



DISTRICT OF WEST VANCOUVER
750 17TH STREET, WEST VANCOUVER BC V7V 3T3

12.1

COUNCIL REPORT

| | |
|----------|--|
| Date: | February 1, 2018 |
| From: | Emily Willobee, Policy and Programs Planner |
| Subject: | 2017 Horseshoe Bay Streetscape Recycling Pilot Results |
| File: | 1776-01 |

RECOMMENDATION

That the report dated February 1, 2018 titled “2017 Horseshoe Bay Streetscape Recycling Pilot Results,” be received for information.

1.0 Purpose

The one-year streetscape recycling pilot in Horseshoe Bay has been completed with successful results, and staff is developing a plan to expand this service to additional commercial areas of West Vancouver.

This report summarizes the pilot results and provides information about plans to extend and expand public realm streetscape recycling opportunities.

2.0 Legislation/Bylaw/Policy

In April 2009, Council endorsed Metro Vancouver’s (MV) Zero Waste Challenge and the 70 per cent target for diversion of waste from disposal.

In November 2010, Council endorsed MV’s Integrated Solid Waste and Resource Management Plan (ISWRMP), which specifies an overall waste diversion target of 70 per cent by 2015 and an aspirational target of 80 per cent by 2020. To achieve these targets, the ISWRMP includes objectives to enhance source-separated recycling opportunities at special events and in public spaces, such as civic buildings, parks and streetscapes.

3.0 Background

Beginning in 2016, Council consolidated all municipal solid waste collection activities under the Solid Waste Utility. Through the Solid Waste Utility, the District maintains full influence for waste and recycling collection for the following areas: single family residential collection (SF), civic buildings, special events and parks & streetscape. These services are funded entirely by fees on quarterly residential utility bills.

At home, West Vancouver residents demonstrate excellent commitment to recycling and diverted approximately 75 per cent of waste from the landfill into recycling or the Green Can in 2016.

In recent years, the District has improved recycling in civic buildings and at major special events, such as Community Day. Recycling is not typically provided in District parks and streetscape locations (outside of the Horseshoe Bay pilot area). The District has historically been hesitant to provide public recycling bins on the streetscape or in parks because, in practice, it can be very difficult to ensure that materials collected in these bins can be properly recycled due to contamination.

Contamination is a key challenge of any recycling program. Contamination occurs when items are incorrectly sorted, meaning that non-recyclable items are placed in a recycling bin or recyclable items are sorted into the incorrect bin. Contamination is especially challenging in outdoor public locations such as parks and streetscapes. Research shows that people are less likely to sort materials correctly when in public places than they are at home. When contamination in a recycling bin is high, then all materials in the bin - even the items people have correctly sorted - may need to be disposed as garbage instead of recycled.

Yet there is an increasing public expectation to see improved opportunities to recycle in public spaces, thanks in part to the success of our residential programs, even though waste from parks and streetscape is a very small proportion of the overall waste generated in West Vancouver (only 189 tonnes of material compared to 11,633 tonnes collected in the single family program).

In 2017, staff launched a pilot project to test streetscape recycling in Horseshoe Bay Village. This report summarizes the pilot results, and provides information about plans to extend and expand streetscape recycling opportunities in the future.

3.1 Previous Decisions

At the December 7, 2015 Council meeting Council passed the following motion to reflect consolidation of all District refuse activities within the Solid Waste Utility:

THAT proposed "Solid Waste Utility Bylaw No. 4740, 2012, Amendment Bylaw No. 4863, 2015" be adopted.

At the December 5, 2016 Council meeting Council passed the following motion approving funding to launch a streetscape recycling pilot in 2017:

THAT proposed "Solid Waste Utility Bylaw No. 4740, 2012, Amendment Bylaw No. 4923, 2016" be adopted.

At the December 4, 2017 Council meeting Council passed the following motion to change to the 2017 rate structure of the Solid Waste Utility, including budget provisions that allow expansion of streetscape recycling initiatives pending success in the Horseshoe Bay pilot:

THAT proposed "Solid Waste Utility Bylaw No. 4740, 2012, Amendment Bylaw No. 4954, 2017" be adopted.

3.2 History

The Horseshoe Bay Streetscape Recycling Pilot ran from January to December 31, 2017. Key objectives of the pilot were to:

1. Test potential to divert streetscape waste from garbage into paper or containers recycling streams, with material clean enough to be processed as recycling.
2. Understand the resource requirements for streetscape recycling.
3. Identify operational challenges and considerations of initiating an expanded streetscape recycling program.

The pilot was launched in January 2017 in partnership with local businesses and supported by outreach and education materials. Staff worked with a consultant, Dillon Consulting, to monitor and document the pilot findings.

During the pilot, 17 existing streetscape garbage containers were replaced by 8 Envirozone Hazelton 3-stream recycling stations collecting paper recycling, container recycling and garbage separately. The 3-stream units were capable of collecting a slightly larger overall volume of materials than garbage cans alone.

The pilot is now complete. All 3-stream recycling stations remain in place and materials in the recycling streams continue to be collected and processed as recycling.

4.0 Analysis

4.1 Discussion

The one-year streetscape recycling pilot in Horseshoe Bay has been completed with successful results and staff are developing a plan to strategically expand this service to additional commercial areas of West Vancouver.

Streetscape Recycling Pilot Objectives and Results

A detailed summary of the pilot findings are provided in a report produced by Dillon Consulting. The highlights are below, and the executive summary is included with this report as **Appendix A**.

Based on experience in other municipalities and advice of Dillon Consulting, staff set two key targets:

1. Capture Rate: divert roughly 50% of waste from the garbage into paper and containers recycling streams.
2. Acceptable Levels of Contamination: achieve a contamination rate of less than 25% in the recycling streams, with no loads of recycling rejected by the recycling processing facility. (This means that recycled materials are clean enough to be successfully processed as recycling, and are not disposed as garbage.)

To monitor diversion and contamination in the recycling units, the consultant conducted a baseline waste audit and four additional audits with support from staff. Audits were dispersed throughout the year to capture seasonal variation in volume and visitor traffic through Horseshoe Bay Village.

The consultant also conducted periodic user interviews to collect feedback from the public and interviewed Parks Operations staff to collect input on operational challenges and opportunities related to the pilot.

Key successes:

During the course of the pilot, 45.7 per cent of waste was captured in the paper (20.2%) and containers (25.5%) streams. The contamination rates averaged 16 per cent for paper and 25 per cent for containers, and no loads of recycling were rejected by the recycling processor. By both key targets, the streetscape recycling pilot performed well.

The pilot results also showed a notable decrease in illegal dumping of bagged household waste, which has been an issue in Horseshoe Bay in the past. Household waste decreased from 43 per cent of waste collected in the baseline audit to an average of 11 per cent after the 3-stream units were installed.

In addition, feedback received from the public and staff through user interviews was overwhelmingly positive.

Key challenges:

Operational:

1. It would be difficult to accommodate expansion of the program with existing vehicles and staff capacity.
2. The Operations Centre is not ideal as a central drop-off location for recycling stream materials due to wildlife and space constraints.
3. It may be best to consider having a private recycling service provider collect and bring streetscape recycling materials to a processor directly in order to avoid these challenges and their expenses (e.g., central drop-off location, new trucks).

Contamination:

As expected, the pilot showed some challenges related to recycling contamination that will require on-going public education and engagement. These are expected to improve with time as people become more accustomed to the program.

Expanding Streetscape Recycling Opportunities

Continuation of the project was factored into the 5 Year Financial Plan and Rates approved by Council in the fall of 2017. The Solid Waste Utility has funding in 2018 to support continued recycling collection in the Horseshoe Bay pilot area, and to begin the process of expanding streetscape recycling to other areas of the District.

The expansion plan will focus on introducing streetscape recycling in other key commercial areas of West Vancouver: Ambleside, Dundarave, the Park Royal transit exchange and the West Vancouver Community Centre site.

At this time, the plan focuses on key commercial areas, not park spaces. Recycling services can also be considered for busy District destination parks in the future, when it is clearer what resources are required to provide recycling services in outdoor public spaces.

Staff anticipate that planning and procurement for program expansion will take the better part of 2018, and are therefore targeting a launch date of spring 2019.

Key next steps in 2018 include:

- procurement of additional 3-stream units (3-4 months, with delivery)
- selecting a private contractor to service expanded program (3-6 months, from RFQ to service contract)
- develop options to recover some costs from businesses that benefit from streetscape waste and recycling collection

The speed of the implementation will be limited by the available budget, and the final costs of implementation. The next steps, particularly the latter, will help better refine financial implications for future years. Further financial considerations will be included in the fall as part of the Solid Waste Utility rate discussions.

In the interim, by mid-summer 2018, staff can deploy three 3-stream recycling bins that are on-hand in storage to strategic locations of West Vancouver. The three additional bins can be serviced using in-house crews and equipment.

Considerations related to Recycle BC

Provincial policy has been shifting responsibility for collecting and recycling Packaging and Printed Paper (PPP) to industry via the recycling Regulation and an Extended Producer Responsibility (EPR) program for PPP that launched in 2014. This shift is reflected most clearly in residential recycling collection programs where the District now receives funding incentives from industry through Recycle BC. The EPR program for PPP has not yet been extended to other waste sectors.

Although PPP materials are abundant in our streetscape recycling program, it remains uncertain how changes to the Provincial recycling regulation related to EPR for PPP initiated in 2014 will effect public realm recycling programs. Staff continue to monitor the situation, advocate for the long-term interests of West Vancouver and other local governments providing these services.

The District continues to work with Metro Vancouver, other local governments and Recycle BC.

4.2 Sustainability

Waste diversion is a key component of local and regional sustainability targets. Although public realm waste makes up a small portion of total waste generated in the District, there is an increasing public expectation to see improved opportunities to recycle in public spaces.

The District is striving to provide residents with additional opportunities to recycle in an efficient and cost effective way.

4.3 Public Engagement and Outreach

The District's Community Engagement Policy was used in planning the launch of the Horseshoe Bay Pilot. Staff engaged with the Horseshoe Bay Business Association and representatives of the Western Residents Association in throughout the pilot planning and launch.

Residents were also engaged before and during the pilot. A sampling of communication materials used in the launch of the pilot are provided in **Appendix B.**

This approach of public and business engagement will be scaled appropriately and replicated as the program expands.

Future discussion related to cost recovery options from businesses that benefit from enhanced streetscape collection will employ the Community Engagement Policy.

4.4 Other Communication, Consultation, and Research

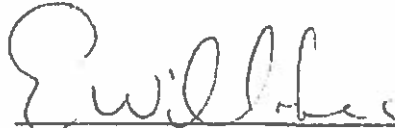
The District continues to work with Metro Vancouver and other municipalities in the region to promote consistent messaging and signage that improves proper sorting of materials for recycling.

Communication materials from the District's Horseshoe Bay pilot (see **Appendix B**) align with industry best practices and have already been shared for use in streetscape programs in other municipalities such as Vancouver, Richmond and the City of North Vancouver.

5.0 Recommendation

- 5.1 That the report dated February 1, 2018 titled "2017 Horseshoe Bay Streetscape Recycling Pilot Results," be received for information.

Author:



Emily Willobee, Policy and Programs Planner

Concurrence



Ian Haras, Parks Planning & Development Manager

Appendices:

- Appendix A:** Executive Summary of Final Report provided by Dillon Consulting
Appendix B: Sampling of Pilot Marketing Materials

This page intentionally left blank



This page intentionally left blank



Executive Summary

Dillon Consulting Limited (Dillon) was retained by the District of West Vancouver (District) to assist with determining the effectiveness of a year-long streetscape waste receptacle pilot occurring in Horseshoe Bay Village. The project entailed the completion of the following activities:

- A baseline waste composition study of existing garbage receptacles (prior to the start of the pilot program);
- Four waste composition studies on pilot receptacles following implementation;
- Three sessions to observe user behaviours;
- Three interview sessions to collect user opinions and feedback; and
- Two staff interview sessions.

The results of this project will assist the District with determining long-term plans for improving recycling in the District's public spaces.

The main objectives of the waste composition studies were as follows:

- Determine waste composition after the installation of new streetscape waste receptacles;
- Estimate the weight of recyclables in a representative streetscape garbage stream;
- Estimate the percent contamination in the recyclables streams;
- Estimate the percentage of waste that can clearly be identified as generated from a fast food establishment;
- Determine if materials not generated along streetscapes continue to be disposed of in streetscape waste receptacles (i.e., household waste); and
- Compare baseline waste composition study and Receptacle Audit 1 to 4 results.

Waste was sorted by stream (garbage, paper and containers) for each receptacle. A team of three Dillon staff sorted each type of waste into six primary categories (compostable materials, paper (PPP), containers (Non-PPP and PPP), RecycleBC depot only recyclable materials, garbage and prohibited items) and their respective sub-categories. Once the initial audit was completed an additional subsort for fast food packaging was completed on all the material collected in all streams. Waste that was clearly identifiable as fast food packaging was subsorted into three categories which included coffee and drink cups, plastic fast food packaging and paper fast food packaging. During Receptacle Audit 4, a count of highly accumulated items (coffee cups, drink cups and refundable beverage containers) was completed.

Overall Pilot Results

Throughout the entire study, 892 kg of waste was sorted by waste stream, by receptacle into 23-subcategories by Dillon staff. Table E-1 provides the weight of material generated within each stream by composition study. It should be noted that the weights in the table are of the total materials that were disposed of in the specified waste stream; therefore, there may be contamination with each stream (i.e., if a pop can was disposed of in the garbage the weight would be captured under garbage).

Table E-1: Overall Waste Generation of all Composition Studies

| Waste Composition Study | Garbage | Paper | Containers | Total |
|--|----------------|---------------|-------------------|---------------|
| Baseline (January 10, 2017) | 115 kg | N/A | N/A | 115 kg |
| Receptacle Audit 1 (February 20, 2017) | 73 kg | 23 kg | 20 kg | 116 kg |
| Receptacle Audit 2 (May 2, 2017) | 68 kg | 24 kg | 44 kg | 136 kg |
| Receptacle Audit 3 (July 18, 2017) | 168 kg | 62 kg | 96 kg | 326 kg |
| Receptacle Audit 4 (November 28, 2017) | 113 kg | 48 kg | 38 kg | 199 kg |
| Total | 537 kg | 157 kg | 198 kg | 892 kg |

Waste diversion rates were calculated for Receptacle Audits 1 through 4 and as a total of all four waste audits. The waste diversion rate is calculated as the total quantity of waste that is diverted for recycling as a function of the total quantity of wastes generated. These results are provided in Table E-2. Diversion rates varied from 38% to 50% with the highest diversion rate occurring during Receptacle Audit 2 (May 2, 2017). Overall, an average of 46% of waste generated between Receptacle Audit 1 and Receptacle Audit 4 was diverted into the proper waste stream.

Table E-2: Overall Waste Diversion Rates for all Composition Studies

| Waste Composition Study | Recyclables (Papers and Containers) | Total Waste (Papers, Containers and Garbage) | % Diverted (Recycled) |
|--------------------------------|--|---|------------------------------|
| Receptacle Audit 1 | 43 kg | 116 kg | 38% |
| Receptacle Audit 2 | 68 kg | 136 kg | 50% |
| Receptacle Audit 3 | 158 kg | 326 kg | 48% |
| Receptacle Audit 4 | 86 kg | 199 kg | 43% |
| Total | 355 kg | 892 kg | 46% |

Household waste was observed during all of the waste composition studies. Bagged household waste represented 4% to 43% of the sample with the highest values being associated with the Baseline Waste Composition Study (January 10, 2017). All composition studies that followed the baseline audit have recorded less household waste. This reduction could be a result of the smaller openings in the pilot receptacles, which may make it more difficult for the public to push a bag of household waste through the opening.

Overall composition of each sample was generally consistent within each of the categories. Compostable materials were typically the majority of the sample and represented 25% to 36% of the overall weight (largely food scraps for all of the composition studies). It should be noted that compostable materials represent a low volume but are a high density. Table E-3 provides the overall breakdown by category for each of the waste composition studies.

Table E-3: Overall Composition by Category for all Composition Studies

| Category | Baseline | Receptacle Audit 1 | Receptacle Audit 2 | Receptacle Audit 3 | Receptacle Audit 4 |
|--|-------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Compostable Materials | 25% | 30% | 36% | 28% | 30% |
| Containers (Non-PPP) | 4% | 8% | 15% | 15% | 8% |
| Containers (PPP) | 12% | 12% | 17% | 17% | 14% |
| Papers (PPP) | 11% | 24% | 20% | 18% | 26% |
| RecycleBC Depot Only Recyclable Materials (PPP) | 4% | 6% | 6% | 8% | 7% |
| Other Prohibited Items | 1% | - | 1% | 1% | - |
| Garbage | 43% | 21% | 4% | 13% | 14% |
| Total | 100% | 101%* | 99%* | 100% | 99%* |

*Numbers do not total 100% due to rounding

An additional subsort of fast food packaging was completed to determine the composition of this type of waste in the overall sample. These materials are a low weight, but high volume material. Note that in order to be classified as fast food packaging the item had to appear to be from a fast food business (e.g., a pop can would not be considered as this could have been generated at home). Fast food packaging represented over 155 kg (18%) of the total audited waste (approximately 110 kg containers and 45 kg of paper packaging). If household waste is factored out of the total audited waste, fast food packaging represented 21% of the audited material.

In addition to the waste composition studies, Dillon staff completed user observations and interviews to gain feedback and knowledge regarding public sentiments and overall usage of the pilot receptacles. Based on the discrete user observations, individuals *are* reading the signage and attempting to separate their waste. Although 73% of users separated their waste, only 61% separated their waste into the correct receptacle. Most of the materials that were not separated correctly were coffee and drink cups. These observations were consistent with the results of the waste composition studies.

Interviews with users indicated the receptacles have been well received and the public are happy to have the opportunity to divert waste in public spaces. Most users liked the signage and look of the receptacle and all users thought it was easy to use. Some recommendations from users included: increasing the number of receptacles provided, including an organics stream and cleaning the receptacles more often.

Recommendations

The following recommendations have been provided to assist the District with long-term plans for improving recycling in the District's public spaces:

- **Large Scale Neighbourhood Pilot Implementation.** The results of the Streetscape Waste Composition Studies, user observations and user and staff interviews have provided the District with a basis from which to consider District-wide implementation of the three stream receptacles. The District should consider a large-scale neighbourhood pilot to determine feasibility of implementing on a full scale and assess costs, anticipated outcomes and collection methods.
- **Continue with Collection Procedure.** Continue with the current collection system until a full scale roll-out as the public is used to the current program.
- **Develop a Receptacle Maintenance Program.** To ensure public perception remains positive and the District has buy-in from the community, a regular maintenance program should be established for the receptacles which includes pressure washing inside and out.
- **Consider Disposal Options.** The District will need to consider and determine where and how each stream will be disposed.
- **Develop an Education and Consultation Plan.** An education and consultation plan allows the District to introduce education for public spaces waste management that would be specific to diverting waste in these receptacles.

Sampling of Horseshoe Bay Streetscape Recycling Pilot Marketing Materials

Transit Shelter Advertisements before launch of pilot.



Letter to Local Residents Announcing Launch

ENGINEERING AND ENVIRONMENT SERVICES
3766 Cypress Bowl Road, West Vancouver B.C. V7S 3E7
T: 604-925-7108 F: 604-925-5928



January 15, 2017

Dear Resident,

RE: Piloting new ways to recycle more in Horseshoe Bay

Horseshoe Bay Village has been chosen as the test site for new **streetside** recycling bins. During 2017, three-stream recycling receptacles will replace traditional garbage cans throughout the village.

At home, West Vancouver residents divert more than 72 per cent of their waste from the landfill by recycling or composting. If successful, this program will help West Vancouver build on the success of our residential recycling program and divert even more materials from the landfill.]

We need your help

The fact is – recycling right in public spaces can be difficult. Recycling bins can easily become contaminated when people place materials in the wrong bin. Heavily contaminated recyclables *could* end up as garbage.

That's why we need your help to make this program successful.

The new colour-coded bins match West Vancouver's residential recycling programs, making it easier to recycle wherever you go. When out in the Village, please familiarize yourself with what goes where and sort your materials.

What Goes Where: (see back for details)

Mixed Paper goes in the Yellow Paper stream,
Containers go in the Blue Containers stream.
Garbage goes in the Black Landfill stream.

Dispose of your household waste through home collection:

Bins in public spaces are provided as a convenience to help prevent litter in your **neighbourhood**. They are not meant for household waste. Please continue to use your residential collection service for your household recycling and garbage.

Give us your feedback on the pilot!

We care what you think. Please email comments on the program to westvancollect@westvancouver.ca or call 604-925-7176.

115831/9/3

Hazelton-3 Bin Wrap Design

