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Assessing the Feasibility and Costs of a Zero Waste Study Committee

House bill H.126, “An Act Relating to a Zero Waste Economy,” proposes forming a study committee to issue a request for proposal (RFP) for the creation of a Vermont zero waste plan. The committee will select a winning bidder who will then “provide recommendations, guidelines, and a timeline regarding transition to a 90 percent zero-waste, circular economy by 2050 in Vermont.”¹ This report outlines what other municipalities have done to begin the process of transitioning to a zero waste economy. We focus on municipalities due to the absence of statewide initiatives towards zero waste economies. It is important to note that the unique geography and population distribution in Vermont make it unlike any existing case study of zero waste transitions.

Background on Zero Waste Economies

Communities define zero waste in different ways. The Central Vermont Solid Waste Management District defines zero waste as “simply a ‘no-waste,’ sustainable approach to managing the production and life cycle of goods.”² The state of Connecticut and the cities of Pasadena and Alameda, California, describe it as a philosophy and design framework; the County of Hawai’i describes it as a way of life; the Solid Waste Association of North America describes zero waste as “efforts to reduce solid waste generation to nothing, or as close to nothing as possible.”³

Zero waste in practice focuses on diverting goods from landfills at each point along their life cycle. Efforts center around sustainable product design, citizen awareness, stakeholder activity, and reforming the solid waste management system. They also emphasize recycling and composting initiatives.

A number of communities – most of them municipalities – have attempted to chart a path towards zero waste. The process typically begins with an assessment of the current waste system. Then, a mix of community stakeholders, government officials, agencies, and experts draft a proposal for moving towards zero waste. This push has allowed communities to exchange information and has inspired new efforts to move toward zero waste.

¹ Vermont General Assembly, “H. 126: An Act Relating to a Zero Waste Economy,” 2019, accessed March 7, 2019, <https://legislature.vermont.gov/Documents/2020/Docs/BILLS/H-0126/H-0126%20As%20Introduced.pdf>.

² Central Vermont Solid Waste Management District, “What is Zero Waste?” accessed February 11, 2019, <http://www.cvswwmd.org/zero-waste.html>.

³ United States Environmental Protection Agency, “How Communities Have Defined Zero Waste,” 2017, accessed March 7, 2019, <https://www.epa.gov/transforming-waste-tool/how-communities-have-defined-zero-waste>.

Overview of Vermont's Waste Management System

According to the *2017 Vermont Diversion and Disposal Report*, Vermonters generated 630,851 tons of municipal solid waste in 2017, which was up 7.7 percent from 2016.⁴ This waste is sent to Vermont's only landfill, located in Coventry, Vermont. The state's approach to waste management is complex and decentralized. Currently, there are 29 Solid Waste Management Entities that serve these districts by helping to reduce waste in their communities.⁵

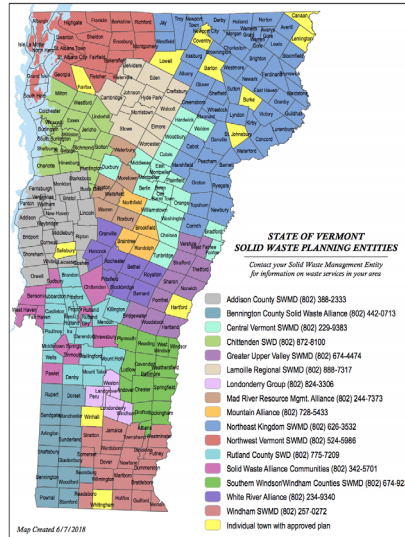


Figure 1. *State of Vermont Solid Waste Planning Entities*

Source: VT Department of Conservation, "Contact Your Waste District or Town," accessed March 7, 2019, <https://dec.vermont.gov/waste-management/solid/local-districts>.

In 2012, Act 148 updated Vermont's waste management laws. Under these updates, the Agency of Natural Resources is required to adopt a solid waste management plan and update it every five years.⁶ The most recent plan, adopted in 2014, set goals to reduce disposal of municipal solid waste by 25 percent by 2019.⁷ Under this plan, the Solid Waste Management Entities are tasked with creating their own individual solid waste implementation plans. The Vermont Department of Conservation conducts waste characterization studies and requires that all waste service providers report their quarterly

⁴ Vermont Waste Management & Prevention Division Solid Waste Management Program, "Vermont Diversion and Disposal Report," December, 2018, accessed March 7, 2019, <https://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/2017%20Diversion%20and%20Disposal%20Report.pdf>.

⁵ VT Department of Conservation, "Contact Your Waste District or Town," Accessed February 8, 2019, <https://dec.vermont.gov/waste-management/solid/local-districts>.

⁶ 10 V.S.A. § 6604.

⁷ Vermont Agency of Natural Resources, "Vermont Materials Management Plan: Moving from Solid Waste Towards Sustainable Management," June 18, 2014, accessed March 7, 2019, https://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/MMP_18June2014.pdf.

quantities of waste disposed.⁸ All this information is readily available to the public and would help in the zero waste planning process.

Zero Waste Case Studies

The three case studies outlined below were chosen because they each demonstrate a unique process for implementing and designing a zero waste plan. The information on these three cities was accessible online, and we were able to get in contact with city officials and consulting groups who worked on their zero waste plans. Boston was chosen for this report because it is in the New England area and their zero waste initiative began recently, in 2015. Fort Collins is highlighted by the U.S. Environmental Protection Agency (EPA) for its ambitious goals and community engagement. Lastly, San José was chosen because it is also highlighted by the EPA for having one of the highest diversion rates in the country (at 74 percent), and for developing an innovative incentive payment system which rewards diversion from landfills.⁹ It is also an example of a municipal department leading the way towards a comprehensive approach to zero waste.

Boston, Massachusetts (Population: 669,158)¹⁰

Boston, Massachusetts recently began work on a municipal campaign towards a zero waste economy for the city. In 2015 the city updated their “Climate Action Plan” to include a strategy to “Make progress toward a waste- and litter-free city” by launching a zero-waste planning process.¹¹ The vision for Boston's zero waste initiative is such that by the year 2022, the city will be a leader in waste reduction and that it will help reach the city's broader goal of becoming carbon neutral by 2050.¹² In May of 2017, the Environment Department of Boston issued a request for proposal (RFP) that suggested the creation of a Zero Waste Advisory Committee (ZWAC) that would be paired with a zero-waste consultant to aid in the process. The committee would be composed of several related department chiefs and members of “residential, commercial, institutional and industrial sectors of Boston.”¹³ The committee would also include two subcommittees: one for the commercial, industrial and institutional sectors and one for the residential sector.¹⁴

⁸ DSM Environmental Services, Inc., “2018 Vermont Waste Characterization Final Report,” December 14, 2018, Report Prepared for Vermont Department of Environmental Conservation, Solid Waste Program, accessed March 7, 2019, <https://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/2018-VT-Waste-Characterization.pdf>.

⁹ United States Environmental Protection Agency, “Zero Waste Case Study: San José,” 2019.

¹⁰ United States Census Bureau, “2017 ACS 5-Year Population Estimate: Boston city, Massachusetts,” accessed March 4, 2018, https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmmk

¹¹ City of Boston, Environment Department, “Request for Proposals Zero Waste Plan Recommendations for the City of Boston,” (Boston: 2017) 1, accessed March 7, 2019, www.bidnet.com/bneattachments?/447551873.pdf.

¹² City of Boston, Zero Waste Advisory Committee, “Meeting #1 Agenda, February 12, 2018,” (Boston: 2018), 1 https://www.boston.gov/sites/default/files/zwac_meeting_packet_0.pdf.

¹³ City of Boston, Environment Department, “Request for Proposals Zero Waste Plan Recommendations for the City of Boston,” 1-2.

¹⁴ City of Boston, Environment Department, “Request for Proposals Zero Waste Plan Recommendations for the City of Boston,” 1.

The Environment Department awarded \$150,000 to Perlmutter Associates to act as the lead consultant to work with the cities Zero Waste Advisory Committee during the planning process.¹⁵ During their first committee meeting on February 12, 2018 Boston’s ZWAC outlined a nine-month timeline of committee progress goals (Figure 2). The city’s goal is that by the ninth month they will have formed a final report for the waste reduction plan.¹⁶

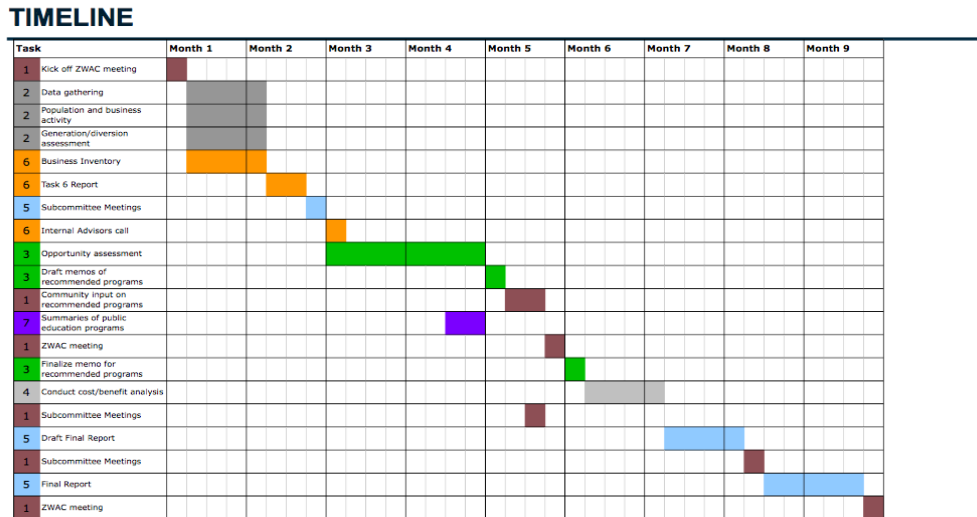


Figure 2. Boston Zero Waste Advisory Committee 9 Month Plan.

Source: Boston Zero Waste Planning, “First Committee Meeting Slides,” February 12, 2018, 11 https://www.boston.gov/sites/default/files/zwac_presentation.pdf.

Amy Perlmutter, the lead consultant for Boston’s zero waste plan, explained that the \$150,000 the city allocated for her services was based on data gathering and studies conducted for the city’s zero waste plan.¹⁷

Fort Collins, Colorado (Population: 159,150)¹⁸

The U.S. Environmental Protection Agency (EPA) identifies Fort Collins as a community that is committed to ambitious zero waste goals. In December of 2013, the city issued an RFP for a Waste Reduction &

¹⁵ City of Boston, Environment Department, “Request for Proposals Zero Waste Plan Recommendations for the City of Boston,” 3.

¹⁶ Boston Zero Waste Planning, “First Committee Meeting Slides,” February 12, 2018, 11, accessed March 7, 2019, https://www.boston.gov/sites/default/files/zwac_presentation.pdf.

¹⁷ Amy Perlmutter, phone conversation with authors, February 8, 2019.

¹⁸ United States Census Bureau, “2017 ACS 5-Year Population Estimate: Fort Collins city, Colorado,” accessed March 4, 2019, https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkml.

Recycling Plan.¹⁹ This plan is now known as the Fort Collins Road to Zero Waste Plan, and it sets goals for the city to divert 90 percent of waste from landfills, and to reduce per capita waste generation to 2.8 pounds per day by 2025.²⁰

Gary Liss and Associates (GLA) is the consulting firm that produced the plan. GLA specializes in drafting zero waste plans and developing waste reduction policies for local governments.²¹ GLA has worked on more zero waste plans than any other consulting group in the United States. According to Susie Gordon, the Environmental Program Manager for the City of Fort Collins, they paid GLA \$35,000 in 2013 for their consulting work on the Road to Zero Waste Plan. This did not include the additional costs to gather data and engage with the public (See Figure 3).

According to Gary Liss, the biggest cost factor for consulting is the availability of waste characterization and composition data. If a state or city already has some of this information, it can expedite the process and reduce the costs to develop a zero waste plan.²²

Sample Zero Waste Plan Budgets by Tasks

Fort Collins, CO Costs by Task (2013)

Task	Total Cost
1. Finalize Scope & Format	\$750
2. Public Involvement	\$11,000
3. Summarize Existing System, Commodity & Service Opportunity Analyses	\$9,050
4. Evaluate and Recommend Policy, Program and Facility Options and Draft Plan	\$20,200
5. Final Plan	\$2,000
6. Project Management	\$2,000
Total Labor	\$45,000
Total Expenses (travel and copying)	\$6,000
Total Project Costs for RFP Scope	\$51,000

Figure 3. *Sample Zero Waste Plan Budgets by Tasks*

Source: Gary Liss, email message to author, February 8, 2019.

¹⁹ City of Fort Collins, “Request for Proposal 7465 Waste Reduction & Recycling Master Plan,” January 2013, accessed, March 7, 2019, [https://www.fcgov.com/zerowaste/pdf/7465-waste-reduction-and-recycling-master-plan-rfp-\(fort-collins-co\).pdf](https://www.fcgov.com/zerowaste/pdf/7465-waste-reduction-and-recycling-master-plan-rfp-(fort-collins-co).pdf).

²⁰ City of Fort Collins, “Road to Zero Waste Plan,” December 2013, accessed March 7, 2019, https://www.fcgov.com/recycling/pdf/RoadtoZeroWasteReport_FINAL.pdf.

²¹ Gary Liss and Associates, “Our Background,” Accessed February 11, 2019, <http://www.garyliss.com/id2.html>.

²² Gary Liss, phone conversation with authors, February 8, 2019.

The Road to Zero Waste Plan was written after a six month process that involved gathering data on the existing waste disposal system, calculating the monetary value of waste, and engaging in public meetings.²³ In 2012, prior to the Road to Zero Waste Plan, the city had a 42 percent waste diversion rate.²⁴ In 2016, they were up to 51.1 percent diversion.

San Jose, California (Population: 1,023,031)²⁵

According to the EPA, “San José is a national leader in waste management.”²⁶ San José began its comprehensive process of developing its strategy to reach zero waste in 2007 by releasing a request for qualifications (RFQ). The RFQ was designed to allow the city to retain the most qualified consultants to develop its plan to reach zero waste; it initially set aside a budget for \$250,000.²⁷ Two contracts were ultimately awarded to R3 Consulting Group, Inc. and HDR Engineering for a total of \$400,000.²⁸ These two firms were instrumental in drafting the city’s Integrated Waste Management (IWM) Zero Waste Strategic Plan.

The city adopted its IWM Zero Waste Strategic Plan in 2008 as part of Mayor Chuck Reed’s broader “Green Vision” for the city.²⁹ The plan sets a timeline for 75 percent diversion from landfills by 2013 and 100 percent diversion by 2022.³⁰

The city’s recycling rate was 73 and 66 percent in 2013 and 2015, respectively.³¹ In 2010, the San José City Council released two RFPs to implement the proposed redesign of the commercial solid waste management collection system that would create an exclusive commercial franchise collection and processing system.³² As a result of this process, Republic Services now collects wet-dry separated material which is processed at their Material Recovery Facility, provides the disposal of residues, and sends organics to composting facilities owned by the Zero Waste Energy Development Company.³³ An

²³ Liss, Gary and Richard Anthony, “Zero Waste Associates Presentation to Community Conversation Fort Collins Waste Reduction & Recycling Plan - Core Ideas On the Road to Zero Waste,” 2015, accessed March 7, 2019, https://www.fcgov.com/recycling/pdf/Fort_Collins_Waste_Reduction_Zero_Waste_Presentation.pdf.

²⁴ City of Fort Collins, “Road to Zero Waste Plan,” December 2013, accessed March 8, 2019, https://www.fcgov.com/recycling/pdf/RoadtoZeroWasteReport_FINAL.pdf.

²⁵ United States Census Bureau, “2017 ACS 5-Year Population Estimate: San Jose city, California”, accessed March 4, 2018, https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk

²⁶ United States Environmental Protection Agency, “Zero Waste Case Study: San José.”

²⁷ City of San José Environmental Services Department, “Request for Qualifications RFQ# 070804 ESD: Consultant Services for Integrated Waste Management (IWM) Zero Waste Plan Development,” (San José: 2007) 5.

²⁸ Lazo, Daniel, City of San José Public Information Representative, email message sent to authors, February 19, 2019.

²⁹ City of San José Environmental Services Department, “Integrated Waste Management Zero Waste Strategic Plan,” (San José: 2008) 2, <https://www.sanjoseca.gov/DocumentCenter/View/1020>.

³⁰ City of San José Environmental Services Department, “Integrated Waste Management Zero Waste Strategic Plan,” 3.

³¹ Kerrie Romanow to City of San José Transportation and Environment Committee, “Status Report on Zero Waste Strategic Plan 2022,” February 15, 2017, http://sanjose.granicus.com/MetaViewer.php?meta_id=619657.

³² City of San José, “Request for Proposal RFP 09-10-27: Commercial Solid Waste and Recyclable Material Collection Franchise Procurement,” (San José: 2010), http://www.bidsync.com/DPXViewer/RFP_4.21.10_FINAL.pdf?ac=auction&auc=933449&rndid=705471&docid=2788090.

³³ United States Environmental Protection Agency, “Zero Waste Case Study: San José.”

innovative incentive payments system rewards contractors for high rates of diversion and incentivizes recycling over landfill disposal.³⁴

San José's Environmental Services Department retained two firms to develop its Zero Waste Strategic Plan through a Request for Qualifications and awarded collection and processing contracts to another two firms by releasing a RFP that detailed the needs identified by the city and consultants.

Costs of Study Committee

In accordance with H.126 and pursuant to 2 V.S.A. § 406, members of the study committee will be entitled to daily compensation at the current rate in effect for members of the general assembly. The bill suggests that the committee be composed of six members who will meet for no more than ten meetings.³⁵ According to 32 V.S.A § 1010, members of committees in the Vermont Legislature are entitled to receive compensation of \$50 per diem.³⁶

Given the desired number of meetings for the potential Zero Waste Study Committee would be no more than ten meetings, the cost of paying six members for 10 sessions per diem was calculated:

6 Committee Members x \$50 per Member = \$300 Spent per Member for Each Meeting

\$300 per Committee Meeting x 10 Committee Meetings = \$3,000 Spent on Committee Meetings

Based on discussions with zero waste consulting experts and case studies of other cities, the lowest cost of hiring a consultant to aid in Vermont's transition to zero waste could be around \$50,000. By adding this cost of hiring an outside consultant to the cost spent for ten committee meetings, a minimum projected cost was calculated \$53,000. It is important to recognize that the cost of hiring consultants can be variable depending on the scope of their assessment and depth of their involvement in the community in question.

Conclusion

The push towards "zero waste" has led communities to devise strategies to meet zero waste targets. Communities define zero waste differently and have planned their transitions to a zero waste economy in a variety of ways. Nonetheless, common themes emerge. Many cities have gone the route of issuing RFQs and RFPs for outside consulting groups to develop their zero waste plans. Costs of consulting have ranged from \$30,000 to \$400,000. At this point in time, there are enough resources available to governments that private consulting is not the only option for developing these plans. The EPA has a tool called "Managing and Transforming Waste Streams – A Tool for Communities." This tool lays out

³⁴ United States Environmental Protection Agency, "Zero Waste Case Study: San José."

³⁵ Vermont General Assembly, "H. 126: An Act Relating to a Zero Waste Economy," 2019, accessed March 7, 2019, <https://legislature.vermont.gov/Documents/2020/Docs/BILLS/H-0126/H-0126%20As%20Introduced.pdf>.

³⁶ State of Vermont, "32 V.S.A § 1010 Members of certain boards," accessed March 7, 2019, <https://legislature.vermont.gov/statutes/section/32/015/01010>.

100 measures that communities can take to reduce waste and divert resources from landfills.³⁷ In addition, the zero waste plans for other cities are all widely available online.

This report was completed on March 7, 2019, by Katherine Cutler, Zach Handelman, and Sebastian Wu under the supervision of VLRS Research Assistant Eric Tucker and VLRS Director, Professor Anthony “Jack” Gierzynski in response to a request from Representative Brian Cina.

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Disclaimer: The material contained in the report does not reflect the official policy of the University of Vermont.

³⁷ United States Environmental Protection Agency, “About the Managing and Transforming Waste Streams Tool,” accessed March 7, 2019, <https://www.epa.gov/transforming-waste-tool/about-managing-and-transforming-waste-streams-tool>.