

CITY OF SURREY

**DEMOLITION
AND CONSTRUCTION
WASTE**



GUIDELINES FOR CONTRACTORS AND PROPERTY OWNERS

SALVAGE, REUSE, RECYCLE

Managing Work Site Waste and Recyclable Material

To support the long term environmental health of our community and planet, the City of Surrey has set a target to achieve zero waste. To help reach this goal, we have implemented mandatory waste diversion and materials recycling for demolition and new construction projects. This applies to all buildings and structures, including:

- Single-family residential
- Multi-family
- Commercial

This brochure is a go-to guide for homeowners, contractors, workers, design professionals and building owners to help minimize disposal costs and maximize waste diversion through salvage, reuse and recycling.





BENEFITS OF CONSTRUCTION WASTE DIVERSION & RECYCLING

Feel Good Doing the Right Thing While You Save Money & More

Reduced environmental impact

Through waste reduction and more efficient use of resources, you will be reducing the impact from your project on the environment by:

- Conserving natural resources
- Reducing consumption of energy and water and creating less air pollution, greenhouse gases and solid waste when extracting, transporting and manufacturing virgin materials

Improved savings

Tipping fees for separated recyclables are considerably lower than mixed waste loads. In addition, recycling cardboard and scrap metal should generate revenue. Over the course of a project, these savings can be quite significant.

Enhanced business opportunities

If you are a contractor, achieving high construction waste diversion rates provides a distinct marketing advantage as a growing number of customers are looking for companies using environmentally responsible practices. In addition, companies seeking environmental awards and certification under green building rating systems require an effective construction waste management plan.

NEW

DEMOLITION WASTE DISPOSAL AND RECYCLING BYLAW 19453

► NEW Demolition and New Construction Waste Management Bylaw 19453

To reduce landfill waste and protect our community and the environment, the City of Surrey has introduced a new demolition waste disposal and recycling bylaw to ensure that a minimum of 70 per cent of demolition materials are taken to a licensed recycling facility or reused in accordance with city bylaws.

Additionally, a waste management plan is required for new construction, which will act as a guide to help maximize waste diversion.



Effective July 1, 2018, demolition applications must include a:

- Waste disposal and recycling services plan
- Non-refundable \$250 program administration fee
- Refundable \$5,000 waste diversion deposit
- Waste diversion compliance report (*due within 90 days of project completion*)

The waste disposal and recycling services plan includes an inventory and the estimated weight of the recyclable material present at your demolition site. The compliance report—including records such as receipts, weigh bills, photographs, etc. related to the surveying, removal, handling, management and disposal of waste and recyclable material—will be used to verify your waste diversion percentage. Both can be downloaded at surrey.ca/demowasteplan.

Your \$5,000 waste diversion deposit will be returned in full when 70 per cent or more of your demolition and construction waste is diverted from the landfill. If less than 70 per cent of your waste is diverted, the refund will be adjusted on a sliding scale based on the diversion achieved.

Step-by-Step Process

Apply for demolition permit and submit all applicable fees and deposits

Complete and submit the waste disposal and recycling services plan

During demolition, collect and file all receipts from recycling and disposal facilities to track volumes of waste generated

Complete and submit compliance report, including copies of receipts from all recycling and disposal facilities or signed forms from all salvagers for material reuse

During new construction, implement a waste management plan to maximize diversion of waste and recyclable material through salvage, reuse and recycling. Separate waste and recyclable material, sending residual waste to a disposal facility, and recyclable material to a recycling facility or reuse it for a different application.

DECONSTRUCTION AND SALVAGE

Your site could be home to valuable, reusable building materials. Whether you're ripping out your old kitchen or demolishing existing buildings by knocking them down, sending the resulting waste to the landfill is no longer the most cost-effective or environmentally responsible option.

If there is an existing structure on your site that is slated for demolition, consider:

- Selling or donating a structurally sound structure for reuse at another location
- Disassembling structural and non-structural building components ("deconstruction") to yield a significant amount of valuable, reusable building materials for new construction
- Salvaging valuable, non-structural building components (appliances, doors, hardwood flooring, light fixtures, siding, etc.) for reuse

The following is a list of common deconstruction and salvage materials:

- Dimensional lumber
- Heavy timbers
- Steel beams and studs
- Wainscoting
- Insulation
- Siding
- Heating ducts
- Electrical equipment
- Brick and block
- Light fixtures
- Plumbing fittings
- Faucets
- Interior doors and frames

RECYCLING & WASTE DISPOSAL

What is recyclable and what is banned from landfill?

All recyclable construction materials and site waste must be taken to an approved recycling or disposal facility. Food and yard waste must also be separated from the garbage stream and disposed of as organics.

Recycling facilities: accepted materials

Appliances

Architectural detail elements (*decorative trim, finials, railings, etc.*)

Asphalt

Asphalt roofing shingles

Bricks, blocks, ceramic tile

Cabinetry

Cardboard

Concrete

Doors

Drywall

Fixtures and hardware (*lighting, plumbing, bathtubs, sinks, doorknobs, etc.*)

Glass

Glass windows in frames

Green waste (*shrubs, trees, sod, etc.*)

Metal (*steel, aluminum, coppers, brass, etc.*)

- Metal – cable and wiring
- Metal – window frames
- Paper
- Plastic – ridged (*buckets, pails, etc.*)
- Plastic – soft (*wrapping, bags, etc.*)
- Wood – structural (*including pallets*)
- Wood – plywood, particle board, OSB, etc.
- Wood – shingles/siding (*shakes, etc.*)
- Wood – flooring

WASTE DISPOSAL FACILITIES: BANNED MATERIALS

The following materials are banned from landfills and other waste disposal facilities in Metro Vancouver. A surcharge of 50 per cent of the tipping fee on the entire load will be applied to loads containing any banned recyclable materials. Starting July 2018, a surcharge of 100 per cent of the tipping fee will be applied to loads containing over 20 per cent expanded polystyrene packaging.

Corrugated cardboard	Fluorescent lights
Recyclable paper	Batteries
Expanded polystyrene packaging	Electronic waste <i>(computers, printers and TVs)</i>
Containers made of glass, metal or banned recycled plastic (1, 2, 4 and 5)	Oil, oil filters and empty oil containers
Beverage containers (all except milk cartons)	Lead-acid (car) batteries
Yard trimmings	Medications/ pharmaceuticals
Food waste	Tires
Clean wood	
Gypsum drywall	
Thermostats	

Hazardous Waste

Any hazardous materials must be identified, properly removed, and disposed of by a qualified hazardous materials abatement contractor and managed in accordance with WorkSafe BC.

Asbestos	Siding, pipe insulation, pipe tape, ceiling tile, drywall joint compound, vinyl sheet flooring, vinyl tiles, lag pipe, insulation asbestos board and linoleum
Underground Storage Tanks	Fuel tanks for heating/cooling systems (Look for fill and vent pipes. Should a tank be found during excavation, then work must cease until the tank, its contents and contaminated soils are remediated or removed as required)
PCBs	Fluorescent lighting ballasts, power transformers, generators and other power supply and management equipment
Abandoned Chemicals	Paint, solvents, oils, cleaning products, flammable and combustible substances like gasoline, pesticides, herbicides and medications
Other	Other hazardous materials may include Freon from cooling equipment and mercury switches, etc.

DEMOLITION, NEW CONSTRUCTION AND RENOVATION PROJECTS WASTE GENERATION ESTIMATES

TABLE 1 - ESTIMATING WASTE GENERATION

Material Type - Demolition	Quantity	lbs	kg
Wood - floor (<i>without concrete topping</i>)	1 sq ft	10	4.5
Wood - floor (<i>with concrete topping</i>)	1 sq ft	20	9
Wood - floor (<i>exterior</i>)	1 lin ft	25	11.4
Wood - floor (<i>interior</i>)	1 lin ft	20	9
Wood - roof	1 sq ft	5	2.2
Concrete slab (<i>4" thick</i>)	1 sq ft	50	22.7
Asphalt	1 sq ft	50	22.7
Brick/masonry	1 sq ft	50	22.7
Spread footing (<i>20" wide</i>)	1 lin ft	265	120.5

TABLE 2 - VOLUME TO WEIGHT CONVERSION

Mixed C&D	Quantity	lbs	kg
Mixed C&D (<i>structural</i>)	1 cu yd	500	227.3
Mixed inerts (<i>concrete, brick, dirt, asphalt</i>)	1 cu yd	2000	909.1
Separated inerts	1 cu yd	2000	909.1
Wood	1 cu yd	375	170.5
Metals	1 cu yd	906	411.8
Roofing Materials			
Asphalt shingles/Composition	1 cu yd	419	190.5
Asphalt shingles/Composition	1 sq ft	3	1.4
Asphalt Tar Roofing	1 cu yd	2919	1326.8
Wood Shake/Shingle Roofing	1 cu yd	435	197.7
Wood Shake/Shingle Roofing	1 sq ft	2	0.9
Tiles (<i>concrete roofing</i>)	1 cu yd	10	0.9
Tiles (<i>concrete roofing</i>)	1 sq ft	2900	1318.2
Yard Waste			
Green waste (<i>shrubs, turf, etc.</i>)	1 cu yd	500	227.3
Yard trimmings	1 cu yd	108	49.1

HOW TO GET STARTED

4 easy steps to an effective waste diversion and recycling plan for both new construction and demolition

STEP 1 - Estimate your waste and recyclables

Based on project type and size, estimate how much and what kinds of waste materials will be generated on site using either past waste disposal records from similar projects or the Demolition, New Construction and Renovation Projects Waste Generation Estimates guide.

STEP 2

Determine what can be recycled.

Recycling can represent cost savings in excess of 50 per cent. Decide what type of collection is appropriate for your site and identify your hauling options.

OPTION 1

Source separation: material (e.g. clean wood, cardboard and scrap metal) is separated into bins or piles for pick up by contracted waste hauler.

PROS

- Lower tipping fees at recycling facilities
- Revenue generation for recyclables such as cardboard and scrap metal
- Higher recycling rates and more accurate account of each material recycled

CONS

- Multiple bins on-site
- More sorting required



OPTION 2

Commingled collection: material is collected in one bin and sorted by the recycling facility.

PROS

- Fewer bins required – good for sites with space constraints
- Less sorting required

CONS

- Lower recycling rates
- Higher tipping fees at recycling facilities

OPTIONS FOR SPACE-CONSTRAINED SITES

Target materials at certain phases of construction. For example, place a dedicated wood bin on site during the framing stage to collect the majority of the wood. Then, for the remainder of project, use a commingled bin.

Request a “front-end bin” (instead of a “roll-off bin”) from your waste hauler. These can vary in size from two to eight cubic yards. Front-end bins take up much less space than the usual 40-yard waste containers.

Note: For offsite storage of construction bins (i.e. temporary storage on City streets and lanes), a permit is required.

OPTION 3 - SET UP HAULING

Contracting a hauler to pick up recyclables generated on your site is the most convenient option. Most haulers can recommend the number and size of bins you will require, and might help you set up a job site recycling program.

Ask the following questions when looking for a hauler:

- What recyclable materials do you pick up?
- What are your requirements for separating recyclable materials?
- Do you provide commingled recyclable collection?
- How much contamination is acceptable for different waste streams?
- What type and size of bins do you offer?
- Does your company provide help on how to set up job site recycling and help educate the workers?
- Do you supply signs for recycling bins?
- Can you provide the itemized waybills and invoices which document the type and quantity of materials recycled, and where?



STEP 3

Create a written Waste Disposal and Recycling Services Plan

For demolition projects, complete the City of Surrey Waste Disposal and Recycling Services Plan (download at surrey.ca/demowasteplan). The written guidelines will provide site workers with the necessary information to achieve diversion goals and targets. For new construction, a similar plan can be used. Ensure to include the project's diversion goals, a list of how and where each material will be removed and recycled, and the name(s) and contact information of person(s) responsible for waste management on site. It may also be helpful to include contact information for:

- Waste haulers
- Used building material retailers
- Licensed recycling and disposal facilities

STEP 4

Appoint someone to oversee the recycling efforts

Designate a person who will be responsible for implementing the program and monitoring the site (or for larger projects, this may be a waste management team). This point person/team will be responsible for:

ON SITE SET UP

- Place recycling bins close to where materials are generated.
- Place garbage and recycling bins next to each other to prevent garbage, especially food waste, from ending up in recycling bins.

RECORD KEEPING AND REPORTING

- Collect and file recycling and disposal waybills and invoices for tracking volumes and costs.
- Copies will need to be submitted, along with the Compliance Report to the City within 90 days after project completion to receive the fee refund. i.e.; payment receipts, donation receipts, waybills, inspection reports, clearance letters, sampling reports, waste transport manifests, and recycling verification letters from mixed load recycling facilities detailing the percentage of waste recycled, reused or disposed.



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For more information go to:

www.surrey.ca

