



Carton Council

Carton Council of North America

**Research and Analysis of Policies
that Drive Increased Recycling**

Final Report

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May 2014

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Executive Summary

Carton Council North America has performed an assessment of policies that might be helpful tools for supporting post-consumer packaging and printed paper recovery and recycling efforts in the U.S. and to identify best practices related to deployment of those policies, both at the state and local (county/municipal) levels. The purpose of this assessment and resultant report is provide the foundation for Carton Council policy and strategy formulation and as a reference for developing specific public-facing outreach and advocacy initiatives.

The Carton Council contracted with Reclay StewardEdge (RSE) to perform this policy assessment. While funded by the Carton Council, RSE was instructed to investigate policies and policy implications in a manner that pertains to all types of post-consumer packaging and printed paper.

As a starting point for this assignment, RSE reviewed recent work conducted on the topic, including reports commissioned by Metro Vancouver, ReCommunity and AMERIPEN. In addition to these major studies, RSE conducted a literature review related specifically to Pay-As-You-Throw (PAYT) service fee policies due to the extensive amount of research that has been conducted to date on this topic. Based on these resources, RSE in consultation with the Carton Council, chose three types of policy mechanisms to serve as the focus of this research, categorized for the purposes of this report as:

- Recycling policies
- Disposal bans
- Pay-as-you-throw (PAYT) service fees

The Carton Council recognizes that it may be advantageous to label and/or categorize these policies differently for other purposes and target audiences.

The methodology employed for this assessment involved a combination of primary and secondary research. As a first step, a list of states with at least one of the selected policies in place was compiled, drawing on the reports commissioned by AMERIPEN and ReCommunity as well as Internet research on the states themselves. Secondly, a list of example local governments within targeted states that had high-performing recycling programs and used one or more of the target policy tools was developed. This list was supplemented with two well-performing municipalities in states without the target policy tools in use. Using this list of target state and local jurisdictions, web-based research was conducted to collect key information.

Findings

In addition to web-based research, RSE conducted interviews with state and local government representatives. The main purpose of these was to obtain qualitative information on interviewee perceptions regarding the cause of their jurisdictions' high recovery performance and what works and does not work regarding their policy approach.

Over the course of this research, three distinct types of recycling policies were identified:

1. Recycling Service Provision: Local governments and/or haulers are expected to provide recycling services or a specific level of service based on criteria such as population size (e.g. population greater than 4,000) or generator type (e.g. commercial properties).
2. Recycling Participation/Source Separation: Requires the source separation of recyclables from the waste stream. Typically, specific generators (e.g. single-family, multi-family and/or commercial generators) are required to participate in recycling programs.
3. Recycling Target/Goal: Entities such as local governments and state agencies are expected to achieve a specified recycling target or goal (e.g. local government must achieve a 50% recycling rate by a given year). The goal can target different metrics for performance including waste generation, waste prevention, and recovery or recycling performance. Table E-1 below outlines the type of mandate in each of the states identified.

Table E-1: State Recycling Policies

Jurisdiction	Service Provision/Level		Participation/Source Separation		Target/ Goal
	<i>Material Specific</i>	<i>Not Material Specific</i>	<i>Material Specific</i>	<i>Not Material Specific</i>	
California		✓			✓
Connecticut	✓		✓		
Delaware		✓		✓	✓
Florida					✓
Maine			✓		✓
Maryland	✓				✓
Minnesota		✓			✓
New Jersey	✓		✓		✓
New York				✓	
North Carolina			✓		
Oregon	✓				✓
Pennsylvania	✓		✓		✓
Rhode Island	✓		✓		✓
Vermont	✓		✓		✓
Virginia					✓
Washington		✓			✓
West Virginia		✓		✓	
Wisconsin	✓		✓		

RSE’s research identified disposal bans for consumer packaging at the state and local level. All bans identified are material-specific, listing certain materials and types of packaging (see Table E-2). Disposal bans for consumer packaging have been adopted in four states in the United States: Massachusetts, North Carolina, Vermont¹ and Wisconsin. With the exception of glass containers in North Carolina, the bans apply to all MSW, both residential and IC&I². In both Vermont and Wisconsin the disposal bans are paired with recycling mandates.

Table E-2: State Packaging Disposal Bans

Jurisdiction	Glass	Steel	Aluminum	Plastic	Paper ^(a)
Massachusetts	Containers	Containers	Containers	1-6 Bottles	OCC, RP
North Carolina	Containers ^(b)		Containers	1-7 Bottles	
Vermont	Containers	Containers	Containers	1-2 Bottles	OCC, RP
Wisconsin	Containers	Containers	Containers	1-2 Bottles	OCC, ONP, OMG, OP

Notes:

(a) OCC=old corrugated containers, ONP=newspaper, OMG=magazines, OP=office paper, RP=all recyclable paper

(b) Applies only to certain restaurants and bars with alcohol permits

Figure E-1 shows disposal bans and recycling policies that have been enacted at the state level in the United States.

PAYT programs and policies come in a range of forms depending on the design objectives and preferences of local jurisdictions. Program types include:

1. **Can/Cart:** Generators pay a fixed price based on the size or number of containers they select for their waste service, e.g. 30, 60 or 90 gallons of service. The larger or greater number of waste collection containers used, the more a generator will pay.
2. **Bag, Tag & Sticker:** Generators purchase special color-coded or imprinted plastic bags or stickers for their waste. The predetermined price of each bag or sticker includes the cost of waste services. The more bags they set out or tags/stickers used, the more generators pay.
3. **Hybrid:** Generators pay a fixed amount for a specified maximum volume of waste to be set out per collection period. Waste set out for collection that exceeds this amount accrues an additional charge.
4. **Weight-based:** Weight is either determined when generators drop off solid waste or collection vehicles are equipped with technology that can assess the weight of the contents of a container at curbside and charge accordingly.
5. **Other:** Generators are offered a PAYT fee structure as a voluntary option.

¹ Vermont’s law was enacted in 2012 and the state Agency of Natural Resources is currently developing policies, programs and guidance for its implementation.

² Institutional, Commercial and Industrial – generally used to refer to non-residential municipal solid waste. Only glass containers generated by holders of Alcoholic Beverage permits are banned from disposal. (See Table E-2 for more details).

According to RSE’s research, Minnesota and Washington have some form of ongoing PAYT requirement while Oregon, Iowa and Wisconsin have strong state policies that encourage PAYT adoption. Table E-3 summarizes this information.

Figure E-1: Disposal Bans and Recycling Policies by State



Table E-3: States with PAYT Policies

State	PAYT Mandate or Policy
Minnesota	Local governments that charge waste generators for solid waste collection must implement a fee structure that increases as the volume or weight of waste collected from each generator's residence or place of business increases.
Washington	Applies mostly to private collectors that operate in unincorporated areas. Does not apply to local governments; however, the law's existence has led to PAYT throughout the state.
Oregon	No legislative mandate, but PAYT is on list of nine recycling elements that municipalities choose

	from when designing their recycling programs to comply with state regulations.
Iowa	PAYT at the local level can be required if recycling goals are not met.
Wisconsin	PAYT at the local level can be required if recycling goals are not met.

Best Practices

Best practices for recycling policies and disposal bans are similar because both focus on changing programs and infrastructure, and thus share similar challenges. RSE identified best practices derived from the many insights and diverse knowledge of the individuals interviewed and programmatic information reviewed for this project (See Table E-4).

Table E-4: Best Practices for Recycling Policies and Disposal Bans

1. Employ a comprehensive package of programmatic tools to support policies.
2. Pair multiple policies to create a synergistic effect.
3. Utilize policies that require programmatic best practices.
4. Provide funding support, particularly funding for achieving initial compliance.
5. Phase in compliance to provide time for recovery infrastructure development, public understanding and awareness building, and transition to the new system.
6. Utilize a “supportive” enforcement approach involving monitoring, feedback and technical assistance, with penalties used as a last resort.
7. Clearly define compliance points and compliance mechanisms.
8. Require data gathering and reporting to benchmark and track performance.
9. Identify champion to promote policies and shepherd their adoption.
10. Cultivate stakeholder support to build consensus for action.

PAYT has been widely analyzed and reported on in the literature reviewed for this project. Table E-5 summarizes best practices derived from SERA’s PAYT guidance documents.³

Table E-5: Best Practices for Implementing PAYT

State Level

1. Identify champion to promote policies and shepherd their adoption
2. Allow for flexibility at the local level: Depending on state characteristics, it may be useful to set a threshold for PAYT expectations based on population (e.g. communities larger than 4000 people are expected to implement PAYT)
3. Include the following key elements in legislation:
 - a. Background and safety regulations to address truck and operator safety and other concerns.

³ Ibid.; and Skumatz, L. 2002. *Variable-Rate or “Pay-As-You-Throw” Waste Management: Answers to Frequently Asked Questions*. Available here: <http://reason.org/files/a4e176b96ff713f3dec9a3336cafd71c.pdf>

- b. Universal curbside recycling with costs embedded in solid waste collection rates. Service requirements should be material-specific and outline container size and collection frequency.
- c. Guidance on container size, PAYT rate structure and other fee-related elements.

Local Level

1. Identify champion to promote policies and shepherd their adoption.
2. Design the PAYT program with hauler input.
3. Conduct extensive customer education and outreach.
4. Incorporate the cost of recycling in the solid waste collection fee.
5. Develop recycling programs with convenience equal to that of disposal.
6. Ensure pricing increments and container sizes are strategically chosen to maximize impact on behavior change.
7. Establish the ability to inspect hauler records and conduct outreach.
8. Adjust pricing structure over time to ensure stable financing of the solid waste and recycling collection system.
9. Ensure proper resourcing of city staff to monitor the PAYT program by considering the subscription responses other cities experienced when PAYT was implemented.

Conclusions

In the process of completing this policy research and examining existing state and municipal programs, RSE has concluded that high-performing municipal recycling programs:

- collect a wide range of recyclable materials (and increasingly organics),
- provide waste generators with convenient access to recycling opportunities,
- have strong recycling promotion programs, and
- are supported by a compliment of policies and funding that prompt and enable infrastructure development and incentivize participation in recycling programs.

Cart based, single stream curbside recycling is now regarded as a best practice and there a growing focus on universal recycling service provision – for multi-family as well as single family homes plus businesses, institutions and other away-from-home locations. Two examples of communities with such programs reviewed for this study are San Francisco, CA and Seattle, WA.

Of particular importance with respect to the above is funding. Generally speaking, states whose governments provide funding support and municipalities that have PAYT systems in place have more high-performing recycling programs. Delaware is a state that passed a universal recycling law with a funding mechanism to support implementation, and Austin and San Francisco both have PAYT programs to fund their collection systems.

A unique blend of circumstances in each jurisdiction will determine the appropriate policy positions. Stakeholders will need to assess what is politically and institutionally achievable on a jurisdiction-specific basis, and then select a compliment of policy and program components from the tool box of policy and program options. Four key circumstances will impact development of positions on a state-by-state basis:

- Extent to which and nature of policy is already in place
- Availability of viable end markets and processing infrastructure

- Availability of funding mechanism(s) to support recovery program development
- Political climate and culture with respect to solid waste management and environment protection

State and local policies and programs ideally should be paired in a synergistic fashion. For example, past studies have reported that PAYT is more effective when communities are required to establish recycling or diversion plans with stated goals, and it is more likely that communities will implement PAYT if there is a recycling service provision policy in place. Some jurisdictions recommend mandating PAYT prior to other recycling policies to create a stable funding mechanism for recycling programs.

While many states and local governments have succeeded in getting policies enacted, doing so is not without challenges. Formation of a coalition of diverse partners to work collaboratively in promoting a jurisdiction specific policy approach paired with supporting program tools will heighten the likelihood of success and in overcoming stakeholder opposition that may exist.

1 Introduction

A variety of policies have been implemented by state and local governments with the aim of increasing recycling in the United States. Many of these policies have been in place for decades while some have been adopted in the last couple of years.

Carton Council North America retained Reclay StewardEdge (RSE) to perform an assessment of policies that might be helpful tools for supporting its carton recovery and recycling efforts in the U.S. and to identify best practices related to deployment of those policies, both at the state and local (county/municipality) levels. While funded by the Carton Council, RSE was instructed to investigate policies and policy implications in a manner that pertains to all types of post-consumer packaging and printed paper.

1.1 Review of Existing Literature

As a starting point for this assignment, RSE reviewed recent work conducted on the topic, including reports commissioned by Metro Vancouver, ReCommunity and AMERIPEN.

The report entitled *North American Waste Management Systems Comparison Study: Outstanding Communities and Programs in North America & Beyond* (2007) prepared by Skumatz Economic Research Associates, Inc. (SERA) presents the results of detailed research on leading waste diversion communities and program/policy approaches across the US and internationally. The study focuses on the city level and presents an overview of 19 well-performing cities. Recommendations include commercial strategies (e.g. making haulers' permits contingent on offering recycling and requiring the cost of recycling to be embedded in the trash fee so recycling doesn't cost businesses more), refinements to curbside recycling and collection elements (e.g. container size, collection frequency, use of pay-as-you-throw service fees), and bans on the disposal of recyclable materials.

The report, *Disposal Bans & Mandatory Recycling in the United States*, prepared for ReCommunity by The Northeast Recycling Council (2011), contains a state-by-state inventory of existing state-level disposal bans and mandatory recycling laws in the United States. The report is a compilation of information and does not offer any analysis of these policies' effectiveness in driving the recovery of used packaging, or how they are being implemented.

Drawing on a global scan of developed countries, AMERIPEN's *Analysis of Strategies and Financial Platforms to Increase the Recovery of Used Packaging* (August, 2013) builds on these and other earlier research efforts and concludes that the waste strategies that hold the most promise to increase the recovery of used packaging in the U.S. are PAYT initiatives, disposal bans, and recycling mandates. The report found that these three policies, particularly when used in combination, help shift consumer waste management behavior away from disposal and towards recycling and other recovery strategies. The report sought to identify U.S. states with one or more of these policy tools in place, as well as the packaging material types that the policies applied to (for bans and mandates only).

In addition to these major studies, RSE conducted a literature review related specifically to PAYT due to the extensive amount of research that has been conducted to date on this topic. Key studies reviewed included:

- Skumatz, L., and Freeman, J. 2008. *Increasing Recycling Now! Implementing Recycling And Pay As You Throw (Payt) Ordinances, Legislation, Or Contracting: Practical Guide and Model Language*. Available here: http://www.paytnow.org/PAYT_OrdinancesANDLegislationReportSERA_v4Part1withattachments.pdf
- Skumatz, L. 2002. *Variable-Rate or “Pay-As-You-Throw” Waste Management: Answers to Frequently Asked Questions*. Available here: <http://reason.org/files/a4e176b96ff713f3dec9a3336cafd71c.pdf>
- Skumatz, L., and Freeman, D.J. 2006. *Pay As You Throw (PAYT) In the US: 2006 Update and Analyses*. Available here: <http://www.epa.gov/osw/conserve/tools/payt/pdf/sera06.pdf>
- Kelleher, M., Robins, J., and Dixie, J. CD Howe Institute. 2005. *Taking Out the Trash: How To Allocate the Costs Fairly*. Available here: www.cdhowe.org

Given the findings of the above mentioned studies, RSE in consultation with the Carton Council, chose three types of policy mechanisms to serve as the focus of this research, categorized for the purposes of this report as:

- Recycling policies
- Disposal bans
- Pay-as-you-throw (PAYT) service fees

The Carton Council recognizes that it may be advantageous to label and/or categorize these policies differently for other purposes and target audiences.

1.2 Methodology

The methodology employed for this assessment involved a combination of primary and secondary research. As a first step, a list of states with at least one of the selected policies in place was compiled, drawing on the reports commissioned by AMERIPEN and ReCommunity as well as Internet research on the states themselves. Secondly, a list of local governments within targeted states that had high-performing recycling programs and used one or more of the target policy tools was developed. This list was supplemented with two well-performing municipalities in states without the target policy tools in use. Using this list of target state and local jurisdictions, web-based research was conducted to collect key information. The information collected on each jurisdiction (both state and local) is available in Appendix 1. Note that included in this appendix, but not discussed in this report, is information on which states have mandates for recycling in public schools.

State policy is a key driver in local policy development and enactment. Furthermore, both state and local policies entail implementation and behavior change at the local level. Thus, local-level research focused on implementation approaches pertaining to ordinances and programs, as well as compliance and enforcement procedures.

In addition to web-based research, RSE conducted interviews with state and local government representatives. The main purpose of these was to obtain qualitative information on interviewee perceptions regarding the cause of their jurisdictions’ high recovery performance and what works and does not work regarding their policy approach. Questions were also asked regarding stakeholder concerns, what it might take to add another material (e.g., cartons) to the list of materials covered by the policy(s) in place, and the drivers leading to their choice of policy tools. Interview questions are provided in Appendix 2. Interviewees included representatives from the following jurisdictions:

At the state level:

- All states (4) with bans
- All states (2) with PAYT policies
- Two (2) states with recycling policies, each representing a different type of policy (requiring recycling of specified materials and meeting of specified goals). The third policy type (recycling service provision) was already captured by a state having both that type of mandate and PAYT

At the local level:

- One high-performing local jurisdiction per selected state
- One local jurisdiction using one or more of the target policies in the absence of state legislation

Tables 1 and 2 present the list of state and local interview participants that contributed to the study.

Table 1: State Interview Participants

State	Interviewee Name	Interviewee Department	Interviewee position
MA	John Fischer	Mass Department of Environment Protection	Waste & Recycling Division
MN	Jim Chiles	Minnesota Pollution Control Agency	Agency Rules
NJ	Guy Watson	Dep. of Environmental Protection	Chief, Bureau of Recycling and Planning
NC	Scott Mouw	NC Department of Environment and Natural Resources	Recycling Section Chief
OR	Loretta Pickerell	Department of Environmental Quality	Solid Waste Policy & Program Development, Manager
WI	Cynthia Moore	Dep. of Natural Resources	NR Program Coordinator
MD*	Richard Keller	Maryland Environmental Services	Recycling Manager
	Dave Mrgich	Waste Diversion Division, Maryland Department of the Environment	Chief

Table 2: Local Government Interview Participants

City/County	Interviewee Name	Interviewee Department	Interviewee position
Worcester, MA	Robert Fiore	Public Works and Parks	Assistant to the commissioner of Public Works
San Diego, CA	Ken Prue	Environmental Services	Recycling Program Manager
Ramsey County, MN	Norm Schiferl	Saint Paul - Ramsey County Department of Public Health	Planner
Glassboro, Gloucester County, NJ	Monica D. Gismondi	GCIA/Office of Recycling	Gloucester County Recycling/HSW Coordinator
Durham, NC	Larrisha McGill	Solid Waste Management	Waste Reduction Coordinator
Portland, OR	Troy Doss	Central City Team at Bureau of Planning and Sustainability	Senior Planner
Madison, WI	George P. Dreckmann	City of Madison, Streets Division	Recycling Coordinator
Seattle, WA	Tim Croll	Seattle Public Utilities	Director - Solid Waste
Austin, TX	Bob Gedert	Austin Resource Recovery	Director

Finally, the project team learned that the North Carolina Department of Environment and Natural Resources was also conducting research about state disposal bans and recycling laws via administration of a written survey. State staff agreed to share their survey findings with RSE's project team, to help avoid duplication of efforts. The jurisdictions covered by NC's study that were reviewed for this assignment include: CT, ME, MA, NJ, VT, WI.

2 Findings: Recycling Policies

This section provides an overview of the project team’s findings pertaining to recycling policies. These findings come with the caveat about the limited availability of clear and accurate information on the status of state laws and their results.

2.1 Types of Recycling Policies

Over the course of this research, three types of recycling policies were identified:

1. **Recycling Service Provision:** Local governments and/or haulers are expected to provide recycling services or a specific level of service based on criteria such as population size (e.g. population greater than 4,000) or generator type (e.g. commercial properties).
2. **Recycling Participation/Source Separation:** Requires the source separation of recyclables from the waste stream. Typically, specific generators (e.g. single-family, multi-family and/or commercial generators) are required to participate in recycling programs.
3. **Recycling Target/Goal:** Entities such as local governments and state agencies are expected to achieve a mandated recycling target or goal (e.g. local government must achieve a 50% recycling rate by a given year). The goal can target different metrics for performance including waste generation, waste prevention, and recovery or recycling performance.

According to RSE’s research, eighteen states have some form of the recycling policies studied. Table 3 outlines the type of mandate in each state identified. A more detailed summary is provided in Appendix 1.

Table 3: State Recycling Policies

Jurisdiction	Service Provision/Level		Participation/Source Separation		Target/ Goal
	Material Specific	Not Material Specific	Material Specific	Not Material Specific	
California		✓			✓
Connecticut	✓		✓		
Delaware		✓		✓	✓
Florida					✓
Maine			✓		✓
Maryland	✓				✓
Minnesota		✓			✓
New Jersey	✓		✓		✓
New York				✓	
North			✓		

Carolina					
Oregon	✓				✓
Pennsylvania	✓		✓		✓
Rhode Island	✓		✓		✓
Vermont	✓		✓		✓
Virginia					✓
Washington		✓			✓
West Virginia		✓		✓	
Wisconsin	✓		✓		

To understand how state policy translates to local-level policymaking, research was conducted on a selection of local governments with recycling laws (noting that in some cases local jurisdictions with recycling laws are in states with disposal bans, e.g. Massachusetts). Research was also conducted on communities with recycling policies in Texas and Washington to understand how such policies would be implemented without state legislation. Research did not address whether communities also have their own recycling target/goal. For all jurisdictions, information was also gathered to help determine best practice approaches. Table 4 outlines the presence of recycling policies within the selected communities by type.

Table 4: Local Government Recycling Policies

Jurisdiction	Service Provision/Level		Participation/ Source Separation	
	Material Specific	Not Material Specific	Material Specific	Not Material Specific
St. Paul, MN		✓	✓	
Ramsey County, MN		✓		
Charlotte/Mecklenburg, NC		✓	✓	
Portland, OR		✓	✓	
Seaside, OR		✓		
Austin, TX	✓			
Spokane, WA	✓			
Seattle, WA			✓	
Boston, MA		✓	✓	
Cambridge, MA			✓	
Worcester, MA				✓
Fair Lawn, NJ			✓	
Glassboro, NJ			✓	

Jurisdiction	Service Provision/Level		Participation/ Source Separation	
Madison, WI				✓
Milwaukee, WI				✓
Neenah, WI		✓		✓
District of Columbia			✓	
Montgomery, MD			✓	
Harford, MD		✓		
San Francisco, CA		✓		✓
Los Angeles, CA				✓
San Diego, CA	✓		✓	
Middleton, RI	✓		✓	
Burlington, VT			✓	

2.2 Impact on Waste Diversion

Quantitative data linking the impact of recycling policies on recovery rates are not available and would be difficult to derive, given the many other recycling program variables as well as social, economic, demographic and political variables.^[1] For example, the mandatory recycling program for office paper and corrugated cardboard began in Maine over twenty years ago, before data was being collected on a statewide basis and therefore there is no reliable data for pre-mandate efforts. Furthermore, in some cases multiple types of recycling policies along with programmatic elements such as technical assistance and grants were implemented simultaneously making it difficult to assess the impact of any one individual policy mechanism. For instance, Pennsylvania has a service provision requirement, a source separation mandate and a target/goal in place to encourage recovery – all of which were included in Act 1988-101. In addition, the state provides recycling grants and funds recycling coordinator training. Lastly, states and local governments define and measure recovery rates in multiple ways, making comparison of recycling program performance across jurisdictions extremely difficult.

It can be said however, as has been stated in numerous prior studies, that use of multiple policy and program tools in combination tends to result in higher recovery rates. It is widely recognized that operators of high-performing recycling programs provide convenient opportunities for generators to recycle as well as invest in recycling education. Recycling policies can be implemented to support such programs, but cannot be independently credited for the recycling that results.

^[1] Examples of these variables include: prevailing waste disposal costs, citizen environmental, presence/absence of container deposits, and the quantity and efficacy of financial and technical assistance and public awareness programs implemented to support policies.

2.3 Compliance Point & Thresholds

When state governments require recycling service provision, the point of compliance is typically local government. They are the logical compliance point given that local governments manage solid waste and recycling collection services using city employees or contracted/franchised haulers.

When local governments require recycling service provision through ordinance, the point of compliance is typically the property owner, such as the owner of commercial or multi-family property, or recycling service providers (e.g. private hauler or local government). The service provision requirement may be based on waste generator type (e.g. residential, commercial, multi-family, etc.) or a threshold such as population size or the number of residential units within a building.

In almost all cases, recycling participation requirements target generators as the point of compliance. As a state representative from New Jersey stated:
“Ultimately, the generator is the one that must comply with the source separation and recycling requirements. While haulers of recyclable materials are required to do visual inspections of materials put out at the curb and solid waste disposal facilities are required to do inspections of incoming loads of waste for the presence of mandatory designated recyclable materials, it is not a perfect system and recyclables are not always recycled. The source separation and recycling requirement starts with the generator.”

With regard to mandated targets and goals, states hold local governments and state agencies accountable for developing plans and meeting state recycling or waste reduction goals.

2.4 Compliance Mechanisms

When the compliance point is local government, enforcement mechanisms by state government commonly include:

- Requiring local government to produce and submit a solid waste/recycling plan
- Requiring local government to report recycling data (biannually or annually) to demonstrate their conformance with the plan and/or with state-defined targets
- Making grants and/or funding eligibility contingent on compliance with state recycling policies
- Inspecting recycling and waste disposal facilities to determine conformance with separation requirements

At the local level, all jurisdictions researched provide some degree of education and technical assistance to facilitate recycling, which while not considered a compliance mechanism play an important role in promoting recycling. Many governments have found a stepped enforcement approach is most practical whereby enforcement action escalates as incidents of non-compliance reoccur. Specific to commercial properties, governments may first require them to submit recycling plans and ongoing periodic report. In terms of operational compliance mechanisms, stepped enforcement consists of some combination of the following elements:

- Inspections of garbage cans at point of generation or of incoming loads at disposal facilities

- Denied service and notices to the non-compliant party (e.g. haulers tag non-compliant set-outs and do not collect them if they contain designated recyclables)
- Imposing fines/penalties on non-compliant generators and haulers and revoking haulers' license

Local governments have also found that media exposure on incidents of non-compliance goes a long way to support enforcement efforts. Like state mechanisms, some local governments require non-residential generators, typically commercial and/or multi-family property owners, to submit recycling plans. Many local governments have the power to impose fines and penalties but based on the project team's research, rarely resort to using them.

Tables 5 and 6 summarize the compliance mechanisms available to those state and local governments within the project team's scope of research that have recycling policies (recycling service provision/level, participation or target/goal policies) in place. Not all states actively utilize the compliance mechanisms provided in their statute. For instance, in Maine there is no enforcement of the state requirements for office paper or corrugated cardboard recycling, though it is included in the state's contract for recycling and waste removal services at its buildings. In North Carolina the local government planning requirements are not strictly enforced, and the state solid waste plan has not been updated since 2003. A more detailed outline of these mechanisms is provided in Appendix 1.

Table 5: State Compliance Mechanisms for Recycling Policies

Jurisdiction	Plan Requirement	Reporting Requirement	Grant/Fund Eligibility	Inspections
California	✓	✓	✓	
Connecticut	✓	✓		✓
Delaware		✓		
Florida			✓	
Maine		✓		
Maryland	✓	✓		
Minnesota	✓	✓	✓	
New Jersey		✓	✓	✓
New York	✓	✓	✓	✓
North Carolina	✓	✓		
Oregon		✓		✓
Pennsylvania			✓	
Rhode Island	✓			
Vermont	✓	✓	✓	
Virginia		✓		
Washington	✓	✓		

West Virginia	✓			
Wisconsin	✓		✓	

Table 6: Local Government Compliance Mechanisms

Jurisdiction	Plan Req.	Report- ing Req.	Inspections	Notices/ Denied Service	Fines/ Penalties
Los Angeles, CA ^(a)					
San Diego, CA		✓	✓	✓	✓
San Francisco, CA			✓	✓	✓
Montgomery, MD			✓		
Cambridge, MA	✓				✓
Worcester, MA			✓	✓	✓
St. Paul, MN				✓	✓
Fair Lawn, NJ			✓		✓
Glassboro, NJ			✓		✓
Portland, OR		✓	✓	✓	✓
Austin, TX			✓	✓	✓
Madison, WI			✓	✓	✓
Milwaukee, WI			✓	✓	✓
Neenah, WI				✓	✓
Washington, DC			✓		✓

Notes:

(a) No compliance mechanisms identified

3 Findings: Disposal Bans

This section provides an overview of the project team’s findings pertaining to disposal bans.

3.1 Types of Bans

RSE’s research identified disposal bans for consumer packaging at both the state and local level. All the bans identified are material-specific, listing certain materials and types of packaging (see Table 7).

Disposal bans for consumer packaging have been adopted in four states in the United States: Massachusetts, North Carolina, Vermont⁴ and Wisconsin. With the exception of North Carolina, the bans apply to all MSW, both residential and IC&I⁵. In both Vermont and Wisconsin the disposal bans are paired with recycling policies.

In addition to general disposal bans for aluminum cans and rigid plastic bottles, North Carolina has a unique ban/mandate for beverage containers generated by certain restaurants and bars with alcohol permits (Alcoholic Beverage Commission [ABC] permit holders). The main types of containers affected by the ABC law are aluminum cans, glass bottles, and plastic bottles. The inclusion of glass in the ABC in the absence of a similar ban for residential glass makes it effectively a commercial sector specific ban on that one material.

In the preambles to waste ban legislation and regulation, the primary reasons stated for implementing bans are: protect public health and natural resources, conserve resources and energy, and extend the life of existing disposal facilities.

Table 7: State Packaging Disposal Bans

Jurisdiction	Glass	Steel	Aluminum	Plastic	Paper ^(a)
Massachusetts	Containers	Containers	Containers	1-6 Bottles	OCC, RP
North Carolina	Containers ^(b)		Containers	1-7 Bottles	
Vermont	Containers	Containers	Containers	1-2 Bottles	OCC, RP
Wisconsin	Containers	Containers	Containers	1-2 Bottles	OCC, ONP, OMG, OP

Notes:

(a) OCC=old corrugated containers, ONP=newspaper, OMG=magazines, OP=office paper, RP=all recyclable paper

(b) Applies only to certain restaurants and bars with alcohol permits

⁴ Vermont’s law was enacted in 2012 and the state Agency of Natural Resources is currently developing policies, programs and guidance for its implementation.

⁵ Institutional, Commercial and Industrial – generally used to refer to non-residential municipal solid waste.

To assess how state-level bans may translate to local-level policy, RSE selected major cities in the four states listed above and researched their policy mechanisms, noting that Vermont’s disposal ban is recent and the deadlines for local-level compliance with provisions are in 2014-2015 (see Table 8). Because the state-level bans in Massachusetts and North Carolina place the burden of compliance and enforcement on disposal facilities, the local policy mechanisms do not directly parallel state bans. Research was also conducted on communities in Texas and Washington to understand how a ban would be implemented without state legislation.

Table 8: Overview of How State-level Bans Translate to Local-level Policy

Massachusetts
<ul style="list-style-type: none"> • Boston: City ordinance does not incorporate the state bans. City ordinance includes mandatory residential recycling source-separation. The list of materials conforms to the state ban list. Ordinance also includes a commercial recycling service requirement that all waste haulers offer recycling service to their ICI customers. • Cambridge: City ordinance does not incorporate the state bans. City ordinance includes a source-separation requirement that applies to all building owners and occupants (residential as well as commercial). Authority is delegated to the city’s public works commissioner to define the targeted recyclables. • Worcester: City ordinance bans the placement of recyclables in solid waste placed out for collection. Authority is delegated to the city’s public works commissioner to define the targeted recyclables.
North Carolina
<ul style="list-style-type: none"> • Charlotte/Mecklenburg County: City and county ordinance does not incorporate the state bans. The county has a mandatory source-separation ordinance for cardboard and office paper from ICI generators of more than 16 cubic yards per week of MSW. • Durham: City ordinance bans disposal of recyclable materials without identifying specific materials, leaving the definition of target recyclables to the city’s solid waste director. The list currently includes aluminum and steel cans, glass containers, plastic bottles, newspaper and cardboard. • Raleigh/Wake County: City and county ordinance does not incorporate the state bans. However, the city and county have implemented a financial penalty on the disposal of OCC from ICI generators.
Vermont
<ul style="list-style-type: none"> • Burlington: City ordinance requires mandatory source-separation by residential and ICI generators. The ordinance pre-dates the state statute. The list of target materials is defined in regulations promulgated pursuant to the ordinance.
Wisconsin
<ul style="list-style-type: none"> • Madison, Milwaukee and Neenah: City ordinances include specific disposal ban and recycling requirements conforming to state statute and regulation. The state recycling law requires all local governments to maintain effective recycling programs including source-separation policies and disposal prohibitions.
Washington
<ul style="list-style-type: none"> • Seattle: While there is no state level ban, city has a ban: City ordinance both prohibits disposal and mandates source-separation of designated recyclables. The list of recyclable materials is identified in the city’s solid waste plan.

3.2 Impact on Waste Diversion

As is the case for recycling policies, quantitative data definitely linking consumer packaging disposal bans and recovery rates are not available and would be difficult to derive, given the many other programmatic and social, economic, demographic and political variables and differing recycling rate calculation methods used.⁶ For example, the waste bans in Massachusetts were phased in during the 1990s during which time the municipal solid waste recycling rate increased from 10% in 1990 to 38% in 1999, and subsequently decreased to 34% in 2009. It is widely acknowledged that waste bans helped establish the conditions that led to increased rates in the 1990s; however the broad array of financial, technical and educational programs implemented by state and local government was the actual means by which the recovery rates were achieved. In addition, changes in the economy affecting the amount of solid waste generated in turn affects recovery rates, regardless of other influencing factors.

3.3 Compliance Point & Thresholds

State-level disposal bans vary with regard to who in the solid waste system must comply with the ban. The Massachusetts and North Carolina bans focus on waste-receiving facilities (transfer stations, incinerators and landfills), essentially stating that these facilities cannot accept waste that contains designated recyclables. The Wisconsin and Vermont bans focus on both generators and waste facilities, stating that no person can place banned materials in solid waste and no person may dispose such materials at a waste facility (see Table 9).

Table 9: State-level Disposal Bans – Compliance Points and Thresholds

Jurisdiction	Compliance Point			Compliance Threshold	
	Resident	ICI	Facility	Defined	Not Defined
Massachusetts			✓	✓	
North Carolina			✓		✓
Vermont^(a)	✓	✓	✓		✓
Wisconsin	✓	✓	✓		✓

Notes:

(a)Thresholds may be defined as state policy is developed and implemented.

Massachusetts is the only state identified in RSE’s research that has specifically defined compliance thresholds, which in summary are as follows. Loads received at waste facilities cannot contain more than 20% by volume of recyclable paper. For recyclable containers, the standard is that a representative sample of waste bags cannot contain more 5 containers per bag. If these thresholds are exceeded, the facility must reject the load or sort to remove recyclables.

⁶ Examples of these variables include: prevailing waste disposal costs, citizen environmental, presence/absence of container deposits, and the quantity and efficacy of financial and technical assistance and public awareness programs implemented to support policies.

As noted previously, RSE’s local-level research focused on major cities in the states with disposal bans and recycling policies plus Texas and Washington (states with neither state-level policy). It was found that very few local jurisdictions in these states have disposal ban ordinances, in keeping with the general state trend to focus on voluntary recycling compliance with the threat of disposal ban enforcement in the background.

Where they do exist at the local-level, most disposal bans focus on generators and haulers at the point of collection since these are the locations most within local government’s ability to monitor and control (see Table 10).

- Worcester, MA: Single-family residential households (which include buildings with up to 6 units) must comply with the ban.
- Durham, NC: All residential and ICI generators must comply with ban.
- Madison, Milwaukee and Neenah, WI: To comply with the state requirements for an effective recycling program, the cities’ disposal ban ordinances need to target all residential and ICI generators, and owners of MF and ICI must inform tenants and provide service.
- Seattle, WA: All residential and commercial generators must comply, except for commercial buildings with public space waste containers and commercial or multifamily customers that do not have adequate space for recycling. Recyclable items cannot exceed 10% by volume of the waste receptacle.

If local government controls operation of the transfer station or disposal facility, then disposal bans can also focus compliance on waste haulers at that point. The ban in Durham, NC also applied to haulers delivering waste to the city transfer station. Durham officially has a zero tolerance for banned materials in waste. The ordinance in Raleigh/Wake County⁷ is not specifically a disposal ban, but a penalty surcharge on loads containing more than 10% OCC by weight or volume. In both jurisdictions, violators must pay a penalty surcharge in addition to the regular tipping fee.

Table 10: Local-level Disposal Bans – Compliance Points and Thresholds

Jurisdiction	Compliance Point			Compliance Threshold	
	Resident	ICI	Facility	Defined	Not Defined
Worcester, MA	✓				✓
Durham, NC	✓	✓	✓	✓	
Raleigh/Wake, NC			✓	✓	
Seattle, WA	✓	✓			✓
WI Cities	✓	✓	✓		✓

⁷ A number of other, smaller North Carolina jurisdictions have similar disposal diversion ordinances.

3.4 Compliance Mechanisms

Massachusetts is the only state identified in RSE's research that has specific guidance and procedures for waste ban implementation. The state DEP oversees ban compliance and has developed a waste ban guidance document for solid waste facilities. Facilities must submit a waste ban compliance plan as part of their permit application, and their ongoing operating permit is contingent on implementing that plan. The guidance document provides specific procedures regarding load inspection, compliance standards, action level thresholds, and record keeping. DEP facility inspectors also include waste ban compliance in their periodic inspections of permitted facilities. In 2013, DEP increased funding and staff to enhance waste ban enforcement.

Notwithstanding the above, Massachusetts DEP has historically placed more resources on promoting voluntary compliance with the disposal bans through a comprehensive program of technical assistance, grants and loans, education and public awareness, informational resources, demonstration programs, etc.

Wisconsin's DNR oversees the disposal ban and recycling policy implementation. DNR has the authority to enforce disposal ban compliance, but has not developed specific guidance and procedures for implementing and enforcing the waste bans. Instead, DNR focuses on voluntary compliance through a comprehensive program to ensure compliance with the recycling policy provisions, with the potential "stick" that it may enforce the disposal bans.

Similarly, North Carolina's DENR has chosen a voluntary approach rather than waste ban enforcement comprised of a comprehensive program similar in scope to Massachusetts and Wisconsin. Vermont has not yet defined compliance mechanisms, although state officials have indicated a preference for a broad program to promote voluntary compliance as well as targeted enforcement.

At the local level, compliance mechanisms focus primarily on inspection of generators and waste haulers. However, RSE's research found that local jurisdictions put only limited effort into inspection and enforcement. Worcester, MA city collection crews can reject and tag bags containing banned materials, however for public health reasons they will go back and collect rejected bags after 24 hours. Raleigh/Wake County, NC landfill staff observes incoming loads and may at their discretion impose a surcharge on non-compliant loads.

One city waste services director characterized their enforcement programs as the "least credible level of enforcement" – in other words, they have city code enforcement officers who randomly check a small number of waste containers for banned recyclables. The city can issue warnings, deny services and tag non-compliant waste bins, but education is the primary compliance mechanism rather than the use of fines or penalties.

Summaries of state and local disposal ban compliance mechanisms are provided in Tables 11 and 12.

Table 11: State Disposal Bans – Compliance Mechanisms

Jurisdiction	Voluntary Compliance ^(a)	Inspections	Notices/ Fines	Permit Revocation
Massachusetts	✓	✓	✓	✓
North Carolina	✓			
Vermont ^(b)	✓			
Wisconsin	✓			

Notes:

(a) Examples of state efforts to promote voluntary compliance include technical assistance, grants and loans, education and training, informational resources, demonstration programs, etc.

(b) Compliance mechanisms may be further defined as state policy is developed and implemented.

Table 12: Local-level Disposal Bans – Compliance Mechanisms

Jurisdiction	Voluntary Compliance ^(a)	Inspections	Notices/ Denied Service	Fines/ Penalties
Worcester, MA	✓	✓	✓	✓
Durham, NC	✓	✓		✓
Raleigh/Wake, NC	✓	✓		✓
WI Cities	✓	✓	✓	
Seattle, WA	✓	✓	✓	✓

Notes:

(a) Local efforts to promote voluntary compliance focus on outreach and education.

Provided in Figure 1 is a map showing state bans and recycling policies that have been passed in the United States.

Figure 1: Disposal Bans and Recycling Policies by State



4 Findings: Pay-As-You-Throw

Pay-As-You-Throw (PAYT), also known as variable-rate or unit pricing, is a policy tool used to encourage waste generators (household and/or IC&I) to reduce waste and increase recycling. Generators are charged for solid waste disposal based on the amount of material set out for collection or dropped off at transfer stations and convenience centers.

4.1 Types of PAYT Programs & Policies

PAYT programs and policies come in a range of forms depending on the design objectives and preferences of local jurisdictions. Program types include⁸:

1. **Can/Cart Programs:** Generators pay a fixed price based on the size or number of containers they select for their waste service, e.g. 30, 60 or 90 gallons of service. The larger or greater number of waste collection containers used, the more a generator will pay.
2. **Bag, Tag & Sticker Programs:** Generators purchase special color-coded or imprinted plastic bags or stickers for their waste. The predetermined price of each bag or sticker includes the cost of waste services. The more bags they set out or tags/stickers used, the more generators pay. Bags and stickers are often sold through various channels such as city hall and grocery and convenience stores.
3. **Hybrid Programs:** Generators pay a fixed amount for a specified maximum volume of waste to be set out per collection period. Waste set out for collection that exceeds this amount accrues an additional charge.
4. **Weight-based Programs:** Weight is either determined when generators drop off solid waste or collection vehicles are equipped with technology that can assess the weight of the contents of a container at curbside and charge accordingly.
5. **Other:** Generators are offered a PAYT fee structure as a voluntary option.

Under PAYT programs, recycling fees are either non-existent (i.e. the cost of recycling is embedded within the solid waste disposal fee) or they are charged at a lower fee than waste collection.

According to RSE's research, Minnesota and Washington have PAYT requirements while Oregon, Iowa and Wisconsin have strong state level policies that encourage PAYT adoption at the local level. Table 13 summarizes this information.

Table 13: States with PAYT Mandate or Policy

State	PAYT Mandate or Policy
Minnesota	Local governments that charge waste generators for solid waste collection must implement a fee structure that increases as the volume or weight of waste collected from each generator's residence or place of business increases.
Washington	Applies mostly to private collectors that operate in unincorporated areas. Does not apply to local governments; however, the law's existence has led to PAYT throughout the state.

⁸ Skumatz, L. 2002. *Variable-Rate or "Pay-As-You-Throw" Waste Management: Answers to Frequently Asked Questions*. Available here: <http://reason.org/files/a4e176b96ff713f3dec9a3336cafd71c.pdf>

Oregon	Oregon does not have a legislative mandate for PAYT but encourages its implementation by including it in the list of nine recycling elements that municipalities choose from when designing their recycling programs to comply with state regulations.
Iowa	As a form of encouragement, PAYT at the local level can be required if recycling goals are not met.
Wisconsin	As a form of encouragement, PAYT at the local level can be required if recycling goals are not met.

Although only five states have mandates or policies regarding PAYT, the adoption of this waste diversion policy has proliferated across the US. According to Skumatz Economic Research Associates (SERA) – approximately 25% of the US population lived in communities with PAYT programs as of 2006.⁹

4.2 Impact on Waste Diversion

According to a study conducted in New England by Green Waste Solutions, PAYT communities generate approximately 49% less waste than communities that include the cost of waste collection in property taxes or charge it as a fixed fee. An increase in recycling accounts for 25-30% of total waste reduction while the remaining 70-75% diversion is due to source reduction and food and yard waste collection. The study surveyed 228 communities and isolated results for the residential sector.¹⁰

4.3 Compliance Mechanisms

Local governments are the point of compliance for PAYT requirements instituted at the state level. The issue of compliance has been cited as a barrier to PAYT adoption at the state level as it can be difficult to force the implementation of PAYT on local governments given the barriers they may face as outlined in Section 6.

In order to monitor compliance with the mandate in Minnesota, a Commissioner is assigned the responsibility of liaising with each county. If PAYT has not been implemented, the Commissioner will initiate discussions to determine which strategies should be used to achieve compliance, of which PAYT is one. In Washington, compliance with the PAYT mandate is enforced through the rate-review process.

⁹ Skumatz, L., and Freeman, D.J. 2006. *Pay As You Throw (PAYT) In the US: 2006 Update and Analyses*. Available here: <http://www.epa.gov/osw/consERVE/tools/payt/pdf/sera06.pdf>

¹⁰ Reference: <http://www.epa.gov/epawaste/consERVE/tools/payt/tools/bulletin/summer10.pdf>

5 Additional Considerations: Recycling Policies and Disposal Bans

5.1 Barriers to Policy Implementation

Key barriers to policy implementation are similar at the state and local levels. These include lack of a perceived need, resource constraints, existing legal limitations and stakeholder opposition. States (and local governments) without solid waste diversion goals may not see the need to implement policies because there is no target against which they must perform that these policies would contribute to. Goals, preferably stated in statute, help drive the adoption of other recycling policies at both the state and local level. Economic considerations can also create barriers. For example in areas with low landfill tipping fees, there is less incentive to push for increased recycling. And when local governments own and operate their own disposal facilities, there may be concern over declining tipping fee revenues resulting from increasing recycling. This revenue may also happen to be a key source of funding for local recycling programs.

Effective policy often requires the enacting jurisdiction to provide services such as facilitation, technical assistance, education, grants/loans and enforcement that states may not have the resources to adequately fund or staff. This may prevent states from implementing bans and mandates. The same would be true for counties regarding assistance that municipalities might expect if bans and/or recycling mandates were implemented at the county level.

With respect to legal limitations, some states have policies prohibiting unfunded mandates. For example, Michigan is limited by the Headlee Amendment which prohibits the state from mandating that local governments provide new services unless the state reimburses them for any necessary increased costs they may incur.

Lastly, stakeholder opposition will always be encountered when implementing any type of mandate or ban. Practices for improving receptivity to policy enactment are discussed in Section 5.4 below.

5.2 Disposal Bans versus Recycling Policies

State and local governments impose disposal bans much more commonly on specific materials that pose an environmental or public health threat (e.g. e-waste, used oil, fluorescent bulbs, batteries, tires, etc.) as well as specific types of packaging that are perceived as major sources of litter (e.g. plastic bags and expanded polystyrene packaging). While a comprehensive analysis has not been conducted into the question of why recycling policies are more prevalent than disposal bans for packaging and printed paper, RSE's research and discussions with state and local officials indicate that recycling policies are generally perceived as better calibrated to commonly recyclable packaging and printed paper than disposal bans.

In addition, recycling policies can be applied to specific types of material streams, such as residential waste, over which governments have more control regarding infrastructure development. Recycling goal requirements can allow for flexibility on the part of local governments to tailor programs based on local needs and circumstances. And minimum recycling service level requirements can address infrastructure needs in a targeted fashion.

Such policy approaches may be more realistically achievable than expecting statewide availability of recovery infrastructure and participation to meet the requirements of a statewide disposal ban.

5.3 Stakeholder Assessment

A comprehensive stakeholder assessment was not part of this project’s scope; however RSE did ask state and local officials to comment on stakeholders who were particularly active during their policy debate, development and implementation.¹¹ The reaction of stakeholders depends on a range of factors including the type of recycling policy or ban under consideration, the way in which recycling service is provided at the local level, the point of compliance, the materials designated, and other complimentary programs and policies to help affected parties to comply with the policies (see Section 5.4). Table 14 provides insight into the positions of various stakeholders as gleaned through selective interviews with jurisdictions that have successfully implemented recycling mandates and disposal bans.

Table 14: Positions of Stakeholders Most Active in Response to Proposed Recycling Policies and Disposal Bans as Reported by Interviewees

Jurisdiction	Stakeholder	Stakeholder Position
Massachusetts	Waste haulers	Most resistance to bans has come from waste haulers because they perceive that they are being held accountable for something they don’t have control over, namely customer behavior, and having to enforce something without any clear compensation
Minnesota	Waste haulers	Did not strongly oppose mandatory recycling service provision because it represented potential new business and the sales tax was applied across the board and could be passed along to customers. Did strongly oppose state-wide PAYT
	Local government	Did not strongly oppose mandatory recycling service provision because grants were to be funded through collection sales tax
North Carolina	Waste haulers, business community & local government	Each group expressed general concerns individually regarding the state’s disposal ban laws, but multi-stakeholder opposition did not coalesce
	Glass industry	Promoted the ABC law to increase restaurant and bar glass recycling
Austin, TX	Waste haulers	Threatened by recycling mandate. Expressed concerned that landfills would shut down if recycling increased too much
	Restaurant Owners	Receptive to packaging and printed paper recycling but opposed to food waste composting mandate
	Residents	Supportive. Environmentally conscious
Portland, OR	Recycling haulers	Supportive of recycling policies rather than disposal ban. They prefer encouraging customers to recycle rather than needing to enforce bans

¹¹ The ability of interviewees to comment on stakeholders’ positions was dependent on whether interviewees were working in positions at that time that gave them knowledge of stakeholder positions, as well as the fact that many mandates and bans were enacted and documentation of stakeholder positions does not exist.

	Business Sector	Not supportive of commercial recycling mandate
Seattle, WA	Recycling Service Providers	Do not have a choice, because the city contracts with them to handle recyclables. They are motivated to respond to an RFP
	Multi-family Property Owners	Required certain exemptions due to unique constraints such as limited space
	Residents	Supportive
	Business Sector	Not initially supportive due to concerns regarding government interference

Based on this limited research and response, waste haulers were consistently mentioned as being the primary group opposed to recycling requirements and disposal bans due to their concerns about impact on their business (i.e. needing to enforce compliance on their customers or being responsible for what they deliver to facilities). This is distinction from the position that may be taken by dedicated recycling service providers who tend to perceive such policies as a positive, however they may be resistant to reporting and data sharing requirements. Local government (e.g. municipal government associations) was mentioned as expressing concern if state policy does not come with appropriate funding. The business sector (e.g. Chamber of Commerce) was also identified by several interviewees as a vocal stakeholder that expressed concerns about impact on their facilities, operations and finances and the need allowances and exemptions for unique conditions.

In reviewing interviewee responses, RSE notes that major trade associations were not mentioned as a significantly vocal stakeholder group to date regarding recycling and disposal ban policies nor were MRF or landfill operators mentioned. We are aware that some MRF operators may oppose bans and mandates if they believe such policies would disrupt market pricing for recyclables; and we are aware that disposal facility operators may oppose bans out of concern for lost revenue. It is worth noting, however, that Waste Management has stated publicly that it supports such policies.

5.4 Improving Receptivity at the State level

Information and engagement is crucial to build multi-stakeholder support when developing and adopting state-level recycling policies and disposal bans. To support the successful passage of state legislation, the following recommendations that address stakeholder concerns were provided by interviewees:

- **Education and outreach**: Educate and engage stakeholders (local governments, ICI generators, private recycling and waste industry, etc.) at the outset of policy development regarding the rationale for the proposed policy and how intended policy outcomes align with local needs and interests.
- **Research**: Conduct market development studies to inform state and local strategies and develop tools, such as tax credits, technical assistance and grants, that ensure recycling markets are available to handle the increased materials recovery. In New Jersey, a study was conducted after their recycling law was passed to confirm that the law's passage did not result in negative consequences, lending credibility to the mandate over time.

- **Fairness:** Policy needs to address equitability among stakeholders in terms of creating a level playing field for sharing the costs and opportunities created. For example, policies and implementation mechanisms (funding, outreach and education, technical assistance, etc.) need to address the range of small versus large cities, rural versus urban areas, small versus large corporate haulers and recycling facilities.

The funding support and phased-in implementation best practices discussed in Section 4 were also provided as recommendations to address stakeholder concerns.

5.5 Developing State-Level Policy Language

Based on interviews with state and local government representatives, the most important considerations when developing recycling policy and disposal ban language are **flexibility** and **creating a stable financing mechanism**.

Flexibility can be supported in legislation by:

- Mandating enforcement but leaving the enforcement method to the local level
- Recognizing that each community is unique with regard to the provision of recycling services and population density (urban vs. rural)
- For material-specific mandates:
 - Exempting those materials for which no local markets exist
 - Designating a list of materials and schedule in statute but authorizing an agency, such as a department of environment, to designate additional materials over time as markets develop without going to the legislature
- Allowing for phased implementation and a lag between enactment and enforcement to allow for market development and local planning.

With regard to financing, every local government representative interviewed highlighted the need for a stable financing mechanism. States have access to revenue sources that municipalities do not have access to, and should therefore ensure a funding mechanism is set up to assist with recycling program costs. For instance, state-level legislation could include language that mandates or allows for the creation of a disposal tax or business surcharge.¹²

¹² A disposal surcharge is likely to be opposed in communities where disposal sites are for the most part publicly owned. This is the case of Maryland, where there is only one privately-owned disposal site (the rest are owned by the counties).

6 Additional Considerations: PAYT

6.1 Barriers to PAYT Implementation at the Local Level

With regard to local-level barriers for PAYT, SERA and the CD Howe Institute assert that barriers are not technical but political. Lack of political support for PAYT adoption can be caused by:

- Constituent opposition to paying more money for a service they think should be free or their perception that PAYT is double taxation (if property taxes stay the same after PAYT implementation)
- Perception that PAYT is a burden to low-income households and large families
- Perception that it may lead to illegal dumping
- Revenue uncertainties because revenue is in part dictated by customer behavior
- Potential conflict with haulers and recyclers
 - Hauler concerns regarding stranded assets and capital investments as well as impact of PAYT for commercial sector on revenue potential
 - Some recyclers are concerned that PAYT will increase contamination of the recycling stream
 - When municipal staff does not provide collection services, local government will need to enact an ordinance or design a contracting or franchising process to implement PAYT, which is more politically burdensome.¹³

Local governments may also be wary of adopting a PAYT ordinance due to concerns regarding personnel requirements. According to the City of Seattle, administering a PAYT structure requires additional staff resources for several sections of the city's Public Utilities Department to accommodate additional promotion and public information needed to make the program work.¹⁴

In some cases, local political barriers can be overcome by state-level action as state requirements remove the decision-making responsibility from local politicians.

State-level interviews revealed the following insights into why more state governments have not mandated PAYT:

- Similar to the local level, opposition from constituents and industry stakeholders and perception that PAYT is another government-imposed tax hinder consideration of the policy at the state level. For instance, although the law was successful in the end, Minnesota faced substantial opposition from haulers when the PAYT mandate was under consideration.

¹³ List of barriers summarized from: Skumatz, L. 2002. *Variable-Rate or "Pay-As-You-Throw" Waste Management: Answers to Frequently Asked Questions*. Available here:

<http://reason.org/files/a4e176b96ff713f3dec9a3336cafd71c.pdf> ; and

Kelleher, M., Robins, J., and Dixie, J. CD Howe Institute. 2005. *Taking Out the Trash: How To Allocate the Costs Fairly*. Available here: www.cdhowe.org

¹⁴Seattle Public Utilities. *History of Variable Can Rate*. Available here:

<http://www.seattle.gov/util/MyServices/Garbage/AboutGarbage/SolidWastePlans/AboutSolidWaste/HistoryofVariableCanRate/index.htm>

- If unfunded, local governments may oppose state PAYT requirements.
- Given decentralization between state and local governments, it is difficult to ensure compliance with PAYT at the local level.
- Much of the detail for PAYT is decided at the local level, making it difficult to impose in statute.
- Lack of political will and state-level staff to support passage of the policy.

The Solid Waste Management Association of North America (SWANA) does not have a policy on PAYT but has stated concerns regarding embedding the cost of recycling in waste disposal charges. SWANA is concerned that it sends a false impression that curbside recyclables collection is free which they consider to be an unsustainable funding approach.¹⁵

6.2 Improving Receptivity for PAYT at the Local Level

SERA has conducted extensive research on strategies that lead to successful passage of local PAYT ordinances. The summary from SERA's research below highlights recommended strategies to be adopted with key stakeholders at the local level.¹⁶

- Political Support:
 - Find an ambassador who can lobby for the policy diplomatically with other influencers.
 - Brief government representatives and ensure a common story is told.
 - Seek endorsement from a task force representing a broad range of interests to further convince government.
- Hauler Input:
 - Engage haulers to inform system design based on their knowledge and familiarity with the community and its routes.
- Customer Education:
 - Provide information on program rationale, how it works, opportunities for waste reduction and cost savings, fines for illegal dumping, etc.

The following additional strategies were also provided by state and local government staff in interviews conducted by RSE and through online research.

- General Education & Outreach:
 - Extensive consultation is needed to educate stakeholders and the press about the rationale for PAYT, local budgetary issues and the financial repercussions of not imposing PAYT (e.g. tax increases, rising landfill tip fees, etc.). Consultation can also help to create policy ambassadors who can garner support within the community.¹⁷

¹⁵ Reference: Gerlat, A. 2012. *Hauling with a Calculator*. Available here: <http://waste360.com/pay-you-throw-payt/pay-you-throw-playbook?page=3>

¹⁶ Skumatz, L. 2002. *Variable-Rate or "Pay-As-You-Throw" Waste Management: Answers to Frequently Asked Questions*. Available here: <http://reason.org/files/a4e176b96ff713f3dec9a3336cafd71c.pdf>

¹⁷ US Environmental Protection Agency. 2010. *Get SMART with Pay-As-You-Throw*. Available here: <http://www.swalco.org/Recycling/Documents/US%20EPA%20PAYT%20Summer%202010%20Bulletin.pdf>

- Cost/Benefit Research:
 - The City of Austin, Texas found that a cost analysis should be conducted early in the process to determine if program benefits outweigh the costs. Linked to the point above, communicating the results can help foster support. A lack of information creates dissent.
- Earmarking PAYT Fees for Program Costs:
 - In many states, local governments are to set up a dedicated “enterprise fund” that houses the revenue generated from PAYT. Having such a dedicated fund can be used to assure rate payers that revenue generated from PAYT is used to fund solid waste and recycling programs, as opposed to going to general revenue.¹⁸

6.3 State-Level Assistance for PAYT

According to research conducted by SERA, several states have provided assistance to promote the adoption of PAYT at the local level.¹⁹ Assistance ranges from distribution of info sheets and links, to web-based resources, to training guides and workshops, to mini-grants for consulting support, to grants for program implementation.

An example of a strong state program that has demonstrated results in bringing about PAYT is Massachusetts, described below.

Massachusetts Sustainable Materials Recovery Program (SMRP)

Mass DEP offers grants to cities, towns, regional entities and certain non-profit organizations to fund selected activities that will increase diversion of municipal solid waste and household hazardous waste from disposal. Grants are available for recycling and composting equipment; Pay-As-You-Throw programs; waste reduction enforcement; school recycling; and local/regional waste reduction projects. Along with dedicated staff and technical assistance for PAYT, the SMRP and its predecessor Municipal Recycling Incentive Program (MIRP) are considered by the state to have been primary reasons that 40% of local governments have PAYT. It sets best or minimum infrastructure and services standards regarding PAYT and specific pounds per household levels. If municipalities achieve those standards, they are eligible for a specific amount of \$/ton diverted incentive payment.

¹⁸ Ibid.

¹⁹ Skumatz, L. 2002. *Variable-Rate or “Pay-As-You-Throw” Waste Management: Answers to Frequently Asked Questions*. Available here: <http://reason.org/files/a4e176b96ff713f3dec9a3336cafd71c.pdf>

7 Best Practices for Recycling Policies and Disposal Bans

Best practices for recycling policies and disposal bans are similar because both focus on changing programs and infrastructure, and thus share similar challenges. The following best practices are derived from the many insights and diverse knowledge of the individuals interviewed and programmatic information reviewed for this project.

Employ a comprehensive package of programmatic tools to support policies. One universal theme emerging from the research is that mandate and ban policies must be part of a comprehensive package to maximize recovery impact. Several state officials described their policy and program strategy as a “carrot and stick” approach that utilizes a comprehensive package of policy and programs that encourage compliance, namely technical assistance, market development, research and recycling grants/loans, tax credits, public education and awareness, informational resources, etc. Broadly speaking, it is the combination of policy, funding, technical assistance, and public awareness that leads to higher recovery rates; policy is the driver (stick), while money, technical assistance, and public awareness are the facilitation (carrot).

Pair multiple policies to create a synergistic effect. Combining recycling mandates with disposal bans, and PAYT can create powerful incentives to recycle. For instance, mandates and bans can be combined with PAYT policies to create a range of behavioural incentives at multiple compliance points. For example, the Public Works Director in Worcester, MA stated that while the state and local disposal bans help provide a context that supports materials recovery, he believes the city’s PAYT system has been the most important factor driving the city’s 45% recycling rate.

In a study of high-performing states conducted by Public Sector Consultants (PSC), all of the eight high-performing states they evaluated had a specific target or goal for waste diversion and/or recycling at a statewide level. In every state but Michigan and Massachusetts the target or goal is included in statute as well as policy.²⁰ Essentially, a multi-faceted commitment to recovery provides the solid foundation that attracts further investment and commitment by stakeholders.

Utilize policies that require programmatic best practices. The overall environment for recovery is enhanced when convenient, universal opportunities to recycle exist (e.g. city-wide service, frequent collection, comprehensive list of designated recyclables, sufficient recycling container size, not charging separate recycling fees, etc.). Consequently, recycling policies and bans that require specific components (calibrated to geographic and demographic diversity) provide the framework to drive these best practices.

²⁰ Public Sector Consultants. 2013. *Improving Recycling Performance in Michigan: Best Practices, Options and Potential Costs*. Available here: <http://www.publicsectorconsultants.com/LinkClick.aspx?fileticket=ZI4nyjQU2WU%3d&tabid=65>

Recycling policies:

- Minimum levels of recycling service by community type (urban and suburban curbside/rural drop-off) and generator type (SF/MF/ICI/PSR)
- Mandatory participation and source-separation by generator type (SF/MF/ICI/PSR)
- Comprehensive list of designated materials (materials for which infrastructure and markets currently existing or can be developed given a grace period)
- An ambitious recycling goal that encourages reaching beyond the status quo

Disposal bans:

- Applicability to all generator types (SF/MF/ICI/PSR)
- Comprehensive list of designated materials (materials for which infrastructure and markets currently existing or can be developed given a grace period)

Case Study: San Francisco

San Francisco has achieved a record 80% diversion rate and has stated that it owes this achievement to a comprehensive recycling toolkit including:

- Recycling service provision requirement resulting in universal uniform access (licensed haulers must provide three stream system for all customers)
- Recycling and composting requirements for households and IC&I generators
- Extensive outreach and education (including at-home visits with non-compliant residents)
- Stepped enforcement consisting of education, tagging, denial of collection service, inspections, notices and fines (as of March 2013, warnings had been issued but no fines)
- PAYT policy based on container size (smaller cart size has lower fee)
- Financial incentives
- Ambitious recycling target (75% by 2020)

Provide funding support, particularly funding for achieving initial compliance.

At the outset of policy implementation, state funding is needed to support recovery institutions and infrastructure development. Funding is also needed to provide state-level support such as technical and promotional assistance and administering grant programs as well as for policy enforcement. For instance, Connecticut awarded grants worth approximately \$42 million in the late 1980's and early 1990's to municipalities and recycling regions to fund the development of recycling infrastructure and for recycling education. In recent years, North Carolina has focused recycling grants on helping local governments cover costs associated with transitioning to single-stream recycling and cart systems using a state instituted landfill tipping fee surcharge as the source of funding. And in Delaware, a 4-cent non-refundable beverage container fee was instituted as an alternative to a beverage container deposit and used to fund recycling program implementation.

A number of states offer examples of how to ensure stable funding mechanisms for recycling programs. California's AB939 enables local government to charge operators of solid waste disposal facilities a fee and use the proceeds to implement an integrated waste management system.²¹ The State's AB341 further enables local government to charge IC&I generators a fee to

²¹ California's Integrated Waste Management Fee (Solid Waste & Wood Waste) allows local government to charge operators of solid waste disposal facilities who are required to have a disposal facility permit from

implement a commercial recycling system. In Wisconsin, a significant recycling technical assistance and grants program is funded by a business recycling surcharge.²² On average, it distributes approximately \$20 million yearly, covering about 17% of municipal governments' solid waste management costs. And in New Jersey, municipal recycling grants have been funded by a solid waste transfer and disposal tax.²³

Phase in compliance to provide time for recovery infrastructure development, public understanding and awareness building, and transition to the new system.

A phased implementation allows recovery system infrastructure and institutions to adjust to a “new reality.” Clearly it is not possible for practices to change immediately and policies that explicitly acknowledge a time frame for ramping up to compliance are likely to garner more legitimacy and support from key stakeholders. For example, many of Massachusetts' disposal bans were enacted in 1990, but the regulations allowed 2 to 4 years before the effective date for prohibiting disposal of common recyclables from disposal facilities (the number of years allowed was based on estimates of the time needed for necessary infrastructure and markets to develop). In Seattle, the disposal ban and recycling ordinance were implemented with a significant grace period to allow for education efforts to change behavior and to find alternative means of managing the materials.

Utilize a “supportive” enforcement approach involving monitoring, feedback and technical assistance, with penalties used as a last resort.

Enforcement of recycling policies and disposal bans should not be draconian, but rather based on a soft or incremental process that initially seeks to inform, educate and encourage compliance, such as tagging non-compliant set-outs prior to refusing service or imposing fines. Likewise, those jurisdictions with specific enforcement procedures conduct only random or targeted inspections. This balances the need to providing a credible level of enforcement while limiting enforcement cost. Compliance thresholds should also allow for reasonable amounts of non-compliance (e.g. some percentage of recyclables allowed as waste). Furthermore, compliance should be linked to specific incentives/disincentives. For example, Massachusetts retains the ability to revoke a facility's operating permit for waste ban violations. And in Wisconsin, local government eligibility for state grants is contingent on them having an approved recycling plan.

As noted by one state official, disposal bans are analogous to highway speed limits. Everyone knows the law and most people drive slightly faster than the limit, but the law sets a common standard of behavior. If police were to strictly enforce speed limits (a zero tolerance for non-compliance), they would be overwhelmed and citizen support for the limits would diminish.

CalRecycle a fee based on all solid waste disposed of at solid waste landfills in the state. The fee is collected by the Board of Equalization and used to fund solid waste reduction and recycling in California.

²² Wisconsin business recycling surcharge: 3% of gross tax liability for corporations or 0.2% of net business income for partnerships and S-corporations. The maximum surcharge payment is \$9,800.

²³ New Jersey solid waste tax: \$3.00 per ton tax on all solid waste accepted for disposal or transfer at solid waste facilities. 60% of the fund is used for grants to local government.

Clearly define compliance points and compliance mechanisms. RSE’s research indicates that state and local governments with clearly defined compliance points and compliance thresholds exhibit a higher degree of dedication to achieving effective recovery programs. While this project did not undertake a rigorous quantitative comparison, interviews with state and local officials suggest that having clear metrics and procedures provides the context and clarity needed to enforce compliance with recycling policies and disposal bans, and thus drive recovery.

Require data gathering and reporting to benchmark and track performance. Likewise, data gathering and reporting to track recovery program performance and progress provides state and local governments with valuable information. According to PSC, high-performing states including California, Maine, Maryland, Massachusetts, Minnesota, Oregon, and Pennsylvania collect extensive and detailed annual information from each of their municipalities, including progress in meeting recycling targets and tons recycled by material types. And at the local level, local recycling coordinators can craft a strong message for community leaders and citizens touting success and focusing on how to improve program performance. Without proper data tracking and reporting, state and local governments may not actually know where they stand with respect to recovery. What gets measured gets managed.

Identify champions to promote policies and shepherd their adoption. Champions or key change agents can be the critical link to successful policy creation. In essence, this is the best practice for getting proactive materials management policies adopted in the first place: to identify well-respected, influential policy makers and/or state agency officials able to build the necessary coalitions; engage key stakeholders; craft the language; and shepherd proposals through the legislative process. In North Carolina, one state representative was instrumental in establishing the state’s foundational solid waste recycling law. In Massachusetts, a coalition of influential executive office, DEP staff and partners in the legislature have led the most recent round of efforts to reinvigorate the waste ban program, enact the food waste ban, and implement programs to achieve the state waste diversion goal.

Establish a confluence of opinion and consensus for action. Public officials who were active in the heyday of the passage of recycling laws and bans in the late 1980s and early 1990s stressed the importance of a broad public consensus and confluence of opinion to improve material recovery systems. The 1987 Garbage Barge incident is widely recognized as a major driver for the passage of recycling legislation at the state level.²⁴ Dramatic increases in disposal costs and diminishing landfill capacity drove the pursuit of disposal bans and recycling policies in many states. Recently in Vermont, reduced landfill capacity and stagnant recycling rates contributed to an environment that yielded Act 148. Similarly in Massachusetts and Connecticut, growing awareness of the greenhouse gas impacts of organics in landfills and renewed efforts to achieve state waste diversion goals helped create the conditions for passage of food waste disposal bans. While seminal events can be the trigger, just as importantly a broad coalition of stakeholder can lead to a “confluence of opinion and consensus for action” that drives landmark policy implementation.

²⁴ Recycling received national attention and a dialogue was spurred when a barge of New York’s solid waste was refused permission to unload at multiple ports and eventually ended up back in New York City.

7.1 Best Practices Summary

Table 13 summarizes the best practices for recycling policies and disposal bans based on RSE’s research of state and local policies and programs.

Table 13: Best Practices for Recycling Policies and Disposal Bans

1. Employ a comprehensive package of programmatic tools to support policies.
2. Pair multiple policies to create a synergistic effect.
3. Utilize policies that require programmatic best practices.
4. Provide funding support, particularly funding for achieving initial compliance.
5. Phase in compliance to provide time for recovery infrastructure development, public understanding and awareness building, and transition to the new system.
6. Utilize a “supportive” enforcement approach involving monitoring, feedback and technical assistance, with penalties used as a last resort.
7. Clearly define compliance points and compliance mechanisms.
8. Require data gathering and reporting to benchmark and track performance.
9. Identify champion to promote policies and shepherd their adoption.
10. Cultivate stakeholder support to build consensus for action.

8 Best Practices for PAYT

8.1 State Level

State-PAYT requirements will provide the best means of driving widespread adoption of PAYT at the local level and therefore offer the greatest impact on overall recycling as well as a source of funding for recycling services. However, states are reluctant to dictate the means by which local programs fund their solid waste management services, as evidenced by how few states have PAYT requirements. Consequently, states with a PAYT focus tend to promote PAYT as best practice and establish strong PAYT technical assistance and incentive programs.

SERA's research reports are widely recognized as a robust compendium of best practices. Their guide on implementing PAYT documented the following best practices and elements of successful state-level PAYT legislation:²⁵

Table 14: Best Practices for Implementing PAYT at the State Level

- | |
|--|
| Table 14: Best Practices for Implementing PAYT at the State Level |
| <ol style="list-style-type: none"> 1. Define PAYT requirements clearly in legislation and embed curbside recycling in solid waste collection costs. <ul style="list-style-type: none"> • Exempting communities from PAYT unless goals are met may be politically attractive but can create confusion as diversion methodologies may differ from one community to the next creating difficulties in proper enforcement. • To ensure fairness, model legislation like a utility whereby charges are by usage. |
| <ol style="list-style-type: none"> 2. Allow for flexibility at the local level: Depending on state characteristics, it may be useful to set a threshold for the PAYT expectations based on population (e.g. communities larger than 4000 people are expected to implement PAYT). <ul style="list-style-type: none"> • Flexibility in state legislation is needed to enable local governments to design and implement a program that accommodates their unique needs/challenges (e.g. administrative costs and capacities, contract management, etc.) |
| <ol style="list-style-type: none"> 3. Include the following key elements: <ul style="list-style-type: none"> • Background and safety regulations to address truck and operator safety and other concerns. • Universal curbside recycling with costs embedded in solid waste collection rates. Service requirements should be material-specific and outline container size and collection frequency. • Guidance on container size, PAYT rate structure and other fee-related elements. Clear accountability for education and engagement. • Performance tracking requirements including regular reporting of tons collected and authority to audit haulers. |

²⁵ Skumatz, L., and Freeman, J. *Increasing Recycling Now! Implementing Recycling And Pay As You Throw (Payt) Ordinances, Legislation, Or Contracting: Practical Guide and Model Language*. Available here:

http://www.paytnow.org/PAYT_OrdinancesANDLegislationReportSERA_v4Part1withattachments.pdf

8.2 Local Level

For decades, PAYT has been recognized as an effective tool in reducing waste and boosting the recovery of packaging and printed paper in a manner that is fair, flexible, and efficient. It provides a stable funding mechanism for solid waste and recycling service provision and an economic signal that can have a dramatic impact on customer behavior, when implemented using a best practices approach. The fact that hundreds of municipalities across the U.S. use this policy tool speaks to PAYT's success and acceptability.

There is a wealth of information upon which policymakers and municipal staff can rely to support successful program rollout. The following table lists best practices that have been distilled from interviews with representatives from city governments that have implemented their own PAYT programs and from the extensive body of research conducted by SERA on the topic.²⁶

Table 15: Best Practices for Implementing Pay-as-You-Throw at the Local Level

1. Identify champion to promote policies and shepherd their adoption.
2. Design the PAYT program with hauler input.
3. Conduct extensive customer education and outreach.
4. Incorporate the cost of recycling in the solid waste collection fee.
5. Develop recycling programs with convenience equal to that of disposal.
6. Ensure pricing increments and container sizes are strategically chosen to maximize impact on behavior change.
7. Establish the ability to inspect hauler records and conduct outreach.
8. Adjust the pricing structure over time to ensure stable financing of the solid waste and recycling collection system.
9. Ensure proper resourcing of city staff to monitor the PAYT program by considering the subscription responses other cities experienced when PAYT was implemented.

²⁶ Ibid; and Skumatz, L. 2002. *Variable-Rate or "Pay-As-You-Throw" Waste Management: Answers to Frequently Asked Questions*. Available here:
<http://reason.org/files/a4e176b96ff713f3dec9a3336cafd71c.pdf>

9 Conclusions

In the process of completing this policy research and examining existing state and municipal programs, RSE has concluded that high-performing municipal recycling programs:

- collect a wide range of recyclable materials (and increasingly organics),
- provide waste generators with convenient access to recycling opportunities,
- have strong recycling promotion programs, and
- are supported by a compliment of policies and funding that prompt and enable infrastructure development and incentivize participation in recycling programs.

Cart based, single stream curbside recycling is now regarded as a best practice and there a growing focus on universal recycling service provision – for multi-family as well as single family homes plus businesses, institutions and other away-from-home locations. Two examples of communities with such programs reviewed for this study are San Francisco, CA and Seattle, WA.

Of particular importance with respect to the above is funding. Generally speaking, states whose governments provide funding support and municipalities that have PAYT systems in place have more high-performing recycling programs. Delaware is a state that passed a universal recycling law with a funding mechanism to support implementation, and Austin and San Francisco both have PAYT programs to fund their collection systems.

A unique blend of circumstances in each jurisdiction will determine the appropriate policy positions. Stakeholders will need to assess what is politically and institutionally achievable on a jurisdiction-specific basis, and then select a compliment of policy and program components from the tool box of policy and program options. Four key circumstances will impact development of positions on a state-by-state basis:

- Extent to which and nature of policy is already in place
- Availability of viable end markets and processing infrastructure
- Availability of funding mechanism(s) to support recovery program development
- Political climate and culture with respect to solid waste management and environment protection

State and local policies and programs ideally should be paired in a synergistic fashion. For example, past studies have reported that PAYT is more effective when communities are required to establish recycling or diversion plans with stated goals, and it is more likely that communities will implement PAYT if there is a recycling service provision policy in place. Some jurisdictions recommend mandating PAYT prior to other recycling policies to create a stable funding mechanism for recycling programs.

While many states and local governments have succeeded in getting policies enacted, doing so is not without challenges. Formation of a coalition of diverse partners to work collaboratively in promoting a jurisdiction specific policy approach paired with supporting program tools will heighten the likelihood of success and in overcoming stakeholder opposition that may exist.

Appendix 1: Profiles of Individual State and Local Government Policies

The information provided herein was developed via web-based research, interviews with selected jurisdiction representatives, and drawing on the reports commissioned by AMERIPEN and ReCommunity referenced in the Methodology section. While the study authors have worked to report accurate information, due to the limited availability of up-to-date details on these programs, the accuracy of this information cannot be guaranteed.

State Legislation Summary

Alabama

Recycling Policy – Goal:

- NR²⁷

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- Recycling is mandatory for public schools, colleges/university and state agencies. Alabama has not mandated any reporting requirement for recycling other than requiring public schools, universities and state agencies to report volume recycled annually.

Arizona

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- Each state agency, college or university; and county, city, and public school must establish a source separation and recycling program for recyclables generated by agency activities

²⁷ NR=Not researched

California

Recycling Policy – Goal:

- AB939 (1989) mandated local gov achieve 50% diversion by 2000. AB341 (2011) requires ICI/MF recycling by 2012, and directs CalRecycle to develop strategy to achieve 75% diversion by 2020.
- Compliance Point: AB939: Local jurisdictions compare diversion against baseline year disposal per capita. AB341: ICI entity >4cy/wk & MF >5 units must arrange for recycling service; local gov must implement ICI recycling pgm.
- Compliance Method: AB939: Mandatory reporting requirements; eligibility for grants contingent on reporting. AB341: local gov O&E, monitoring and reporting to track ICI & MF compliance"

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- AB341 mandates ICI/MF service in some form at the local level, including ability to charge & collect a fee.
- Policy applies to aluminum and steel cans, HDPE, PET, and glass containers

Disposal Ban:

- No

PAYT:

- No

School Policy:

- Schools are covered by mandatory commercial recycling policy. CalRecycle is required to implement a waste reduction program for school districts.

Connecticut

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- Glass food and beverage containers; Metal food and beverage containers; High grade white office paper; Old newspaper; Old corrugated containers; HDPE plastic containers; PETE plastic containers; Boxboard; Old magazines; Colored ledger (i.e. colored office paper).
- Compliance Point: All generators – residential, commercial, institutional; haulers, municipalities, landfills, transfer stations and incinerators/WtE facilities
- Compliance Method: Municipality and solid waste management facility submittal of acceptable plans including disposal facility enforcement procedures. Annual reporting of recycling data.

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- All schools are required to recycle: Glass & Metal Food and Beverage Containers; PET and HDPE containers; Corrugated Cardboard; Boxboard; ONP; OMG; selected other materials

Delaware

Recycling Policy – Goal:

- Senate Bill No. 234 establishes zero waste diversion goals as follows:
 - 72% solid waste diversion by Jan. 1, 2015
 - 85% solid waste diversion by Jan. 1, 2020
 - 50% municipal solid waste diversion by Jan. 1, 2015
 - 60% municipal solid waste diversion by Jan. 1, 2020
- Compliance Method: Reporting requirements for all persons who collect, process and market recyclables (type and quantity of recyclables managed, collection methods, etc.)

Recycling Policy – Source Separation:

- Senate Bill No. 234 requires all commercial businesses to actively participate in a comprehensive recycling program. The type of materials that must be recycled is not specified.
- Compliance Point: Commercial generators
- Compliance Method: 7 Del. C. § 6059 affords the Department of Natural Resources & Environmental Control (DNREC) enforcement authority for failure to comply with the requirements of universal recycling. Penalties range from \$100 to \$1,500 per day. Grace period for compliance until 2015 has been recommended.

Recycling Policy – Service Provision:

- Senate Bill No. 234 requires all trash haulers, including municipalities, to provide single-stream curbside recycling service to their customers by delivering an appropriate sized recycling cart and collecting recycling at least once every two weeks
- ‘Single stream’ defined as a system in which all fibers (including but not limited to paper, cardboard, etc.) and containers (including but not limited to plastic, glass and metal) are commingled for collection
- Applies to single and multi-family residential customers, and most bars and restaurants
- Legislation also establishes a Recycling Grants and Low Interest Loan Program to support implementation of recycling programs
- Compliance Point: All persons providing solid waste collection services
- Compliance Method: 7 Del. C. § 6059 affords DNREC enforcement authority for failure to comply with the requirements of universal recycling. Penalties range from \$100 to \$1,500 per day.

Disposal Ban:

- No

PAYT:

- No

School Policy:

- NR

Kentucky

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- All schools are required to recycle: Glass & Metal Food and Beverage Containers; PET and HDPE containers; Corrugated Cardboard; Boxboard; ONP; OMG; selected other materials

Maine

Recycling Policy – Goal:

- 50% recycling goal

Recycling Policy – Source Separation:

- OCC and office paper; glass (universities only)
- Compliance Point: State government, state universities and businesses with 15 or more employees at one location
- Compliance Method: There is no enforcement of the state requirements for office paper or corrugated cardboard recycling, though it is included in the state's contract for recycling and waste removal services at its buildings.

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- No

Maryland

Recycling Policy – Goal:

- Maryland Recycling Act (MRA): A county with a population greater than 150,000 must recycle 35% and a county with a population less than 150,000 must recycle 20% of its waste stream by December 31, 2015. State agencies must implement a recycling plan with a revised 30% recycling rate mandate. In no case is the recycling rate to be less than 10%.
- MRA recycling statistics track a determined list of materials (compostable, glass, metal, paper, plastic, other materials). Cartons are not part of the list.
- Compliance Point: All counties and Baltimore City and state government.
- Compliance Method: Local government must produce solid waste plan and provide an update to the State biannually on quantity of waste collected, recycled, etc. If a jurisdiction fails to meet the specified reductions, state and local authorities can prohibit the issuance of building permits for all new construction.

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- MRA: Each property owner or manager of an apartment building or a council of unit owners of a condominium with 10 or more units to provide recycling for the residents of the dwelling units by October 1, 2014 (2012).
- Compliance Point: Multi-family property owners/managers.
- Compliance Method: Counties responsible for enforcement.

Disposal Ban:

- No

PAYT:

- No

School Policy:

- MRA requires counties to have a recycling plan to address the collection, processing, marketing, and disposition of recyclable materials from county public schools.

Massachusetts

Recycling Policy – Goal:

- 56% recycling goal and 70% waste diversion goal are stated in policy, not statute

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- No

Disposal Ban:

- Glass, steel and aluminum containers, #1-6 plastic bottles, recyclable paper
- Commercial food waste soon to be designated under ban.
- Law passed in 1990, effective dates from 1992-2000
- Compliance Point: Transfer station and disposal facilities: Prohibition on accepting banned materials, de minimis amounts allowed.
- Compliance Method: Disposal facilities must submit disposal ban compliance plan. Department of Environmental Protection (DEP) inspects as part of periodic regulatory inspections; fines may be imposed up to \$25,000. Enforcement has been limited; focus on voluntary compliance. Ban is managed at state level with facilities; local government is not necessarily involved.

PAYT:

- No

School Policy:

- No

Minnesota

Recycling Policy – Goal:

- 60% recycling goal

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- Statute 115A: Opportunity to recycled must be provided for:
 - Curbside pick-up, centralized drop-off, or a local recycling center for at least four broad types of recyclable materials in cities with a population of 5,000 or more; and
 - Monthly pick-up (curbside) of at least four broad types of recyclable materials in first and second class and cities with a population of 5,000 or more in the Metropolitan Area
 - Broad material types are different categories of materials such as metal, glass, paper, plastic, yard waste, and textiles.

Disposal Ban:

- No

PAYT:

- Minnesota Statute 115A.9301: A local government unit that collects charges for solid waste collection directly from waste generators shall implement a fee structure that increases as the volume or weight of the waste collected on-site from each generator's residence or place of business increases.

School Policy:

- No

Nevada

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- Each school district is required to recycle paper and paper products

New Jersey

Recycling Policy – Goal:

- Legislation enacted in 1992 (P.L. 1992, c.167) set recycling goal of 50% of the municipal solid waste stream and 60% of the overall waste stream by the end of 1995.

Recycling Policy – Source Separation:

- Counties must develop and implement recycling plans for at least 3 designated materials (Aluminum, steel, glass, 1&2 ONP, mixed paper, office paper, and corrugated cardboard).
- Residential and ICI
- Compliance Point:
 - Waste generators.
 - County and municipal level governments: Counties must develop a county recycling plan that is reviewed and approved by the NJDEP. Municipalities then pass recycling ordinances based upon their county's recycling plan.
 - Haulers of recyclable materials are required to do visual inspections of materials put out at the curb and solid waste disposal facilities are required to do inspections of incoming loads of waste for the presence of mandatory designated recyclable materials.
- Compliance Method: Recycling grants contingent on meeting standards and annual reporting. Outreach and education must be done twice annually. State has stepped up inspections of commercial generators and disposal sites to look for violators.

Recycling Policy – Service Provision:

- Each municipality shall provide for a collection system for the materials designated in the municipal ordinance and in those instances where collection is not otherwise provided for by the generator, the county, inter-local service agreement or joint service program, or other private or public recycling program operator.

Disposal Ban:

- No

PAYT:

- No

School Policy:

- Schools fall under state's mandatory recycling law

North Carolina

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- Beverage containers
- Compliance Point: Holders of ABC permits
- Compliance Method: Technical assistance and education more than enforcement. Enforcement largely at disposal sites.

Recycling Policy – Service Provision:

- No

Disposal Ban:

- Aluminum cans banned since 1994; plastic bottles since 2009; Glass beverage containers from ABC permit holders also banned from disposal since 2005.
- Compliance Point: Bans disposal by all parties and bans acceptance by disposal facilities.
- Compliance Method: State enforcement chiefly applied at disposal facilities and transfer stations. Depending on type of violator and violation, state may assess administrative and/or civil penalties. State prefers to use technical assistance and education instead of enforcement to prompt compliance.

PAYT:

- No

School Policy:

- No

New York

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- Local governments must require source separation for materials with economic markets (none specifically designated)
- Compliance Point: Local government
- Compliance Method: Each municipality has their own penalties or fines for those people who do not recycle.

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- Public and private schools, institutions of higher education and any other educational institutions in New York State are required to recycle materials collected in their local recycling program

Oregon

Recycling Policy – Goal:

- House Bill 3744 (2001): 45% recovery by 2005 and 50% recovery by 2009.
- HB 3744 also waste generation goals
 - By 2005, there would be no annual increase in per capita municipal solid waste generation
 - By 2009, there would be no annual increase in total municipal solid waste generation.

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- Mandatory service provision for ONP; Ferrous and Non-ferrous scrap metal; Used motor oil; OCC and Kraft paper; Al; Container glass; Hi-grade office paper; Tin cans; Yard debris. All cities with 4,000+ must provide a minimum of 3 recycling program elements (of 9 listed in regulation) and basic recycling promotion and education. All cities with 10,000+ must provide an additional 1 or 2 recycling program elements (depending on the activities chosen).
- Compliance Point: Local government. Expectation that municipalities abide by defined best practices (selection among a list of options).
- Compliance Method: Reliance on technical assistance first. Enforcement via inspections, notices of violation, civil and criminal penalties. Incentives also used: wastesheds are eligible for a 6 percent credit toward their required 50% MSW recovery goal by implementing state-approved programs.

Disposal Ban:

- No

PAYT:

- Variable-rate pricing is stated as one of nine program elements that communities can choose (not required but listed as an option in regulation).

School Policy:

- NR

Pennsylvania

Recycling Policy – Goal:

- 35% recycling goal in statute

Recycling Policy – Source Separation:

- Mandatory recycling by residences, commercial and institutional establishments of high grade office paper, aluminum, and corrugated paper
- Compliance Point: Residential and ICI generators, local government is responsible for adopting a source separation ordinance or regulation to comply with state legislation
- Compliance Method: Enforcement orders, restraining violations, civil penalties and criminal penalties including summaries and misdemeanors. PADEP may request that the State Treasurer withhold payment of funds payable to a municipality or county by PADEP. PADEP may not issue grants to any non-compliant counties and municipalities.

Recycling Policy – Service Provision:

- Municipalities with populations of at least 10,000 had to implement curbside recycling programs by 1990. Municipalities with populations between 5,000 and 10,000 and more than 300 persons per square mile had to implement curbside programs by 1991.
- Mandatory service provision by municipalities and sponsors of special events for at least 3 of: Aluminum and steel cans, OCC, glass containers, and plastics, high grade office paper, ONP

Disposal Ban:

- No

PAYT:

- No

School Policy:

- Public and private schools, institutions of higher education in Pennsylvania and any other educational institutions to recycle where buildings are located in mandated municipalities, as defined by Act 101. At a minimum, high-grade office paper, corrugated paper and aluminum must be recycled. Additional materials such as glass, newsprint, plastics, steel and bimetallic cans, and leaf waste may be required by each municipality.

Rhode Island

Recycling Policy – Goal:

- Cities and towns reach a recycling rate of 35% and a diversion rate of 50% by 2012

Recycling Policy – Source Separation:

- Commercial and residential source separation requirement
 - Designated packaging types for commercial mandate: Aluminum; coated unbleached kraft beverage carriers; corrugated cardboard; glass food and beverage containers; newspaper; HDPE plastic milk and water containers; office paper; PET plastic soft drink containers; steel, and tin coated steel cans; telephone directories.
 - Designated packaging types for residential mandate: Aluminum and steel cans, foil and pie plates, empty aerosol and paint cans, glass containers, milk, juice and aseptic drink cartons and boxes, HDPE bottles and PET containers, OCC, paperboard, ONP, phone books, printing and writing paper.
- Compliance Point: Commercial and residential generators
- Compliance Mechanism: Non-compliant parties are subject to administrative penalties

Recycling Policy – Service Provision:

- Local governments must plan and implement a recycling program and establish programs for recyclable materials which include aluminum and steel cans, foil and pie plates, empty aerosol and paint cans, glass containers, milk, juice and aseptic drink cartons and boxes, HDPE bottles and PET containers, OCC, paperboard, ONP, phone books, printing and writing paper.
 - Compliance Point: Local government
 - Compliance Mechanism: Any municipality that fails to meet the requirements is subject to administrative penalties.
- Compliance Point: local government
- Business with 50 or more employees must prepare and submit a source reduction and recycling plan
 - Compliance Point: Employer or Property Owner/Manager who is responsible for solid waste management of a business with 50 or more employees.

Disposal Ban:

- No

PAYT:

- No

School Policy:

- The materials collected for recycling from this standard program are: glass containers, tinned steel cans, aluminum cans, foil, and pie plates, "#2" HDPE plastic milk/water jugs, "#1" PETE soda bottles, and newspapers (placed inside) brown paper grocery bags."

Texas

Recycling Policy – Goal:

- Achieve the recycling of at least 40% of the state's total municipal solid waste stream. Not time-stamped.
- Compliance Point and Mechanism: Executive Director must report performance by material type annually

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- No

Vermont

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- Yes, for mandated materials as defined below

Recycling Policy – Service Provision:

- By July 1, 2014, collection service providers are required to collect mandated recyclables separate from other solid waste and deliver to management facility; unless municipal ordinance or SWIP provides an alternative. Haulers cannot charge a separate fee. All households and businesses are to have equal access to recycling collection and solid waste collection.
- "Mandated recyclable" means the following source separated materials: aluminum and steel cans; aluminum foil and aluminum pie plates; glass bottles and jars from foods and beverages; polyethylene terephthalate (PET) plastic bottles or jugs; high density polyethylene (HDPE) plastic bottles and jugs; corrugated cardboard; white and colored paper; newspaper; magazines; catalogues; paper mail and envelopes; boxboard; and paper bags.

Disposal Ban:

- Yes, on all mandated materials.

PAYT:

- Yes

School Policy:

- Yes

Virginia

Recycling Policy – Goal:

- Each county, city, town or regional authority is required to establish recycling programs that would meet or exceed 25% recycling goal. Localities or regions (called Solid Waste Planning Units) with population densities less than 100 persons per square mile or with an unemployment rate 50% higher than the statewide average now qualify for a 15% mandated recycling level.
- Compliance Point: Local government/regional authorities
- Compliance Method: State requires local governments to file annual reports demonstrating that at least 25% of the county's waste is recycled (Every 4 years and 15% for smaller communities).

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- No

Washington

Recycling Policy – Goal:

- Washington has a 50% recycling goal set by state law. The goal was achieved in 2012 when the state reached a reported recycling rate of 50.1 percent.

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- RCW 70.95.090 County and city comprehensive solid waste management plans require counties and cities to develop SWM plans within which must include a recycling element that establishes programs for the collection of source separated materials from residences in urban and rural areas. It is not material specific; the requirement just requires that a recycling program be established.

Disposal Ban:

- No

PAYT:

- Washington's variable-rate law applies mostly to private collectors that operate in unincorporated areas of the state, but virtually all municipalities in the state use variable rates. The provision does not apply to local governments who provide service directly or through contract.

School Policy:

- No

West Virginia

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- Municipalities must require source separation of at least 3 materials by residents, commercial and institutional establishments.

Recycling Policy – Service Provision:

- Mandatory curbside recycling service provision by municipalities with population of 10,000 or more
- Compliance Point: Local government
- Compliance Method: State requirement that municipalities abide by best practices outlined in the law including local government establishment of enforcement provisions and meeting minimum specified service levels.

Disposal Ban:

- No

PAYT:

- No

School Policy:

- No

Wisconsin

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- Recycling law requires every municipality in the state to operate a recycling program to manage list of designated materials (aluminum, steel, glass and #1 and 2 plastic containers, corrugated cardboard, newspaper, office paper, magazines). Every citizen in Wisconsin must have residential recycling service or drop-off centers within easy access.
- Compliance Point: Local units of government (responsible units or RUs) implement and enforce municipal recycling programs.
- Compliance Method: RUs access to recycling grants contingent on having effective program (metric defined by state). DNR requires annual reports and periodic RU program evaluations.

Disposal Ban:

- Aluminum, steel, glass and #1 and 2 plastic containers, corrugated cardboard, newspaper, office paper, magazines (Res & ICI generators) are banned from disposal. Polystyrene foam and plastics #3-#7 exempted from ban.
- Law passed in 1990, packaging bans effective 1995, with plans to implement and expand diversion programs.
- Compliance Point: Bans disposal by all parties and bans acceptance by disposal facilities. No definition of minimum compliance threshold. Haulers, municipalities and counties (if they are the local unit of government managing the state-mandated recycling program), landfills (for recyclables that have been separated from trash only).
- Compliance Method: Department of Natural Resources (DNR) uses stepped enforcement: can issue citations and collect fines, but focus is on voluntary compliance through education, technical and financial assistance, series of official warnings and meetings. Final recourse is through Department of Justice but few recycling cases are considered serious enough to make it that far. Inspections of points of generation and disposal facilities are also used to enforce the ban.

PAYT:

- No

School Policy:

- No

District of Columbia

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- Aluminum and steel containers, glass and plastic containers, paper, paperboard, and OCC
- Compliance Point: D.C. customers; commercial and institutional establishments
- Compliance Method: Set out inspections and generator fines for failure to set out material or setting out improperly; Hauler load inspections at disposal sites and potential for fines. Reporting requirements.

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- No

Local Jurisdictions Policy Summary

Los Angeles, CA

Recycling Policy – Goal:

- Diversion goal of 70% by 2013 and Zero Waste by 2020

Recycling Policy – Source Separation:

- ICI/MF mandate to be in compliance with AB341.
- Compliance Point: All haulers must have AB939 compliance permit; report tons. Generator must comply by implementing separation & collection program.
- Compliance Method: No specific enforcement method defined; provide technical assistance.

Recycling Policy – Service Provision:

- Not mandatory, but City provides curbside recycling to all single family residents

Disposal Ban:

- No

PAYT:

- No

School Policy:

- No

San Diego, CA

Recycling Policy – Goal:

- No. Comply with state goal of 50% waste reduction.

Recycling Policy – Source Separation:

- All single family residences; City-serviced multi-family residences; and privately serviced businesses, commercial/institutional facilities, apartments, and condominiums and special events requiring a City permit are required to recycle.
- Plastic and glass bottles and jars, paper, newspaper, metal containers and cardboard must be recycled. City serviced residences, and privately serviced commercial and institutional properties must also recycle rigid plastics including clean food waste containers, jugs, tubs, trays, pots, buckets, and toys.
- Multi-family and ICI phase in by building size, requires occupant education.
- Compliance Point: At the generator; ordinance specified minimum service standards.
- Compliance Method: Enforcement by the city. Violations are misdemeanor with fines up to \$1000.

Recycling Policy – Service Provision:

- Recycling Ordinance: Franchise and licensed collectors must provide recycling service; specifying type, materials and frequency.

Disposal Ban:

- No

PAYT:

- No

School Policy:

- No

San Francisco, CA

Recycling Policy – Goal:

- Divert 75% of its waste by 2010 and achieve zero waste by 2020

Recycling Policy – Source Separation:

- Ordinance 1903: mandatory source-separation of recyclables and compostable material.
- Compliance Point: At the generator (residential and ICI).
- Compliance Mechanism: Extensive education and outreach. Stepped enforcement consisting of education, tagging, denial of collection service, inspections, notices and fines.

Recycling Policy – Service Provision:

- Licensed hauler (Recology) must provide three-stream system for all customers.
- Compliance Point: Hauler

Disposal Ban:

- No

PAYT:

- Reduced black cart size of 20 gallons has lower fee.

School Policy:

- No

San Jose, CA

Recycling Policy – Goal:

- 75 percent diversion by 2013 and zero waste by 2022

Recycling Policy – Source Separation:

- Mandatory commercial recycling stated on website to comply with state legislation. Not Policyd in ordinance.

Recycling Policy – Service Provision:

- Not mandatory, but City provides curbside recycling to all single-family residents

Disposal Ban:

- No

PAYT:

- Variable rates for cart from 20 to 96 gallons (\$28 to \$90 per month)

School Policy:

- No

Boston, MA

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- Residents with service shall separate recyclables. ICI: haulers must offer recycling to ICI generators.

Recycling Policy – Service Provision:

- Code: the city shall designate the residential premises, schedule and materials for recycling.

Disposal Ban:

- Code: ensure compliance with state bans
- Compliance Point: nothing in Code

- Compliance Mechanism: nothing in Code

PAYT:

- No

School Policy:

- No

Cambridge, MA

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- Ordinance: all buildings (residential and ICI) must separate city-designated recyclables for recycling. Materials per ordinance plus wide range in flyer.
- Compliance Point: Person or building owner
- Compliance Method: Commercial and multi-family must submit recycling plans; city can impose \$300 fine per occurrence.

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- No

Worcester, MA

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- Ordinance: No recyclables in waste
- Compliance Point: Residential units
- Compliance Method: City can impose \$25 fine per occurrence

Recycling Policy – Service Provision:

- No

Disposal Ban:

- Ordinance: No recyclables in waste
- Compliance Point: Residential units
- Compliance Method: City can impose \$25 fine per occurrence

PAYT:

- PAYT has been major driver of high recovery; 20 year old program; sticker/bag fee \$1.50/30-gallon and \$0.75/15-gallon

School Policy:

- NR

Montgomery County, MD

Recycling Policy – Goal:

- County-wide goal: recycle 50% of all solid waste
- Compliance Method: Reg.ER 15-04AM may be enforced in accordance with Montgomery County Code 1994, sections 48-49 and the policies of the County's Comprehensive SWM Plan.

Recycling Policy – Source Separation:

- Mandatory recycling requirements for residents, multi-family properties (multi-family building with > 101 units must submit waste reduction plan to reduce quantity of waste disposed by 50% annually, all multi-family to produce annual report), and businesses.
- Passed regulation ER 15-04AM in February 2005: specifies what materials must be recycled. These are consistent across the county and generators. Regulations enforced by a team of County staff and investigators.

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- NR

Harford County, MD

Recycling Policy – Goal:

- No

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- Trash/Recycling pick up is not a County service; residents must contract independently with a trash hauler licensed to serve County residents. Trash haulers must offer residential trash collection and recycling collection at least once a week.
- Commercial: Trash haulers serving commercial customers must offer a separate and appropriate recycling collection method.

Disposal Ban:

- No

PAYT:

- The City of Aberdeen is unique in that its trash removal is a volume-based sticker system. The program offers financial savings to residents who recycle. Trash “stickers” can be purchased from many Aberdeen merchants and prices are based on the size of trash bag used. Recyclables do not require a sticker. Aberdeen offers municipal trash/recycling collection.

School Policy:

- NR

Minneapolis, MN

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- Variable rate: \$17/hh/mo base rate; plus \$5 for 94-gal cart or \$2 for 22-gal cart

School Policy:

- NR

St. Paul, MN

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- ONP, OMG, OCC, aluminum, steel and glass, #1 and #2 plastics, and compostable food and yard waste
- Enforced at the generator and collector; no thresholds defined
- By city, can revoke collector's license, issue citations and impose fines (\$25-\$100 per occurrence)

Recycling Policy – Service Provision:

- Subscription service requires hauler to provide recycling

Disposal Ban:

- No

PAYT:

- Variable rate: haulers must offer volume-based rate with three tiers (1, 2 & 3 can service)

School Policy:

- NR

Ramsey County, MN

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- Minimum required levels of service for residential recycling, which include:
 - At least every-other-week collection of four broad types of material.
 - Universal recycling collection to all residents – this includes residents of multifamily buildings, which each municipality ensures through either direct service provision or regulatory means.
- Ramsey also has automatic recycling enrollment

Disposal Ban:

- No

PAYT:

- Yes

School Policy:

- NR

Charlotte/Mecklenburg, NC

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- County source separation ordinance: OCC & OP from ICI generating > 16 cy/wk of MSW
- Compliance Point: At the business-level
- Compliance Method: Periodic inspection; 3 citations and then \$25 fine per occurrence

Recycling Policy – Service Provision:

- County mandates single family curbside recycling

Disposal Ban:

- No

PAYT:

- No. There has been some preliminary discussions but no specific plan to implement.

School Policy:

- NR

Durham, NC

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- No

Disposal Ban:

- Target recyclables as determined by the city. Website lists aluminum, steel, glass and plastic bottles, newspaper, corrugated cardboard cannot be placed in waste stream.
- Compliance Point: All generators
- Compliance Method: Council can set a fee, but no fee or enforcement mechanism apparent in ordinance, city encouraging voluntary compliance.

PAYT:

- No

School Policy:

- NR

Raleigh, NC

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- No

Disposal Ban:

- ICI: ban on corrugated cardboard.
- State banned materials also banned from landfill in Raleigh.
- Compliance Point: ICI: at landfill, loads with >10% OCC
- Compliance Point for State banned material: at point of collection
- Compliance Method: ICI OCC: Load inspection, surcharge of 1-2x gate rate.
- Compliance Method for State banned material: City can impose \$400 fine for violating state bans

PAYT:

- No

School Policy:

- NR

Fair Lawn, Bergen County, NJ

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- Code: reflects requirements of the state policy
- Compliance Point: residential and ICI generator
- Compliance Method: Enforcement by city by inspection at generator, can issue fines per Code. Extensive recycling program outreach and education, curbside recycling for all single-family residents, technical assistance for ICI

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- NR

Glassboro, Gloucester County, NJ

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- Code: reflects requirements of the state policy
- Compliance Point: residential and ICI generator

- Compliance Method: Enforcement by city by inspection at generator, can issue fines per Code. Extensive recycling program outreach and education, curbside recycling for all single-family residents, technical assistance for ICI

Recycling Policy – Service Provision:

- No

Disposal Ban:

- No

PAYT:

- No

School Policy:

- NR

Portland, OR

Recycling Policy – Goal:

- 75% recycling goal by 2015 and goal to reduce per capita waste generation below 2005 levels by the year 2015.
- All businesses and multifamily complexes must recycle 75% of the solid waste they produce

Recycling Policy – Source Separation:

- All businesses must recycle all of their paper and containers (recyclable metal, plastic and glass containers)
- Compliance Point: “Business” is defined as any commercial entity, including industrial and institutional.
- Compliance Method: City has the authority to inspect sites, buildings and other structures and equipment for compliance.
- It is a violation for any customer to place in a recycling cart, recycling container or recycling bin any plastic bag, diapers, pet waste, Styrofoam, wood, food, yard debris, or any Solid Waste.

Recycling Policy – Service Provision:

- Recycling service standard for residential (single-family and multi-family) and businesses is required by a Metro Council ordinance and a Portland ordinance. Mandate includes promotion and education.
 - Compliance Point: Local government
- Commercial customers that provide garbage collection service to business tenants as part of their rental/lease, must provide recycling and all multifamily complexes must establish recycling systems for their tenants’ use.
 - Compliance Point: Property manager or tenant of commercial property
 - Compliance Method: City will inspect the premises, assign responsibility to either the customer (e.g. property manager) or generator (e.g. tenant), notify the business of non-compliance including an offer to assist them to resolve the issue, and if the business still doesn't comply, they can be fined for the infraction.

Disposal Ban:

- No but the city does have a ban on the use of polystyrene foam containers that is enforced with fines.

PAYT:

- The City sets a variable rate schedule based on the size and number of containers and the frequency of collection. Rates are lower for smaller volume containers and for a given container size for fewer containers.

School Policy:

- NR

Seaside, OR

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- Recycling service mandate for residential properties (includes multi-dwelling properties with more than 3 units). City Council is to designate material types for recycling by resolution.
- Compliance Point: Franchisee (the collector) responsible for providing the service and is prohibited from charging for recycling.

Disposal Ban:

- No

PAYT:

- Yes. Offer 2 cart sizes - 32 gallon and 90 gallon and it costs more to service the 90 gallon container as well as an additional fee for extra bins.

School Policy:

- NR

Middleton, RI

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- Conforms to state requirements.

Recycling Policy – Service Provision:

- Conforms to state requirements.

Disposal Ban:

- No

PAYT:

- \$156 annual fee; \$1.75/15 gallon and \$2.00/33gallon bags

School Policy:

- NR

Warwick, RI

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- Conforms to state requirements.

Recycling Policy – Service Provision:

- State mandates recycling service; town will not collect trash cart if no recycling cart is also set-out.

Disposal Ban:

- No

PAYT:

- No

School Policy:

- NR

Austin, TX

Recycling Policy – Goal:

- 90% diversion by 2020

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- Universal Recycling Ordinance. Must provide access to recycling for Paper, OCC, AL cans, PETE (#1) and HDPE (#2) and Glass bottles and jars.
- Compliance Point: Owners of multifamily and commercial property.
- Compliance Method: Property Owners must fill out a Recycling Plan form to report level of service, City will conduct inspections. Enforcement starts with education and working with owners to overcome issues. After a year, if owner not compliant, written notices and then fines. Ordinance is being phased in by property size - big first and then over time smaller properties will become subject to the ordinance.
- Restaurants: All Austin restaurants to begin composting by 2017, as well as start recycling paper, plastics, and aluminum by 2014.

Disposal Ban:

- No

PAYT:

- As per administrative rules, all single family homes, duplexes, and triplexes within the Department's service boundaries must use the City's PAYT curbside collection services, and pay the approved rates. Costs are based on trash cart size and they also use Extra Trash Stickers.

School Policy:

- NR

Seattle, WA

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- Residential: The following materials must be recycled: recyclable paper, cardboard, glass and plastic bottles and jars, and aluminum and tin cans.
- Commercial: The following materials must be recycled: paper, cardboard, yard waste, recyclable glass bottles and jars, plastic cups, bottles and jars, and aluminum or tin cans (glass, plastic, aluminum and tin added to the list in 2013)
- Compliance Point: Residential and commercial establishments must separate the materials covered in the ordinance for recycling.

Recycling Policy – Service Provision:

- No

Disposal Ban:

- Residential disposal ban for recyclable paper, cardboard, glass and plastic bottles and jars, and aluminum and tin cans
- Commercial disposal ban for paper, cardboard, yard waste, recyclable glass bottles and jars, plastic cups, bottles and jars, and aluminum or tin cans (glass, plastic, aluminum and tin added to

the list in 2013).

- Recyclable items cannot exceed 10% by volume of the waste receptacle.
- Compliance Point: Generators (residential and commercial). Commercial exceptions include Commercial or multifamily customers without adequate space for recycling and garbage dumpsters that receive waste from the public.
- Compliance Method:
 - Single-Family: Service denied and left notice with information on how to comply.
 - Apartment Owners, Property Managers, and Business owners: Up to two warning notices before a \$50 fine is imposed. For the new expanded ordinance affecting commercial generators, city will have phased approach to enforcement: education, monitoring and notices in 2014, and then escalate to fines in 2015.
 - Recycling and Disposal Station Customers: Self-haul customers will be asked to separate out recyclable paper and cardboard as well as yard debris from their loads.

PAYT:

- Curbside/Alley pickup and backyard garbage container customers offered variable-rate pricing structure
- Curbside/alley options: micro-can, mini-can, 32 gallon can, 60 to 65 gallon cart, 90 to 96 gallon cart)

School Policy:

- NR

Spokane, WA

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- No

Recycling Policy – Service Provision:

- City is required to offer minimum service level requirements for residential. Newsprint, Aluminum, Tin Cans, Glass Bottles and Jars, Plastic Containers, Household Batteries, Cardboard and Brown Paper Bags, Magazines, Mixed Office Pack Paper, Recyclables contaminated with >10% of solid waste will be billed and treated as solid waste.
- Compliance Point: Local government

Disposal Ban:

- No

PAYT:

- Volume-based rates based on the size of the container used

School Policy:

- NR

Madison, WI

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- Ordinance for city-designated recyclables
- Compliance Point: Residential and ICI generators.
- RUs must have state-approved plan to recycle banned materials.

- Compliance Method: City can inspect and impose citation and fines \$50-\$200 or \$100-\$500 after two offenses

Recycling Policy – Service Provision:

- No

Disposal Ban:

- Ordinance: no disposal of recyclables (mirrors state law)
- Compliance Point: Generator must comply (residential and commercial)

PAYT:

- 3 cart sizes: 35,65 and 90 gallon

School Policy:

- NR

Milwaukee, WI

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- Ordinance: city-designated recyclables must be source-separated and kept clean. No disposal or scavenging of source-separated materials.
- Compliance Point: Residential and ICI generators.
- Compliance Method: Generator must comply: ban for any community or hauler that does not have an approved recycling program. RUs must have state-approved plan to recycle banned materials. City may use any lawful means to enforce including outreach/education, inspections, notice of violation followed by penalties/liens cost dependent on generator type.

Recycling Policy – Service Provision:

- No

Disposal Ban:

- Ordinance: no disposal of recyclables (mirrors state law)
- Compliance Point: Generator must comply (residential and commercial)

PAYT:

- No

School Policy:

- NR

Neenah, WI

Recycling Policy – Goal:

- NR

Recycling Policy – Source Separation:

- Ordinance: city-designated recyclables must be source-separated and kept clean. No disposal or scavenging of source-separated materials.
- Compliance Point: Residential and ICI generators.
- City can refuse collection and tag non-compliant set-outs. Citations and fines may be imposed according to general enforcement provisions in code.

Recycling Policy – Service Provision:

- ICI and multi-family owners must provide containers and arrange recycling service for city designated materials.

Disposal Ban:

- Ordinance: no disposal of recyclables (mirrors state law)
- Compliance Point: Generator must comply (residential and commercial)

PAYT:

- No

School Policy:

- NR

Appendix 2: Interview Questions

Questions for State Governments: Disposal Bans, Recycling Policies & PAYT

1. What factors do you believe most contribute to your state achieving high recovery rates for recyclable materials?
 - State policy (disposal ban / recycling policy) (if so, which one(s))
 - Policy enforcement
 - PAYT (if applicable)
 - State recycling grants or other funding
 - Public awareness and education efforts
 - Recycling/recovery target
 - Other _____

2. Do you believe that bans, mandates and/or PAYT policies are effective when enacted at the state level (for increasing recovery/recycling of packaging and printed paper)?

If so, what attributes do you believe specifically contribute to their effectiveness (best practices)?

3. Currently, only 4 states (MA, MN, NC,WI) have enacted bans on forms of packaging – why do you believe more states have not done so?
4. Have any packages or materials been negatively impacted by landfill bans or during the legislative process regarding landfill bans?
5. When landfill bans do not pass – why? Have any landfill bans ever been repealed?
6. Similarly, only 3 states have PAYT policies at the state level. Why do you believe this is so?
7. Has your state attempted to enact _____? (*Mention policies that they now do not have*), If not, why not? If so, what happened?
8. Regarding the _____ policy(s) that your state does have, what resulted in successful passage by the legislature? (*If the interviewee is too new to their position to answer this*

question, ask for contact information for someone with a historical perspective on recycling policy development in the state. This applies to question 7 below as well.)

9. What was the reaction by various stakeholders during the time the policy was under consideration? Who was opposed? In favor?
 - State politicians
 - Local governments
 - Recycling and solid waste service providers
 - Waste generators
 - Citizens
 - Other businesses
 - Other_____

10. What is the full range of tools being deployed at the state level to support the implementation and effectiveness of _____policy? (e.g. technical assistance, grants and loans, end market development programs, etc.)

11. What would you suggest should be done to improve stakeholder receptivity to such legislation if proposed in order to improve chances of passage in other states?

12. Any other information to share?

Questions for Local Governments: Disposal Bans, Recycling Policies & PAYT

1. What factors contribute to your city/county achieving high recovery rates for recyclable materials?
 - State policy (disposal ban / recycling policy)
 - Policy enforcement
 - PAYT (if applicable)
 - State recycling grants or other funding
 - Public awareness and education efforts
 - Recycling/recovery target
 - Carts
 - Other

2. What has been your city's experience in working to comply with the state's (ban, mandate and/or PAYT requirement)? Was there anything that the state provided in the way of support that was particularly helpful? Anything that you would recommend that other states do if they are implementing such policies?

3. Do you believe that such policies are effective when enacted at the state level?

4. Why do you think more states haven't done so?

5. What local-level considerations should be kept in mind when developing state-level policy language?

6. What has been various stakeholders' reactions to disposal bans / recycling mandates? PAYT?
 - City solid waste services department
 - Recycling and solid waste service providers
 - Elected officials
 - Waste generators
 - Citizens
 - Local businesses
 - Other

7. For municipalities/counties with disposal bans:
 - What are specific procedures for enforcing compliance with bans?
 - Are procedures established in ordinance or other official documents? *If so obtain citation or copies.*
 - How are affected parties (generators, collectors, etc.) informed about compliance procedures?

- Can you provide any data on banned material diversion before and after the bans were enacted?
- Can you provide overall recycling rates for the banned materials? (Get years, and what is included in the rates eg just residential or ICI as well.)
- Do you have any suggestions for other jurisdictions contemplating disposal bans with regard to how best to implement the policy? What should be avoided?

8. For municipalities with mandates:

- What are specific procedures for enforcing compliance with the mandate? What do they do to prompt or promote compliance?
- Are procedures established in ordinance or other official documents? *If so obtain citation or copies.*
- How are affected parties (generators, collectors, etc.) informed about compliance procedures?
- Do you have any suggestions for other jurisdictions contemplating mandates with regard to how best to implement the policy? What should be avoided?

9. For municipalities with PAYT:

- What do you feel are the strengths associated with your PAYT program in terms of its ability to increase recycling?
- What stakeholders are most impacted and how? Who was/is opposed or in favor of these mechanisms?

10. Are there any implementation steps that you would recommend to ensure the success of enacting and implementing any of these policies?

11. Any other information to share?