange County, Cities of Apopka, Clermont, Maitland, Orlando, and Winter Park.

SIX BEST PRACTICE AREAS ANALYZED

COLLECTION
PROCESSING
EDUCATION
POLICY
END MARKETS
FINANCING PARTNERSHIPS
RECOVERING THE ORLANDO REGION’S FOCUS MATERIALS

Disposed tonnage is an area to look for opportunity and lost material value. When looking at our disposed focus material (fiber, metal, plastic, glass, organics), this makes up about 50% of the disposed MSW stream.

The Florida Dept. of Environmental Protection has set a goal of recycling 75% by 2020. If this goal were met, the region would avoid throwing away approximately $62M of additional recyclables annually, and instead provide a significant investment opportunity for local recycling businesses. Recycling and recovering this material provides a direct economic opportunity valued at $84 million annually.

| Opportunity (75% of annual disposal of focus materials from reporting counties, per FL DEP, 2015) | 656K Tons |
| Commodity Value ($95/ton, 2017 regional average commodity value of disposed focus materials) | $62M |
| Avoided Disposal ($33.50/ton, 2017 avg. landfill tip fee) | $22M |
| Total Annual Opportunity | $84M |

$84 MILLION
a significant economic opportunity!
GAP ANALYSIS RESULTS: JOBS IMPACT*

RECYCLING AND RECOVERY OF FOCUS MATERIALS HAS POTENTIAL TO CREATE 8,484 NEW GREEN JOBS.

DIRECT JOBS
Collection, processing and manufacturing activities will yield the opportunity to create more than 4,242 direct new jobs.

MULTIPLIER EFFECT
For every green job directly created in the collection, processing, and manufacturing related to the recovery of focus materials, an equal or greater number of jobs are indirectly generated in the businesses that supply goods and services to the recycling sector or induced through typical consumer behaviors of these workers. A conservative estimate forecasts that the recovery of the currently disposed focus materials will yield an additional 4,242 jobs through indirect and the induced effects.

<table>
<thead>
<tr>
<th>FOCUS MATERIAL</th>
<th>COLLECTION &amp; PROCESSING JOBS</th>
<th>MANUFACTURING JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastics</td>
<td>255</td>
<td>750</td>
</tr>
<tr>
<td>Paper</td>
<td>1,010</td>
<td>1,195</td>
</tr>
<tr>
<td>Glass</td>
<td>120</td>
<td>270</td>
</tr>
<tr>
<td>Metals</td>
<td>235</td>
<td>445</td>
</tr>
<tr>
<td>Organics</td>
<td>390</td>
<td>-</td>
</tr>
<tr>
<td>Subtotal</td>
<td>2,010</td>
<td>2,660</td>
</tr>
<tr>
<td>Disposal</td>
<td>-428**</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,582</td>
<td>2,660</td>
</tr>
</tbody>
</table>

**Job creation estimates forecast approximately 428 disposal-related jobs that would be replaced in this scenario.
Higher adoption of recycling best practices leads to more material recovery for the circular manufacturing economy. The chart corresponds to the percent uptake of best practices, and shows the relative “opportunity” for additional uptake in the region.

*36% residential diversion is based on residential curbside recycling and yard waste collection data from 300,000 households in the region.
MATERIALS COLLECTED

- Multi-family
- Commercial
- Away from Home Collection
- Carts
- Single Stream
- Curbside
- MRF/Transfer Station Access

COLLECTION

- Household participation rate: 32%

END MARKETS

- Contracted Hauler
- Commodity Destination Knowledge
- Additional Materials to Recover
- Bale and Ship Directly
- # of SS MRFs in Region

POLICY

- Mandatory Recycling Ordinance
- Multi-family Recycling Ordinance
- Enforcement
- Mandatory Recycling Legislation
- Landfill Ban

- Pay-As-You-Throw Program
- Revenue Sharing
- Franchise Agreement
- Tax Based Funding
- Fee Based Funding
- Recycling Costs Embedded in Disposal

EDUCATION

- Website with Educational Materials
- Keep America Beautiful Programs
- The Recycling Partnership Programs
- Recycle Rewards/Recycle Bank
- Listed in Earth 911 Directory

Annual Education & Outreach Budget: $1.65/HH/Year

FINANCING PARTNERSHIPS

- State Grant Funding Available
- Partnered with Other Municipalities on Grant Projects
- Utilizes Private Sector Partnerships
- Utilizes TRP Grant Program
- Utilizes Closed Loop Fund Resources
- Regional Economic Development Tools Available

OPPORTUNITIES

EDUCATION

Create a collaborative cross-sector communication campaign in the region that provides a branded consistent message across all stakeholder platforms.

Provide increased funding on a per household basis for recycling education.

PROCESSING

- Fully utilize Orlando regional partnership to develop state-of-the-art MRF infrastructure.

- Design and build a high-capacity MRF system that can manage commercial, industrial, and municipal recycling streams.

FINANCING PARTNERSHIPS

- Tap into locally and regionally available project funding through local partners, recycling industry finance tools, and other available private/public resources.
<table>
<thead>
<tr>
<th>COMMUNITY</th>
<th>% UPTAKE OF BEST PRACTICES</th>
<th>RESIDENTIAL DISPOSAL RATE (LBS/HOUSEHOLD)*</th>
<th>RESIDENTIAL CURBSIDE RECYCLING RATE*</th>
<th>TOTAL RESIDENTIAL DIVERSION (CURBSIDE RECYCLING AND YARD WASTE)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Maitland</td>
<td>41%</td>
<td>2,397</td>
<td>20%</td>
<td>41%</td>
</tr>
<tr>
<td>Orange County</td>
<td>41%</td>
<td>1,810</td>
<td>24%</td>
<td>37%</td>
</tr>
<tr>
<td>City of Clermont</td>
<td>26%</td>
<td>1,825</td>
<td>19%</td>
<td>37%</td>
</tr>
<tr>
<td>City of Orlando</td>
<td>49%</td>
<td>1,736</td>
<td>14%</td>
<td>31%</td>
</tr>
<tr>
<td>City of Winter Park</td>
<td>46%</td>
<td>1,345</td>
<td>17%</td>
<td>37%</td>
</tr>
<tr>
<td>City of Apopka</td>
<td>38%</td>
<td>1,875</td>
<td>10%</td>
<td>31%</td>
</tr>
</tbody>
</table>

*Based on best available data from municipal surveys

**COMMON STRENGTHS**
- Curbside Collection with Rolling Carts
- Weekly Collection
- Some Recycling Education
- Recycling Services Embedded in Disposal Charges

**COMMON OPPORTUNITIES**
- Commercial & Multi-family Provision
- Food Scrap Collection
- Processing Options
- Explore Program Financing Options
- Partnership Funding Opportunities
- Partnership Programs – TerraCycle, E911, and RecycleBank
A major outcome from the recycling optimization workshop was the champion-building and local stakeholder network that developed. In addition, RRS facilitated very robust visioning and planning sessions that helped define a host of topic areas and opportunities for collective action. Below is a summary of prioritized action items developed as a result of this work and verified through data gathered during the Gap Analysis.

<table>
<thead>
<tr>
<th>TIMEFRAME</th>
<th>EDUCATION &amp; ENGAGEMENT</th>
<th>COLLECTION &amp; PROCESSING</th>
<th>POLICY</th>
<th>FINANCING PARTNERSHIPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term</td>
<td>Organize Recycling Champions Network</td>
<td>MRF RFP</td>
<td>Multi-Family and Commercial Ordinances</td>
<td>MRF Feasibility Study Investment and Financing Options</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expand Backyard Composting and Food Waste Drop-Off Network</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Mid-term  | Collaborative Communications Campaign | MRF Upgrade Planning | Consider Additional Incentives | Partner Funded Studies:  
  • Waste Characterization  
  • Regional Access |
|           |                        | Pilot Curbside Collection for Source-Separated Organics |        |                        |
| Long-term | Campaign Refresh | Organics Management Facility | Landfill Tip Fee Adjustment | Regional Solid Waste Plan |
|           |                        | MRF Upgrade | | |

**FUNDING MECHANISMS**
Local investment in partnership with grant funding and private sector financing options provide resources and tools to municipal recycling champions:
- The Recycling Partnership
- Closed Loop Partners
- US EPA RCRA and Sustainable Materials Management grants
- Funds from impact investment entities
- Green Bond issuance
TOP 5 RECOMMENDATIONS & INSIGHTS

1. Organize Recycling Champions Network and Develop Regional Plan
   - Create a two-tiered regional organization to implement the regional recycling plan: steering committee with authority to designate resources and make collective decisions on investments, and technical resource team that provides best practices expertise, tools, resources, and is consulted during implementation. The Orlando Economic Development Partnership, Orange County, and City of Orlando lead in collaboration with MSA municipalities. Convene local businesses and stakeholders for regular Network meetings.
   - Develop Regional Plan with goals, strategy, economic, and environmental benefit success measures, defined responsibilities. Work from recycling baseline established during gap analysis to expand regional data collection beyond municipal, include commercial and industrial sources of recyclable focus materials.
   - Perform waste composition study to identify quantity of material and lost value being landfilled for investment. Will also inform the long-range plan –including composting, specialty materials, reuse.
   - Transparently report recyclable quantities to measure success; maintain database to track recyclables and reach critical mass that attracts new manufacturing to the region, including plastics recyclers.

2. Leverage Technology to Recover More Commodity Recyclables
   - Develop an MSA RFP to upgrade the closed MRF to an automated single-stream MRF with state of the art technology to process 35 tons/hr of today’s prevalent packaging formats and materials from not only residential, but also commercial and industrial sources.
   - Recruit a private sector MRF operator to run the MRF via a public-private partnership. Perform due diligence on processing capacity, supply analysis including regional access study, market analysis, additional generation data (commercial and industrial), investment required, and financing plan.

3. Expand Backyard Composting and Food Waste Drop-Off Network
   - Encourage MSA Municipalities to provided expanded community food waste diversion options.
   - Expand backyard composting program across region.
   - Expand food waste recovery to neighborhood and community drop-off sites (farmers markets, convenience centers, etc.).

4. Develop Supportive Waste Policy and Incentives
   - Develop supportive waste policies and incentives – starting with a landfill tip fee adjustment – to drive waste diversion from landfill and raise revenue for the MRF.
   - Revisit municipal ordinances within MSA and ensure multi-family and commercial recycling requirements are established and enforced.

5. Engage Stakeholders through a Collaborative Communications Campaign (municipal/retail/hospitality/institutional)
   - Develop branded regional recycling content for key messages to be used by stakeholders across their various platforms with support from B34 sponsors, beginning with pre-campaign target audience research.
   - Showcase zero waste best practices with organizations that share B34 goals (e.g. NPE2018 The Plastics Show in Orlando 65,000+ attendees).
   - Provide recycling bins through retail partners to highlight community campaign (Walgreens, Target, additional sponsoring companies).
   - Utilize strategic messaging in regional multimedia campaign to measure and sum impact of individual actions and provide feedback on benefits.
   - Utilize national partners such as Keep America Beautiful, The Recycling Partnership, etc. to leverage resources and messaging.
   - Identify additional grassroots partners – faith leaders, neighborhood and school groups as stewards for campaign and messaging.