



Guide 7 Waste

Blue Dot

Municipal Toolkit
Protecting Human Health



Blue Dot Municipal Toolkit

People in Canada take pride in this country's natural landscapes, rich ecosystems and wildlife. But Canada's Constitution doesn't mention environmental rights and responsibilities. Municipalities across the country are recognizing and supporting their residents' right to a healthy environment. By adopting the Blue Dot declaration, more than 150 municipal governments now support the right to clean air and water, safe food, a stable climate and a say in decisions that affect our health and well-being.

For some municipalities, adopting the Blue Dot declaration is a clear statement about environmental initiatives already underway. For others, it's a significant first step. Either way, after passing a declaration, many ask "What happens next?"

This toolkit provides practical ideas for next steps. Its introduction and 13 downloadable guides cover topics related to human health, green communities and a low-carbon future. Written for policy-makers, each guide shares examples of policies and projects undertaken in communities in Canada and around the world. The goal is to inform, inspire and share good ideas and great practices that will lead to healthier, more sustainable communities now and in the future.

The following guides are available:

Introduction to the Blue Dot Municipal Toolkit

Protecting Human Health

- Guide 1: Air quality
- Guide 2: Clean water
- Guide 3: Non-toxic environment
- Guide 4: Healthy food

Creating Green Communities

- Guide 5: Access to green space
- Guide 6: Protecting and restoring biodiversity
- Guide 7: Zero waste

Building a Low Carbon Future

- Guide 8: Transitioning to 100% renewable energy
- Guide 9: Green buildings
- Guide 10: Sustainable transportation
- Guide 11: Green economy
- Guide 12: Climate change adaptation
- Guide 13: Ecological footprint and land use planning

To read more about municipal actions for environmental rights, and to access all the Blue Dot toolkit guides, visit www.bluedot.ca/municipal-toolkits/. To read more about the Blue Dot movement and work at the local, provincial and federal levels, visit www.bluedot.ca.

Ensuring a healthy environment requires action in communities of all sizes and at all levels of government. This toolkit helps municipalities continue to take the lead.

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Creating Green Communities

Guide 7: Waste

What's a zero waste community? Although many communities are increasing their waste diversion, that is only part of sustainable waste management and must be paired with reducing waste production overall ("zero waste"). Decreasing the waste going to landfills and incineration is increasingly important, not only to reduce pressure on existing landfill facilities, but also to limit the formation of potent greenhouse gases such as methane. The examples below highlight communities that have achieved low diversion rates and low non-recyclable waste production per capita. However, communities vary widely in their diversion rate calculations, which makes comparison between them difficult.

Canadian examples of good practices

a. Halifax Regional Municipality

- i. **Background:** Halifax is trying to meet Nova Scotia's provincial target of producing less than 300 kilograms of garbage per capita per year. Under Nova Scotia's solid waste regulations, all recyclable and compostable materials are banned from landfills. Halifax is a member of the National Zero Waste Council, but it has not yet made a zero waste commitment.¹
- ii. **Initiatives:** The municipality's Solid Waste Bylaw S-600 requires source separation at all eligible premises where HRM collects waste, organics and recycling, including single family homes, multi-unit dwellings with six or fewer units, small commercial and industrial buildings and condominiums in designated areas.² HRM collects recycling weekly and compost and garbage biweekly. The city does not provide collection to all multi-family residential or institutional, commercial or industrial facilities, but these non-eligible premises are still required to sort waste because of the provincial landfill bans on recyclables and organics. HRM's Construction and Demolition Material Recycling and Disposal Bylaw L-200 requires all construction and demolition materials brought to an approved C&D disposal facility. At an approved facility, at least 75 per cent of incoming C&D waste must be recycled or diverted.³ The region monitors C&D diversion and inspects highrises and ICIs. It runs a front-end processor and waste stabilization facility to catch unsorted organics and make them inert to reduce odours and pests. The aerobic compost facility produces low-quality compost for landscaping. The municipality's latest initiatives include required source-separation of waste at events, clear bag requirements for curbside collection and grass clipping curbside collection bans.⁴
- iii. **Results:** The waste diversion rate in 2011/12 was 61 per cent (66 per cent commercial and 52 per cent residential) with 393 kilograms of garbage produced per capita. The residential

1 National Zero Waste Council, "Member Spotlight: Halifax Regional Municipality," 2015, <http://www.nzwc.ca/bulletin/june-2015/9/member-spotlight>.

2 Halifax Regional Municipality, Solid Waste Resource Collection and Disposal Bylaw, 1999, http://www.halifax.ca/legislation/bylaws/hrm/documents/By-LawS-600_000.pdf.

3 Halifax Regional Municipality, "Administrative Order 27: Respecting Materials That Shall Not Be Disposed of in a C&D Disposal Site," 2001, <http://www.halifax.ca/legislation/adminorders/ao027.pdf>.

4 Halifax Regional Municipality Committee of the Whole, Integrated Solid Waste Resource Management Strategy Review-Final Report, 2014, <http://www.halifax.ca/council/agendasc/documents/140114cow3report.pdf>.



diversion rate increased from 5 per cent in 1995 to 52 per cent in 2012. Organics are banned from waste in Nova Scotia with a 93 per cent participation rate in compost source separation in Halifax (the highest in the country).⁵

b. Regional District of Nanaimo

- i. **Initiatives:** RDN is a zero waste community and committed to reach 75 per cent diversion in 2010. RDN has landfill bans on recycled material, commercial organics, clean wood waste and several other materials. RDN banned commercial food waste at the landfill as a way to efficiently capture the community's largest producers of organic waste per location. The district has a partial user pay system through limits on numbers of garbage bags and a system for purchasing tags for extra bag collection. Residential organics are not yet banned from landfills. Curbside collection occurs weekly for organics and biweekly for recycling and garbage. Yard waste is not collected curbside. Organics are not yet collected from multi-family residential buildings. RDN's C&D waste management is based on landfill disposal bans for clean wood waste and other recyclable construction materials. It has a separate waste stream licensing system for facilities outside provincial permitting, such as recycling centres. Food waste processing is done by a contracted facility that produces commercial compost, biodiesel and jet fuel. Landfill gas is collected and sold to BC Hydro with a royalty to RDN.⁶
- ii. **Results:** As of 2013, RDN had achieved a total diversion rate of 68 per cent with an annual per capita disposal rate of 347 kilograms per year (one of the lowest rates in B.C. and across Canada).

c. Metro Vancouver

- i. **Initiatives:** Metro Vancouver was a founding member of the National Zero Waste Council and has made a zero waste commitment. Its midterm goals include achieving a 70 per cent diversion rate by 2015 and 80 per cent by 2020.⁷ It has introduced landfill bans on recyclable materials, food waste and clean wood. The 2015 food waste ban includes penalties for garbage with more than 25 per cent food waste, and a plan to lower this threshold to five per cent in 2016/7. Although collection differs between municipalities, 95 per cent of single family homes in Metro Vancouver have curbside organics collection.⁸ Several municipalities are also using automated collection. The City of Vancouver has its own partial "pay-as-you-throw" system. This includes higher annual fees for larger bins and charges \$2 per bag for additional bags through a sticker program. The district has a

⁵ Ibid.

⁶ Regional District of Nanaimo, Solid Waste Management Plan Review and Update, Maura Walker and Associates Environmental Consultants, 2013, <http://www.rdn.bc.ca/cms/wpattachments/wplD224etID5946.pdf>.

⁷ Metro Vancouver, Biennial Progress Report: Integrated Solid Waste and Resource Management Plan, 2013, <http://www.metrovancouver.org/services/solid-waste/SolidWastePublications/ISWRMPBiennialProgressReport-October2013.pdf>.

⁸ Metro Vancouver, "About Food Scraps Recycling," 2016, <http://www.metrovancouver.org/services/solid-waste/food-scraps-recycling/background-implementation/Pages/default.aspx>.



plan to expand waste-to-energy incineration facilities.⁹ Organics facilities vary between municipalities, but several send waste to Harvest Power, which uses anaerobic digestion and composting to create energy and compost.¹⁰ Metro Vancouver also has a policy of advocating for extended producer responsibility or producer take-back programs.

- ii. **Results:** In 2013, Metro Vancouver had achieved 60 per cent total diversion (60 per cent residential and 39 per cent ICI) and an annual per capita waste disposal rate of 550 kilograms per capita.¹¹

d. Markham

- i. **Initiatives:** Markham committed to zero waste in 2008, aiming to achieve 80 per cent curbside diversion by 2014. Markham has mandatory source separation of recycling, compost and landfill for all residential properties and mandatory clear plastic bags for garbage collection to increase the likelihood of source separation. Other initiatives include a zero waste schools pilot project, organics collection at more than 2,400 multi-family residential units, and monthly textile collection at multi-family residential buildings.¹² All of Markham's waste goes to the York Region facilities, which produce farm-grade compost and energy.¹³
- ii. **Results:** Markham achieved an 80 per cent diversion rate from single family curbside collection (2014) compared to a 64 per cent diversion rate for the whole York Region (2014).¹⁴ Annual garbage production in Markham was 282 kilograms per capita in 2014.¹⁵

e. Other interesting ideas

- i. Owen Sound, has mandatory recycling and limited waste pickup. All residential garbage is pay-as-you-throw, meaning each bag of garbage costs \$2.50 to have collected. All ICIs are required to recycle through a mandatory bylaw.¹⁶ The city achieved a 58 per cent residential diversion rate in 2013.¹⁷

9 Metro Vancouver, Biennial Progress Report: Integrated Solid Waste and Resource Management Plan.

10 Harvest Power, "Harvest, Fraser Richmond Organics," 2017, http://www.harvestpower.com/locations/bc_richmond/.

11 Metro Vancouver, Recycling and Solid Waste Management 2013 Report, 2014, http://www.metrovancouver.org/services/solid-waste/SolidWastePublications/2013_Solid_Waste_Management_Annual_Summary.pdf.

12 Environmental Issues Committee City of Markham, "The Best of the Best" Markham's Roadmap to 80% Diversion, 2012, [https://www.markham.ca/wps/wcm/connect/markhampublic/4cb8abf1-02ac-4385-b8c2-e8cf47cb5465/FINAL+Waste+Strategy+\(3\).pdf?MOD=AJPERES&CACHEID=4cb8abf1-02ac-4385-b8c2-e8cf47cb5465](https://www.markham.ca/wps/wcm/connect/markhampublic/4cb8abf1-02ac-4385-b8c2-e8cf47cb5465/FINAL+Waste+Strategy+(3).pdf?MOD=AJPERES&CACHEID=4cb8abf1-02ac-4385-b8c2-e8cf47cb5465).

13 Regional Municipality of York, "Compost and Green Bin," York Region, 2015, <http://goo.gl/JJMxk8>.

14 Committee of the Whole York Region, Environmental Services, 2014 Annual Diversion Report and SM4RT Living Integrated Waste Management Master Plan Update, 2015, <http://www.york.ca/wps/wcm/connect/yorkpublic/9a2a7ffb-ff1c-4ee9-a3a5-b72e822fa689/may+14+diversion.pdf?MOD=AJPERES>.

15 Ibid.

16 Corporation of the City of Owen Sound, By-Law No. 2006-001, A By-Law to Regulate the Collection, Handling and Recycling of Waste and Recyclable Material in Certain Premises in the City of Owen Sound, 2006, <https://www.owensound.ca/en/resourcesGeneral/Documents/2006-001-Mandatory-Recycling-By-law-CONSOLIDATED.pdf>.

17 Resource Productivity and Recovery Authority, "2013 Diversion Rates Sorted By Muni Groupings," Municipal Datacall, 2017, <http://www.rpra.ca/Library/WDO-Historical/Municipal-Information/Residential-GAP-Diversion-Rates>.



- ii. The Columbia Shuswap landfill gas and leachate capture program now provides electricity to 500 homes. Captured landfill leachate is treated through phytoremediation in a poplar tree plantation.¹⁸ Sales of carbon credits and methane are expected to cover project costs in 15 years.¹⁹
- iii. Toronto has a volume-based pay-as-you-throw system. It's also trying new policies to increase source separation in multi-family residences through organic waste collection and a chute closure program. Closing garbage chutes is predicted to increase recycling rates.²⁰
- iv. In 2007, Leaf Rapids, Man. became the first community in Canada to ban plastic bags. The town put its ban in a bylaw, which prohibited the sale or giving away of single-use plastic shopping bags by retailers.²¹

International examples of good practices

f. San Francisco

- i. **Initiatives:** San Francisco committed to sending zero waste to the landfill or incineration by 2020.²² The city has mandatory source separation of compost, recyclables and garbage.²³ The city has different charges for garbage collection based on the size and type of the bin for residential waste.²⁴ Commercial waste can get discounts of up to 75 per cent for achieving waste diversion targets.²⁵

The city also prohibits Styrofoam food servicing packaging. It requires retail outlets to provide compostable, recyclable paper or reusable bags for a minimum of 10 cents. Its policies require minimal city waste production.²⁶ C&D waste must be transported to a registered facility that can divert and process it with a minimum 65 per cent diversion of material.²⁷ Facility-produced compost is sold to local farmers. The city does not incinerate any waste.

18 Federation of Canadian Municipalities, "The Capture and Beneficial Use of Landfill Gas and Leachate at the Salmon Arm Landfill," FCM Sustainable Community Awards 2012, 2012, https://www.fcm.ca/Documents/case-studies/GMF/2012/SCAwards_2012_WASTE_Shuswap_EN.pdf.

19 Province of BC, "Columbia Shuswap Regional District Landfill Methane Gas Capture," BC Climate Action Toolkit, 2017, <http://www.toolkit.bc.ca/Success-Story/Columbia-Shuswap-Regional-District-Landfill-Methane-Gas-Capture>.

20 City of Toronto, "Building Management," Recycling, Organics & Garbage, 2017, <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=e54c433112b02410VgnVCM10000071d60f89RCRD#building>.

21 Bond Ryan, "Banning Plastic Bags and Building Environmental Awareness," Innovative Strategies: Ideas for Sustainable Communities, June 2008, http://www.civicgovernance.ca/wordpress/wp-content/uploads/Innovative_Strategies_Plastic_Bag_article.pdf.

22 SF Environment, "Resolution Setting Zero Waste Date."

23 City and County of San Francisco, Ordinance No. 100-09, Mandatory Recycling and Composting, 2009, https://sfenvironment.org/sites/default/files/policy/sfe_zw_sf_mandatory_recycling_composting_ord_100-09.pdf.

24 Recology, "Rates," 2017, <https://www.recology.com/recology-san-francisco/rates/>.

25 Ibid.

26 SF Environment, "Legislation," Zero Waste, 2017, <http://www.sfenvironment.org/zero-waste/overview/legislation>.

27 City and County of San Francisco, Ordinance No. 27-06, Construction and Demolition Debris Recovery Program, 2006, http://www.sfenvironment.org/sites/default/files/editor-uploads/zero_waste/pdf/sfe_zw_c_and_d_information.pdf.



- ii. **Results:** The total diversion rate achieved was 80 per cent in 2012 with 440 kilograms per capita of garbage generated. San Francisco has been critiqued for using a different method to calculate diversion rate; it may have a standard diversion rate closer to 60 per cent which is still high.²⁸

g. Ljubljana, Slovenia

- i. **Background:** Slovenia has mandatory national source separation. Ljubljana was the 2016 European Green Capital.
- ii. **Initiatives:** In 2014, Ljubljana became the first European capital to commit to zero waste Commitment. Its short-term goal is to achieve 78 per cent diversion and 60 kilograms of garbage per capita by 2025. Garbage is collected every three weeks for low-density housing and once a week in high-density housing. Compost and recycling are collected more frequently to encourage greater source separation. The city has started underground waste collection in the city centre.²⁹ The city chose to expand a regional waste management centre to recover material, capture leachate and produce inert solid fuel rather than build a waste-to-energy plant.³⁰
- iii. **Results:** The city had a diversion rate of 61 per cent and annual waste generation rate of 125 kilograms of garbage per capita in 2014.³¹

h. Treviso and Priula Districts, Italy

- i. **Background:** These two Italian districts' waste management programs are run by Contarina, a publicly owned company.
- ii. **Initiatives:** The districts committed to zero waste with an interim goal of achieving 96.7 per cent diversion by 2022. Contarina collects five or six streams from the curbside, including non-recyclable dry waste, food waste, garden waste, paper/cardboard, glass and plastic/tin. Collection occurs from single-family, multi-family and commercial premises. Collection frequency is based on importance from food waste (most important) to garbage/non-recyclable dry waste (least important). The districts have a pay-as-you-throw system — a 60 per cent fixed fee and 40 per cent variable fee based on the number of times the garbage can is emptied throughout the year. Households with home composting are eligible for reduced garbage collection fees. The material recovery and biological treatment facility prioritizes material recovery before disposal of residual waste in landfill.³²

28 Samantha McBride, "San Francisco's Famous 80% Waste Diversion Rate: Anatomy of an Exemplar," Discard Studies, 2013, <http://discardstudies.com/2013/12/06/san-franciscos-famous-80-waste-diversion-rate-anatomy-of-an-exemplar/>.

29 Erika Oblak, Case Study 5-The Story of Ljubljana, 2017, <https://www.zerowasteeurope.eu/downloads/case-study-5-ljubljana/>.

30 Ljubljana Regional Waste Management Centre, 2017, <http://www.greenljubljana.com/funfacts/ljubljana-regional-waste-management-centre>.

31 Oblak, Case Study 5-The Story of Ljubljana.

32 Simon, Case Study 4-The Story of Contarina, 2017, <https://www.zerowasteeurope.eu/downloads/case-study-4-the-story-of-contarina/>.



iii. **Results:** The districts achieved 85 per cent diversion and 53 kilograms of garbage per capita in 2014.³³

Good practices documents and links

- o [Getting to 50% and beyond](#) — provides examples of urban and rural Canadian municipalities who have achieved high diversion rates
- o [Solid Waste as a Resource: Review of Waste Policies](#)
- o [Multi-Family Diversion Program Best Practices](#) — from the City of Calgary

³³ Ibid.



Advisory services

The **Natural Step Canada (TNSC)** is a national charity whose mission is to tackle climate change and accelerate the transition to a truly sustainable society that thrives within nature's limits. Its academy, advisory services and Sustainability Transition Labs use best-in-class science, systems thinking and facilitation to help individuals and organizations collaborate, solve complex problems, foster innovation, optimize performance and drive systems change.

TNS Canada offers a **Service Cycle for Sustainable Communities** to help municipal governments plan for long-term sustainability and resiliency, embed sustainability into their culture and operations, and engage community stakeholders in their sustainability plans.

To learn more go to: <http://naturalstep.ca/>

The **Whistler Centre for Sustainability (WCS)** is a non-profit organization with the mission to "inspire and facilitate effective planning and meaningful conversations for a better world." WCS provides innovative community engagement, planning and implementation services to local governments across Canada, drawing on its expertise and experience in more than 40 communities. The Centre's work is rooted in future-focused social, environmental and economic values, so that final deliverables embed sustainability throughout.

To learn more go to: <http://whistlercentre.ca>