

BEST PRACTICES

FOR STATE RECYCLING MARKET DEVELOPMENT CENTERS



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Introduction: What is a recycling market development center and why are they important?

A state recycling market development center is an agency-led or third-party-led entity or program typically established and funded by state governments focused on facilitating growth within the recycling industry through market development activities, including:

-  Supporting businesses that use recycled materials or are part of the supply chain,
-  Bringing together actors and resources that facilitate collaboration and partnership,
-  Identifying and overcoming technical, logistical, and economic barriers that are inhibiting growth of recycling markets,
-  Providing expertise and decision support tools to drive and coordinate strategies throughout the system, and,
-  Working to achieve positive environmental and economic outcomes.

Recycling market development had a first wave of momentum in the early 1990s. This included a federal strategy initiated by the EPA called “**Recycling Means Business**”- focused on creating jobs through support of recycling businesses. Some of the earliest state-led recycling market development programs were established during this period including programs in North and South Carolina, Minnesota, New York, and Washington.

Following a period of decline, as export markets rapidly developed, domestic recycling market development is again a growing area of interest within federal and state legislatures. Agencies who recognize that the recycling industry can be an effective economic development engine with triple bottom line benefits. With more mature recycling programs nationwide, technological advancement in sorting, processing and conversion, expanded focus on domestic recycling end markets, and strengthening voluntary and mandatory requirements for utilizing recycled content, the conditions are more favorable than ever to support recycling market development.

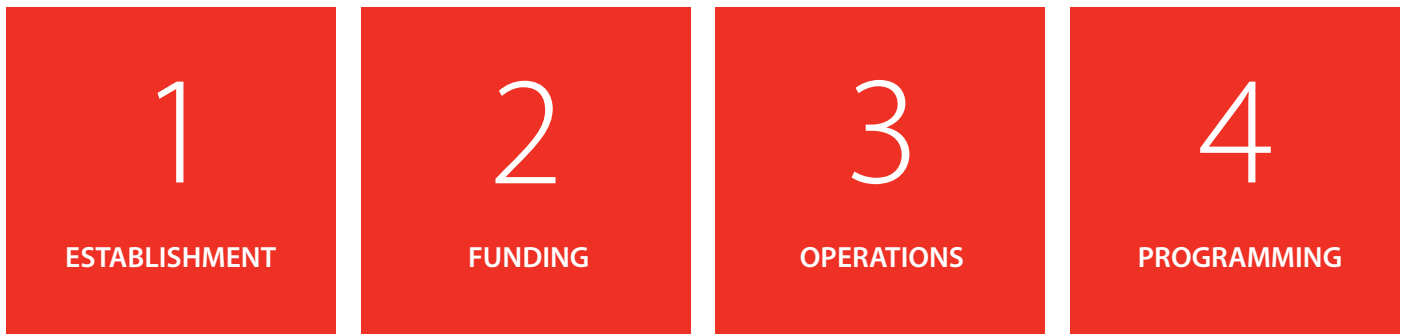
State governments are just one of the many actors driving recycling market development activities. Many stakeholders across the industry and within local governments and NGOs are essential driving forces behind this growing industry.

This guide is intended as a tool to assist state governments and related stakeholders interested in establishing or improving recycling market development centers. It is based on several years of research into existing successful market development centers¹ and programs around the country. This guide outlines best practices and decision points to consider when embarking on that task.

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It is important to note that there is no one-size-fits-all. Every state and region have unique conditions that may lead to a different approach. This guide recognizes that and provides a variety of options for consideration depending on the local context.

There are four primary topics of focus when considering developing (or updating) a state recycling market development center:

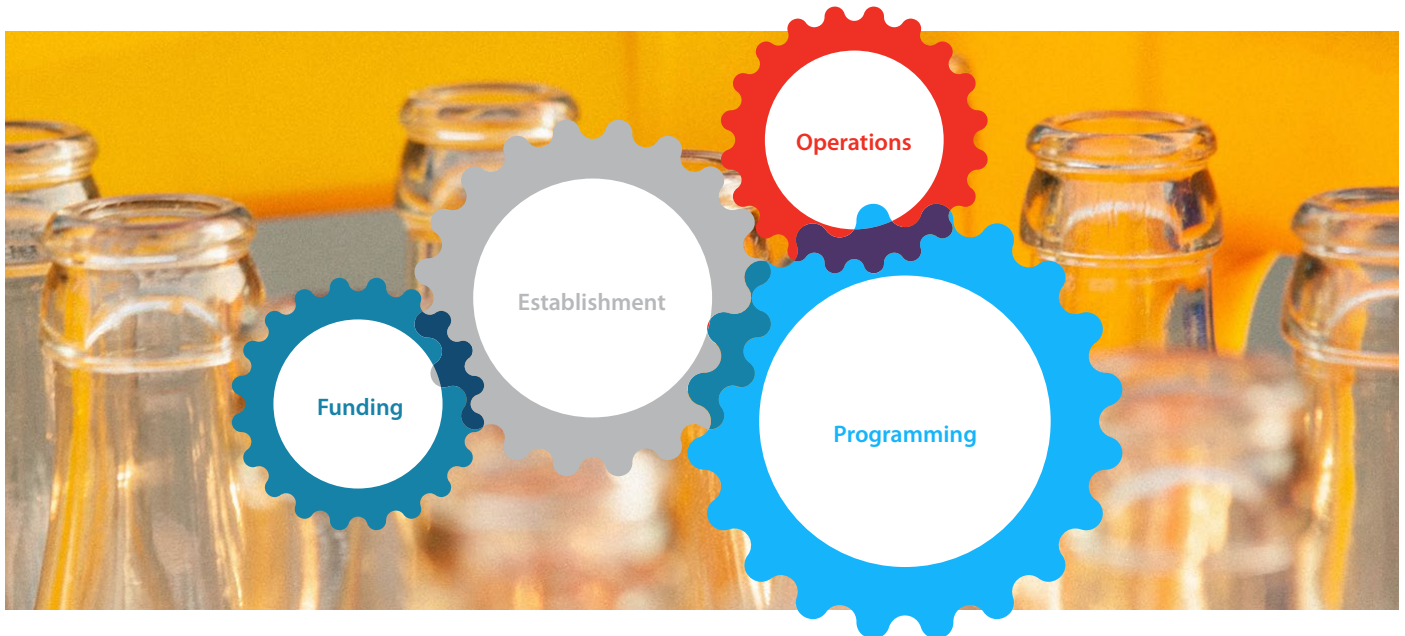


The formal framework and directive of the Center, often established in statute.

The source of funding for operating the Center and implementing programming.

The structure of the Center itself and how it is directed, staffed, and governed.

The tools and resources that the Center utilizes to fulfill its mission.



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1: Establishment

This is an essential first step that includes the gathering of political will and ultimately enacting statutory language that articulates the foundational elements of the Center. Best practices indicate the following three elements as vital to the success.

<p>Pw Political Will</p>	<p>Build political will to support the establishment of a center</p>
<p>St Study/ Stakeholders</p>	<p>Study, plan and engage stakeholders prior to establishment</p>
<p>Es Establish Center</p>	<p>Establish center including high level purpose, process for formation and tie to larger goals</p>

1.1 BUILDING POLITICAL WILL

Many states have successfully built political support around recycling market development. It is easier to get broad support for market development over many other environmental or solid waste policies because it appeals to a broad range of values including both environmental and economic outcomes. The following best practices have been observed by successful programs:

- **Establish a broad base of support.** Having a chorus of stakeholders calling for the need of recycling market development to stimulate and support the recycling system is of value. Stakeholders need to message how without any recycling markets, there is little reason to collect and sort recyclables, as well as where demand exists, and how, with limited markets, the economics of recycling are challenging. This advocacy requires strong leadership and action focused on educating policymakers and state agency leadership by making the economic and environmental case (see points below). An important area of focus is to engage the state and local economic development community. Their support, and the tools and resources that they already offer, are an important compliment to the work of a Recycling Market Development Center.
- **Find champions from within the state government.** It's important to have a champion from within the government. In some cases, such as Washington, the directive came from the Governor's office, who asked the Department of Ecology to develop legislation for introduction to the State Legislature. In other cases, it came from legislators who heard the need from local governments, NGOs, and recycling businesses in their districts.

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- **Make the economic case.** While the environmental impact of recycling, in terms of landfill diversion and greenhouse gas reduction, is a presumed benefit associated with recycling market development, one essential and effective way of developing political will is to highlight the economic opportunities that come with recycling market development. There is clear research demonstrating the impact of these programs on job creation, labor income, capital investment, economic output, and tax revenue potential associated with supporting recycling businesses. Using data to make the case, highlighting the impact that a recycling market development center can have in the state and to local economic development efforts, has been highly effective at generating support from a range of stakeholders across the industry and across the aisles of state capitols.
- **Make the business case.** A growing number of manufacturers and brands of products and packaging have made commitments to use post-consumer recycled content. Sourcing this material on a local level is a consistent barrier to those efforts. Recycling market development centers can play an important role in helping to match supply and demand. Making this point can generate support from these companies.
 - > Institute for Scrap Recycling Industries (ISRI) published a [report](#) on national, state, and local economic impact of the recycling industry and incorporated the data into a publicly available [interactive map and database](#) that can break down the data by state.
 - > The Southeast Recycling Development Council (SERDC) has compiled a list of [Economic Impact Reports on Recycling](#) related to the states in that region.
 - > South Carolina's Department of Health and Environmental Control, and Department of Commerce, published an economic impact [Study](#) of the State's recycling industry in 2006 with a [follow-up](#) in 2014.
 - > The North Carolina Recycling Business Assistance Center in 2020 published a [report](#) on employment trends in the state's recycling industry.
 - > When launching the expansive NextCycle Michigan program and Renew Fund, The State of Michigan Department of Energy Great Lakes and the Environment (EGLE) included a [report](#) on the economic impact and market assessment of increasing the diversion and utilization of recycled commodities in the state.
 - > Annual reports of recycling market development programs and centers, such as the Minnesota Recycling Market Development Program, Pennsylvania Recycling Market Center, and South Carolina Market Development Program, often evaluate success based on both economic and environmental factors.
 - > Southeast Recycling Development Council (SERDC) maintains a [regional recycling demand map](#) including all manufacturers that use recycled content feedstock to make new consumer goods.
 - > [Ameripen study](#) that helps quantify brand goals versus supply.

Some examples of best practice research include:

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- **Expand the case to include a triple bottom line.**

While the economic case bridges both sides of the aisle and is critical, it remains important to highlight environmental and social benefits as well. Historically, the environmental impact has been seen through the lens of landfill diversion and extending the lifespan of a state’s landfill system. More recently, the climate impact of recycling, in terms of greenhouse gas (GHG) avoidance, has become a more common and effective environmental indicator used to generate political support. Lifecycle assessments consistently demonstrate that embodied CO₂ from manufactured goods is lower if those goods incorporate recycled content. This needs to be highlighted and communicated. For example, the NextCycle Michigan **Economic Impact Report** calculates the GHG savings associated with increasing waste diversion and developing recycling supply chains and end markets. The US EPA has a Waste Reduction Model (WARM) **tool** available to the public that calculates economic impacts, impacts related to energy savings, and GHG emission reductions. Aligning circular economy initiatives with climate initiatives is increasingly important for getting and maintaining support.

Emerging trends in Michigan and Washington have the added focus of social equity as a potential outcome of recycling market development efforts. Incorporating an equity lens into this work has further broadened the support for recycling market development from local community-based organizations by framing recycling market development around the potential for expanding social justice opportunities – in terms of recycling access and access to recycling-related business support – to historically underrepresented communities.

The bottom line is that there are many ways that recycling market development appeals to a broad range of stakeholders. Successful programs have been able to build a strong case, backed by data and touted by stakeholders and leaders in government, that investments in recycling market development provide positive triple bottom line returns in terms of environmental, economic, and social outcomes.

1.2 PLANNING AND STAKEHOLDER ENGAGEMENT

Once broad support has been established and champions within state agencies, legislatures and businesses have emerged, there is an opportunity to evaluate the best approach within a given state context by following two best practices:

- **Study successful programs and fit to the local context.** In Colorado (CO 2020 SB 55²), Pennsylvania (PA 2002 HB 2190³), and New Jersey (NJ 2020 S. 3939/3944⁴) the decision to establish a recycling market development center included a bill to study the range of approaches that could be used. In Washington, the Department of Ecology commissioned a **report** outlining different approaches for developing secondary markets for recycled materials in the Pacific Northwest. This data informed the approach for establishing the State’s Recycling Development Center. Presenting the success of other centers by learning about and sharing their stories has proven to be a useful step to organize the right approach to each state’s specific context.

² https://drive.google.com/file/d/1JRfGubQXp4Wnvg9EJL00-y_X3Xf0XK3/view

³ <https://www.legis.state.pa.us/cfdocs/billinfo/billinfo.cfm?year=2001&isind=0&body=H&type=B&bn=2190>

⁴ https://www.njleg.state.nj.us/2018/Bills/54000/3939_11.HTM

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- Engage stakeholders in the framing of the Center to bolster support and seed partnerships.** Continuing to engage stakeholders at this stage reinforces and begins to establish the types of strategic partnerships that will drive the success of the Center once operational. For example, it is very important that the economic development community is engaged from the beginning, including state Departments of Commerce, state, and local economic development offices and local Chambers of Commerce. Even if there is not a full stakeholder process, it is very important to engage these stakeholders early and often. Success will require partnership within that community. Bringing them in to help frame the Center’s approach provides a sense of ownership in the process, increasing likelihood of continued engagement and partnership once it moves towards implementation. Other important stakeholders include local recycling industry leaders, local and state government agencies, State Recycling Organizations (SROs), investors, universities, research centers, and businesses seeking recycled content.
- Legislation should clearly articulate the purpose of the Center and how it should be formed, while avoiding too much specificity.** There are many strategic decisions to be made by the Center that are best left for the implementation process. Limiting the details results in fewer possible conflicts and barriers to getting a bill passed. However, the mission or purpose of the Center should be codified in statute as a guiding beacon, along with the directive for how the Center should be formed and funded and how impact and success should be reported.

While a helpful best practice, this step is not a pre-requisite. Studies and stakeholder engagement efforts require resources and time to complete. In some cases, the most effective path forward may be to leverage strong political will and momentum to establish the Center, leaving the planning, outreach, and engagement to the implementation phase. Successful programs in Michigan, South Carolina, and Minnesota took this type of approach.

1.3 ESTABLISHING THE RECYCLING DEVELOPMENT CENTER

Once the political will is created, options have been studied, and a clear vision has emerged, an important step is to formally establish the Center in statute. Best practices at this stage include the following:

For example, the Colorado stakeholder process in early 2021 resulted in a recommended purpose statement and formation process submitted to the State Legislature that includes a recommended directive for the Department of Public Health and the Environment (CDPHE) to issue a request for proposal (RFP) for an independent third-party organization to establish and operate the Center. This approach follows the Pennsylvania model established nearly two decades prior. The stakeholder group learned about this approach through a series of interactive meetings and found it to be a good fit for their state.

If the approach does not include an RFP, the legislation should specify the entity responsible for forming and operating the Center. For example, Washington and Minnesota Market Development Programs were established through legislation that requires the state environmental agencies to start up and run the Center.

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- **Engage both the environmental agency and commerce agency.** Best practices have demonstrated that collaboration between these two agencies is important for balancing economic and environmental outcomes by pairing recycling system expertise with business development expertise. For example, the Washington Recycling Development Center requires the Department of Ecology to be the lead agency, but also designates the Department of Commerce to have a formal role. This partnership is documented in an interagency agreement between the two agencies. South Carolina's program also includes a collaboration between the Department of Commerce, which runs the program, with the Department of Health and Environmental Control, which funds it.
- **Legislation should be clear that the purpose of the work is end market development.** There is a tendency, and a historical precedent of focus shifting from end markets to supply – e.g., municipal collection programs, where issues around contamination often are prioritized. Clear legislative intent helps ensure focus and define partnerships specifically around recycling market development. This is not to say that supply is not a critical focus for a successful circular economy. For the recycling system and regional circular economies to function, both supply-push and demand-pull strategies are needed. However, the specific focus of recycling market development on a high level should be to create market demand for recycled content. That said, several market development programs were established in broad solid waste management statutes, which include

requirements around both collection/supply and market development/demand. In such cases these are defined as two separate programs under market development.

While legislation establishing the Center is a best practice, there are ways to move forward with market development activities on a state level through existing agency staff. Michigan is a good example of this, where a recycling market development position was established first and additional political will and momentum followed as positive outcomes were demonstrated.

The following policies are examples of successful approaches that have been used to establish State Recycling Market Development Centers through statute.

- State market development center stand-alone establishment (MD 2021 HB 164, MD 2021 SB 116⁵, WA 2019 RCW 70A.240⁶, PA 2002 Municipal Waste Planning and Waste Reduction Act⁷)
- State solid waste management statute inclusive of a market development program (MN Waste Management Act⁸, SC Solid Waste Policy and Management Act⁹)



⁵ <https://legiscan.com/MD/bill/SB116/2021>

⁶ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.240&full=true>

⁷ <https://www.legis.state.pa.us/cfdocs/legis/li/uconsCheck.cfm?yr=2002&sessInd=0&act=175>

⁸ <https://www.pca.state.mn.us/sites/default/files/w-sw1-08.pdf>

⁹ <https://www.scstatehouse.gov/code/t44c096.php>

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2. Funding The Center

Center programs need a protected and sustained source of funding. Those open to budget allocations are at risk of being cut or reduced. Funding is allocated to staffing, overhead and programming. In some cases, programming budgets include direct funding in the form of grants and/or low-interest loans. Best practices include the following three funding elements:

Cf	Establish Core Funding
Dv	Diversifying Funding Sources Where Possible
Fp	Provide Funding Pathways

2.1 ESTABLISHING CORE FUNDING

A key barrier to overcome is securing funding for the Center. A best practice is for the state to serve as an anchor to fund the essential operational elements, including key staffing and overhead.

- **The state should provide stable funding over a medium to long-term time horizon**, such as five to ten years with renewal options. Market development takes time and success cannot easily be defined over a short time horizon. It may take five or more years before meaningful outcomes can be achieved when first getting started.

Many of the existing recycling development centers and programs receive all their funding from the state, including Minnesota RMDP, South Carolina RMDP and Washington RDC, while others, such as Pennsylvania RMC

and Michigan NextCycle, receive a majority of funding from the state (see section 2.2). Generally, the funding is generated through solid waste management tip fee surcharges collected by the state or other tax mechanisms, such as a litter tax in the case of Washington. This source of stable, consistent funding should be seen as the base from which to support a Center’s operations and should be protected for the intentional purpose of market development.

- **The range of funding for recycling development centers varies based on the number of staff and whether the funding supports grants and/or other financial support.** On the low-end, annual budgets are around \$300,000 per year for staff consisting of 2-3 full time equivalent (FTE) staff with no grant program. Larger programs operate in the range of \$1,000,000 per year for 7+ FTE, with several examples in between. Programs providing grants or loans will require additional funds on top of that. In Michigan, for example, EGLE plans to distribute over \$8 million in recycling infrastructure and market development grants in 2021. That is budgeted on top of the NextCycle Michigan program, which focuses more on technical assistance and process facilitation.
- **New programs should plan for additional budget in the initial 12-18 months of operations.** Building momentum of the Center is bolstered with initial set-up funds that have additional budget for branding and website development; recruitment of advisors, partners and sponsors; and baseline research into the existing manufacturing base, gaps and opportunities, and economic impact of recycling market development. These tools and resources will provide invaluable strategic guidance and support the mission moving forward.

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2.2 DIVERSIFYING FUNDING SOURCES WHERE POSSIBLE

Some programs, such as Pennsylvania RMC and Michigan NextCycle are structured in a way to incorporate a diverse range of funding sources to supplement state-allocated sources, including private sector sources through sponsorship, grants, or fee for service, and federal funding sources. Colorado intends to incorporate this approach as well.

- **Leveraging private sector dollars and other sources expands the pool of resources and can lead towards greater impact.** With increasing commitments by brands to use recycled content, and the emergence of extended producer responsibility (EPR) programs for recyclables, setting up a structure to allow for private funding could provide many new opportunities in the future. Some examples of private funding include the following:
 - > NextCycle Michigan is designed to generate funds through sponsorship and facilitation of public private partnerships
 - > NERC and SERDC generate revenue through membership fees and conference registration
 - > Pennsylvania provides fee for service consulting and receives grants from other sources

A downside of this approach is the potential to distract from the core mission of the Center. It is always important to balance mission with fundraising activities.

There are also emerging federal funding options in stand-alone and infrastructure budget proposals.

There is also potential for state-based EPR programs to help direct private funding towards market development activities and investments.

The following are examples of funding statutes for recycling market development centers and programs:

- State market development appropriations and funding (2021 FL HB 2533, 2018 Renew Michigan Fund¹⁰)
- Common sources of funding include statewide tip fees / surcharge, solid waste tax and litter taxes. These typically go toward funding a broad range of programs related to solid waste and recycling, including the market development center (RCW 70A.200.140: Waste reduction, recycling, and litter control account— Distribution.¹¹, MN Solid Waste Management Tax¹², PA Recycling and Waste Reduction Act¹³)

2.3 PROVIDING FUNDING PATHWAYS

Funding is not only a barrier for the Center. It is also a key barrier to recycling businesses as they seek to establish themselves or expand operations. Successful Centers provide support for these businesses in their pursuit of funding.

- **Some programs provide direct funding for businesses** that support recycling supply chains and end markets. In this instance, funding for the Center must also include budget for these investments. Michigan, California, and Minnesota, for example, include budgets for grants and/or a low or no-interest revolving loan fund.
- **Beyond direct funding, Centers can provide funding pathways for the businesses that they support.** There are many reasons why a program is unable to provide direct funding, such as statutory restrictions. That is the case in Washington and South Carolina. Even in the states that have direct funding, businesses often require larger investments than the Center can offer. In these scenarios, effective Centers can direct businesses to other sources of funding and can aid in facilitating their pursuit of such funds.

¹⁰ [https://www.legislature.mi.gov/\(S\(210ypwywn4Inotrxat4amist\)\)/mileg.aspx?page=getObject&objectName=mcl-206-51g&highlight=renew%20AND%20michigan%20AND%20recycling](https://www.legislature.mi.gov/(S(210ypwywn4Inotrxat4amist))/mileg.aspx?page=getObject&objectName=mcl-206-51g&highlight=renew%20AND%20michigan%20AND%20recycling)

¹¹ <https://app.leg.wa.gov/rcw/default.aspx?cite=70A.200.140>

¹² <https://www.revisor.mn.gov/statutes/cite/297H>

¹³ <https://www.legis.state.pa.us/WU01/LI/LI/US/HTM/1988/0/0101..HTM>

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3: Operations

Once a Center is established there are several operational aspects to focus on. Best practices indicate the following three elements as vital to the success of the program:

Ld <small>Organizational Lead</small>	State agency or independent third party
Ds <small>Dedicated Staff</small>	Range of staff and budget depending on a program focus, typically \$300k to \$1 million+
Ac <small>Accountability</small>	May be governing or advisory body or board

3.1 ORGANIZATIONAL LEAD

The first operational step is to define the organizational lead. This is something that can be defined in statute, particularly if the lead is defined as an existing state agency. In some situations, such as Pennsylvania, however, the statute indicated that the lead would be selected through an RFP process. There are indications that Colorado will take this approach as well.

The two best practice options for organizational leads are listed below. Both operational models have demonstrated success and could be considered best practices depending on the context:

- **State Managed.** In this approach, the designated state agency hires and houses staff and runs the Center. Current examples vary in terms of which state agency is the lead with the state environmental agency and/or the department of commerce leading the Center.

Though most existing state-managed programs are led by the environmental agencies, some challenges with that approach have led those very agencies

to recommend other options, such as housing within the commerce department or looking into an independent third party if starting from scratch. There are inherent barriers based on the objectives of environmental agencies. Their core mission is protecting the environment through a regulatory approach. Recycling market development does not fit into this general mind set, as it is more focused on business development and support. Many practitioners have accurately pointed out that state commerce departments have more relevant tools and experiences to support recycling market development.

Minnesota, California, and North Carolina programs are housed in the environmental agencies. South Carolina is led by the Department of Commerce. Washington is led by the environmental agency with a requirement for collaboration with the Department of Commerce.

Benefits of a state managed approach include continuity and institutional knowledge within the agency, which can help to secure long term support and buy-in. There are also many tools and existing support staff available within the state that can support the Center’s mission. Even if they are not a lead, having a role for both the environmental and commerce agencies is recommended. Commerce is a link with the business community, which is key for capital investment and infrastructure development, and environmental agencies are the link to local governments, which are the key to collection programs and supply-side dynamics.

Drawbacks of a state managed approach is that agencies are not always as nimble as an independent third party organization.

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- **Independent third-party organization.** In this approach, the statute designates a state agency, typically the environmental agency, to release a Request for Proposal (RFP) for a third party to establish and operate the Center. The successful bidder receives the contract to run the Center.

Pennsylvania RMC is the most notable example of this. There are indicators that Colorado is leaning in this direction. Michigan has a hybrid approach where elements of the market development program, such as grants, are run by the state environmental agency (EGLE), while the technical support accelerator program, NextCycle Michigan, is operated by an independent third-party.

Benefits of an independent organization include a nimbler chain of command allowing for greater adaptation to market conditions and opportunities to raise non-state funding to diversify Center funding options. Drawbacks include less institutional knowledge and less ability to navigate local political structure

3.2 DEDICATED STAFF

This aspect is highly dependent on the type of programming that the Center will be focused on, which is discussed in the following section. Typically, Centers researched for this guide range from 2-7 FTE staff. However, there is no “right” size. It all depends on how big the state is and how expansive the scope of the program is. In some cases, a single staff responsible for recycling market development work who is passionate is a good starting point from which to build. Best practices from a staffing perspective include:

- **Develop strong leadership and outward facing, collaborative culture.** Hiring the right director is important, especially for a new Center. Recycling market development is an entrepreneurial endeavor and requires a strong leader that is outward facing and can recruit effective staff, project partners, recycling businesses to support and, depending on the structure, additional funders. The staff as well needs to buy into this culture and be outward facing, seeking opportunities to bring innovation and partnership into the Center. It is helpful to view the Center like it is a business. The customers include existing end markets within the state looking to expand, existing end markets from out of state that may be interested in expanding, and start-ups looking to establish themselves and grow. The Center alone will not be able to provide direct support for all needs that come up, though the Center should be able to direct anyone that comes in the door towards resources that can meet their needs. This is where a culture of collaboration and partnership pays off, as external partners can fill the gaps in programming elements that the Center may not prioritize internally. More on this topic in the next section.



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- Combine skills in materials management, business, finance, economic development and behavioral science.** Recycling market development requires an interdisciplinary, systems-oriented set of skills. The recycling system includes a range of public and private actors, including individual residents who are generating materials, local governments who are managing collection programs, private businesses who are collecting, sorting, and processing materials and manufacturers and brands who are using the materials as inputs into new products and packaging. There are nuanced policy and regulatory drivers in addition to market drivers that affect the system. Program staff collectively should embody the diverse skill sets and perspective that can understand and

engage with the range of actors and drivers. If it is a small staff the Center should seek partners that with complementary skill sets. These are different skill sets than those needed to manage a recycling program. More entrepreneurial, some research.

- Develop relationships with other market development leaders.** When staffing the Center, bringing in personnel that have existing relationships in the recycling and/or economic development community is a good strategy for establishing a strong network of support. Center staff should also actively network and pursue relationships with market development leaders within the state and among their peers in other states.



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3.3 ADVISING AND ACCOUNTABILITY

It is a best practice to include an advisory board to support the Center's mission. The primary function of an advisory board is to advise on strategy and hold the Center accountable to its mission through a range of stakeholder perspectives. This collective advising body can represent an independent voice that may have more influence than direction coming from a single agency. A secondary, and essential, function is the coordination and collaboration that occurs through the participation of recycling experts from industry, local and state government agencies, businesses, and non-profit organizations. Networking and process facilitation are key programming elements of any Center and advisory boards serve as a core network of cross-sector partners.

There are several different models for forming an advisory body that range from informal to formal, each of which can be seen as successful examples. In general, advisory bodies range from 9-14 advisors.

- **Governor appointed board with decision-making authority.** In this scenario the Center's director executes the program at the direction of the advisory board. All strategic, budget, and staffing decisions require board approval.
- **Advisory body without decision-making authority.** In this scenario the director has final decision-making authority in consultation with the advisory body. The board serves more of an advisory and networking function rather than an oversight body. The board is not required to approve strategic, budget, and staffing decisions.

- **Ad-hoc board focused on specific goals.** In some cases, a board can be engaged around a specific goal rather than having a long-standing role. In Minnesota, for example, this has been done to help determine material focus for the Center.

If the Center is housed in a state agency, the Center is also accountable to oversight by its division lead. If the Center is housed in an independent non-profit corporation, the Center is accountable to its board and any funders that support the program. This typically includes the state as a core funding source.

- A part of accountability is measuring success based on predefined impact metrics. Examples of traditional economic development metrics that have been used to report success by Minnesota, South Carolina, and Pennsylvania, include, but are not limited to:
 - > Number of businesses supported
 - > Number of jobs created,
 - > Amount of revenue generated,
 - > Amount of investment stimulated, and,
 - > Overall economic output.

Impact metrics related to material diversion and other environmental indicators, such as those used in Washington¹⁴ and Michigan, include, but are not limited to:

- > Quantity of material diverted from landfill
- > Increase in the state recycling rate
- > Number of new businesses using recycled content
- > Tons of Co2 equivalent or GHG reductions

¹⁴ https://www.ezview.wa.gov/Portals/_1962/Documents/rdcab/2020-July-GoalsMetricsApproved.pdf

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4: Programming

The following table outlines the range of programming elements that successful Centers have incorporated into their programs.

ECONOMY		PEOPLE		MATERIALS
Economic Development	Business Support	Fostering Partnership	Thought Leadership	System Expertise
Rc Recruitment	Ts Technical Support	Nt Networking	Re Research/Planning	Me Materials
Iv Investment/Grants	In Incubator/Accelerator	Ft Process Facilitation	Pr Policy Recommendations	Sc Supply Chain
Ic Incentives/De-risking	Bs Business Plan Assistance	Ce Community Engagement	Cm Communications	Tc Technologies + processes

Successful Centers demonstrate the following programming best practices:

- Focus on four to five key programming elements and rely on partners to complement those elements.** Not all programs have the resources and staff to focus on all activities. Successful programs will provide referrals to other partners with complementary programming elements to meet the needs of the market.
- Frame all activities around partnership and collaboration.** Recycling markets are complex and involve interactions across the recycling system, which spans public and private organizations and individual behaviors. Establishing a culture of partnership and collaboration allows for cross sector solutions to emerge that can succeed within the complexity of the system.
- Seek regional partnerships.** The flow of recycled commodities does not stop at state lines. While there

are functional reasons to organize Center activities in a state-centered way, a regional approach and perspective helps to ground the efforts in a context that is more reflective of the marketplace. In some regions there are existing regional market development organizations, such as the Northeast Recycling Council (NERC) and the Southeast Recycling Development Council (SERDC). The National Recycling Coalition (NRC) is also a platform for regional coordination. Centers should seek opportunities to engage with peers on a regional and/or national level to share best practices and coordinate efforts to leverage scale and opportunities.

- Find opportunities to incorporate community input and equity considerations.** State recycling market development focuses on local and regional solutions. The current momentum and opportunity exist largely because China and other Asian nations established very strict regulations on the import of recycling commodities. This resulted in a need for more domestic end markets. Ultimately this results in benefits from a long-term resiliency perspective and a local economic development perspective. However, care needs to be taken to ensure that opportunities are equitably distributed and to avoid siting facilities in areas that may have negative community impacts. Engaging local communities as partners will allow for transparency, dialogue, and trust to develop. This can lead to identifying new opportunities previously unexplored. It can also avoid potential opposition by community NGOs and community-based organizations by addressing concerns of new development projects early in the process. This is a new area of focus within the industry with Washington RDC and Michigan NextCycle taking early steps to utilize an equity lens around recycling market development.

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- **Align with clean energy and climate tech strategies.** Many states and investors have growing programs and budgets focused on clean energy and other technology that reduces GHG emissions, motivated by a shift towards a low carbon economy. Utilizing recycled content has inherent benefits by reducing the embodied carbon in products compared to using virgin materials. Successful programs in the future will align circular economy strategies with low carbon strategies and break down silos between economic development around clean energy / climate technology and recycling market development. CalRecycle is doing this with recycling infrastructure grants funded through credits generated through the states' GHG cap and trade system. Michigan NextCycle is seeking ways to communicate the climate benefits of recycling market development.
- **Provide solutions for different stages and scales.** It is important to have a program that can support large businesses seeking to expand, in addition to small start-ups seeking to establish themselves. Short term impact is realized at a greater scale through helping successful businesses expand, while long term stability can be reinforced by supporting a pipeline of businesses that may grow into the large economic development engines of the future.

The following section breaks down the five areas of programming best practices with several examples of each. Again, any given program is likely unable to support the entire range of programming. This section may be helpful for determining where to prioritize internal capacity and where to complement those aims through partnership.

4.1 ECONOMIC DEVELOPMENT

Economic development programming involves taking traditional economic development tools and focusing the lens on recycling end markets. These are a tried-and-true models of development across any given industry. Minnesota, Michigan, South Carolina, and California provide several examples of programming that focus on this approach.

Best practices include:

- **Recruitment**
 - > Recruit businesses that may be operating out of state to move or expand within their borders,
 - > Recruit promising existing markets in the state to scale up and/or expand to other local communities, and,
 - > Direct outreach to the manufacturing sector to identify any operations that can shift production to incorporate recycled content into their products.
- **Capital Investment and Grants**
 - > Low or no-interest loans for recycling equipment and infrastructure,
 - > Recycling infrastructure grants for implementation-ready projects,
 - > Recycling market development grants for earlier stage projects, including market assessments, feasibility studies and proof of concept projects,
 - > Act as a conduit to support access to federal funding opportunities including:
 - **Small Business Innovation Research (SBIR) grants and Small Business Technology Transfer (STTR) programs** which offer competitive grants ranging from \$50,000- \$750,000 for emerging technologies.
 - **The REMADE Institute:** \$50 million in annual investment in manufacturing R&D for transformational technologies that can increase the recovery, reuse, remanufacturing, and recycling of materials, and,
 - > Act as a conduit for private investment, including venture capital, angel investment, impact investment, equity investment and/or philanthropic grants.

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Some programs have pre-existing policies that restrict their ability to invest in private enterprises, which can limit their ability to engage in economic development program elements. In these states, such as Washington, there may be an opportunity to advocate for removal of such restrictions or to develop partnerships with others to provide for private investments.

4.2 BUSINESS SUPPORT

Support for recycling end markets can range from early-stage support for a business in startup mode, to support for growing and scaling a successful business model that has been operating for decades. Support can range from very technical with a focus on engineering, permitting and process design to very basic with a focus on setting up a business and taking the first step towards developing a business model. Pennsylvania RMDC and Michigan NextCycle are good examples of this type of programming. The following are best practices for business support programming:

- **Technical Support**

- > Manufacturing process engineering, optimization, and design,
- > Site design and build out,
- > Navigating regulatory and permitting issues, and,
- > Supply chain analysis.

- **Incubator / Accelerator program**

- > Multi-faceted, intensive support for business start-up and/or scaling,
- > Mentorship and interfacing with industry experts, peers, and potential supply chain-partners,
- > Commercialization, pitch development, and investment support through workshops and one-on-one advisory services, and,
- > Clear pathway to funding for participants.

- **Business Plan Assistance**

- > Strategic planning,
- > Business canvass and sales approach,
- > Revenue model development and validation, and,
- > Business licensing support.

4.3 FOSTERING PARTNERSHIPS

One of the most important functions of a Center is to serve as a platform to connect the disparate pieces of a recycling supply chain and surrounding business ecosystem. The Center should be seen as the hub on the wheel or a one-stop-shop where a recycling end market can come to fulfill their needs. Either the Center can provide direct support or will provide a referral and introduction to others within their network that can. Centers are limited by resources, and a best practice in general is to set priorities for what they can directly support. Partnerships should be sought to fill in gaps for all the other elements that do not fit into the Center's top priorities.

The Center should also provide support for its clients to develop their own networks. This may involve holding events and setting a forum where networking can take place, or it may require more engaged one-on-one support to facilitate a deal or transaction to establish a supply chain partnership, site a new facility, or raise investment for infrastructure development. Key partnerships often include:

- > Economic development agencies, such as small business development centers, and local economic development corporations,
- > Technical support institutions, such as universities, research labs, and state National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership (MEP) Centers,
- > Local governments and community organizations,
- > Local, regional, and national industry experts and trade organizations, and,
- > Other recycling market development specialists.

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Michigan NextCycle, Pennsylvania, and Minnesota are good examples of Centers that focus on partnerships and facilitation. Best practices for fostering partnerships include:

- **Networking**

- > Conferences and other events,
- > Direct referrals and introductions, and,
- > Maintain and continuously update searchable rolodex of organizations engaged in this work as well as manufacturing and supply chain businesses that either generate, process, or utilize secondary materials to assist in making connections for mentorship, partnerships and/or matchmaking along the supply chain.

- **Process Facilitation**

- > Assistance in converting referrals to formal partnerships or arrangements,
- > Support around project development and/or management, and,
- > Drafting or providing contract / agreement templates.

- **Community Engagement**

- > Interfacing between industry and community organizations, and,
- > Public stakeholder involvement.

4.4 THOUGHT LEADERSHIP

Centers should be seen as the experts in this niche. This expertise should be shared and communicated to other stakeholders to help drive statewide strategy and coordinate activities among and between companies, public agencies, and NGOs. The Center may choose to focus on these elements and produce reports, recommendations, and content themselves or they may see themselves as a repository of knowledge with a library of resources that can be shared with their clientele and other interested parties. Michigan NextCycle, Pennsylvania RMDC, South Carolina RMDP and Washington RDC provide good examples of thought leadership.

Best practices include:

- **Research / Planning**

- > Gap analyses – identify materials and/or aspects of the supply chain that are lacking through data collection and analysis.
- > Annual planning – map out strategies and tactics to address the gaps.
- > Feasibility and due diligence of specific business or project proposals.
- > Decision support analytical tools.
- > Develop new reporting tools for waste generators and manufacturers.

- **Policy Recommendations**

- > Develop briefing papers and reports in support of policy recommendations.
- > Educate policymakers and other stakeholders on pros and cons of recycling market-related policies, including funding/budget allocations, postconsumer recycled content requirements and other regulatory considerations.
- > Draft legislative language.
- > Testify in legislative hearings.

- **Communications**

- > Strategy and tactic planning.
- > Specific campaigns.
- > Newsletters, podcasts, social media, webinars, and other forms of outreach.
- > Brand and collateral development.
- > Amplify other related communications.

4.5 SYSTEM EXPERTISE

What makes a Center different than other economic development or business support programs is the myopic focus on recycling markets. This focus requires staff and/or partners to possess the expertise to understand and navigate the recycling system, material recovery and remanufacturing processes, and supply chains. This expertise should be held on a systems level

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within the Center and bolstered in specific areas, such as distinct material streams, through industry and research partners. Local governments can be key partners as well, as they typically have the deepest knowledge about post-consumer collection programs and public education around appropriate recycling behaviors, which is essential to ensure consistent and quality supply of these materials. Likewise, many private sector actors including material recovery facilities (MRFs), reclaimers and mills and product and packaging manufacturers, have expertise utilizing commercial, institutional, and industrial sources. Being able to connect end markets with those who understand the material supply from residential, commercial, and industrial generators can be extremely useful to appropriately match supply and demand, communicate issues around quality and target materials that have strong markets to ensure that appropriate messaging is being communicated.

A key area of focus for several successful programs includes materials marketplaces, where buyers and sellers of secondary materials can meet and engage in transactions. An extension of this approach is the creation of market development zones where there is an intentional partnering of supply with end markets through the provision of tax credits, permitting, and regulatory easing.

Another gap in many states is available data on material supply and demand. Understanding sources and quantities of material generated and potential capacity of end users helps to match suppliers and end-users and identifies where there may be gaps in the supply chain that can be filled through targeted interventions.

- **Materials Expertise**

- > Develop and maintain experts in residence that have in-depth understanding of specific material types, opportunities, and challenges for incorporating recycled content into new products.
- > Feed this knowledge into research, strategic planning, and supply chain connectivity.

- **Supply Chain Connectivity**

- > Develop and maintain a deep understanding of material flows and the recycling supply chain. This comes from experience working in the industry and/or learning from industry experts.
- > Maintain relationships with actors operating along the supply chain. These actors have a lot of the knowledge and expertise required to understand the system and have roles that can facilitate activity along the supply chain.
- > Develop and maintain a database of manufacturers, suppliers, and intermediate processors and make connections and referrals as appropriate.
- > Development of materials marketplace to facilitate transactions.
- > Explore and communicate on issues related to quality, grading, and contamination.

- **Recycling Technologies and Process Expertise**

- > Like technical assistance, but more specific to recycling technologies and processes rather than product manufacturing.
- > Develop and maintain experts in residence with knowledge related to specific recycling equipment, including sorting, processing, conversion, and product manufacturing.
- > Recommendations, referrals and/or support for procurement, design engineering, and operational consulting.

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In the public discourse, we often speak of recycling as an environmental practice but that perspective, while true, fails to account for the significant role recycling provides for manufacturing industries. In using recycled materials, we reduce raw material use, we drive reduced impact of products and we create jobs and opportunities. Recycling market development programs are at the core of these activities. Demand for our recycled materials exceeds available supply in many cases. At AMERIPEN and RRS we believe supporting and advancing market development programs is a key means through which business and government can work together for the mutual environmental and economic gain of all our communities. With this document, it is our hope that we can help encourage more investment into market development and to provide states or regions looking to advance, or expand programs, with a guide towards best practices and necessary considerations.

ABOUT AMERIPEN

AMERIPEN is a coalition of packaging entities dedicated to improving packaging and the environment. It is the only material neutral packaging policy association in the United States and our membership represents the entire packaging supply chain, including materials suppliers, packaging producers, consumer packaged goods companies and end-of-life materials managers. Our Vision is for packaging to be recognized for all its benefits, including preventing waste and driving a circular economy and our Mission is to be the leading voice for the packaging industry, using science to inspire, create and advocate for sustainable solutions for the packaging value chain.

ABOUT RRS

Founded in 1986 and headquartered in Ann Arbor, Michigan, RRS is a sustainability and recycling consulting firm that strives to create a world where resources are managed to maximize economic and social benefit while minimizing environmental harm. The firm has industry professionals, engineers, economists, technical analysts, and communication specialists who share this vision and possess core strengths in materials and recovery, life cycle management, applied sustainable design, and collaborative action development.

www.recycle.com

ABOUT THE AMERIPEN STATE MARKET DEVELOPMENT TASKFORCE

This report was created as a deliverable from the AMERIPEN State Market Development Taskforce. A unique committee

within the trade association that is made up of non-member state market development centers across the U.S., AMERIPEN launched this committee to explore how private businesses could work with state market development centers to advance their missions and to help advance dialogue amongst producers who want to see their packaging recycled and are seeking recycled content. By partnering between those who grow markets and those who seek markets, the Taskforce seeks to expand knowledge and collaboration amongst key stakeholders towards our mutual goal of expanding recycling markets for packaging.

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