MUNICIPAL MARKET RESEARCH | AUGUST 2026

PET WASTE IN THE LOWER MAINLAND

A municipal risk, service and infrastructure study

Evidence, scale estimates and decision priorities for mayors, councillors and senior municipal administrators across Metro Vancouver and the Fraser Valley.

3.3M+
residents today

Metro Vancouver and FVRD, rounded current figures

330-580K
dogs - scenario range

Planning scenarios; not a licensing count

22-53K t
waste per year

Sensitivity range; 36.5 kt planning case

4.6M+
residents by 2050

Combined regional projections, rounded

THE DECISION CONTEXT

Pet waste sits at the intersection of parks, solid waste, stormwater, wastewater, public health, bylaw enforcement and neighbourhood amenity. The volume is material, but it is rarely measured as a distinct municipal stream. That makes cost, risk and diversion performance difficult to manage.

REPORT PURPOSE

Provide a defensible fact base for municipal discussion - clearly separating sourced facts, local case evidence and transparent planning estimates.

The issue is larger than a park-cleanliness complaint

The evidence points to a measurable material stream, a runoff pathway and an infrastructure gap.

Bottom line: Lower Mainland councils already regulate pet-owner behaviour, but the downstream system remains fragmented. The priority is to measure the stream, separate it at high-volume locations and validate safer, less labour-intensive processing pathways.

3.3M+
regional residents
Current rounded population

36.5K t
planning case / year
About 100 tonnes per day

35 t
Vancouver pilot / year
Seven parks; historic pilot

46+ tons
North Vancouver / 2020
City-reported wording; more than 40 red bins

1 Scale is material

A transparent regional scenario produces 22,000-53,000 tonnes of dog feces per year. The planning case is about 36,500 tonnes - before bags and collection materials.

2 Rain creates a direct pathway

Metro Vancouver states that urban storm sewers typically empty to rivers, creeks or the ocean. Uncollected waste can therefore become non-point-source pollution.

3 The disposal rules do not align

Pet waste is excluded from green bins; only small amounts are accepted in garbage. Large shared sites need a distinct collection and processing approach.

4 Local pilots prove capture is possible

Dedicated red bins achieved low contamination in Vancouver and a sustained city program in North Vancouver. Vancouver also identified manual processing as the constraint.

THE MOST IMPORTANT DATA GAP

No common Lower Mainland dashboard reports dog population, pet-waste complaints, kilograms collected by site, contamination, service labour, processing cost or end destination. Without that baseline, councils cannot compare the full cost of mixed garbage with a separated system, target hot spots or verify diversion claims.

Council implication: Treat pet waste as a cross-department material stream - not only as an animal-control infraction.

Sources: regional population and projections [1]-[4]; pet population [5]-[6]; local programs [15]-[16].

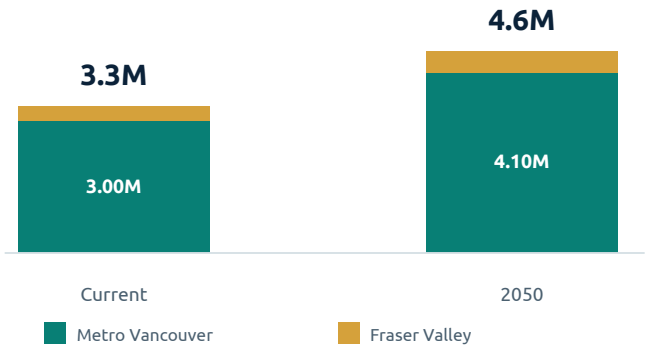
Growth and density increase the municipal exposure

The region is adding residents while more housing and pet activity are concentrated in shared spaces.

Regional population: current vs 2050

Rounded figures in millions

+38% combined



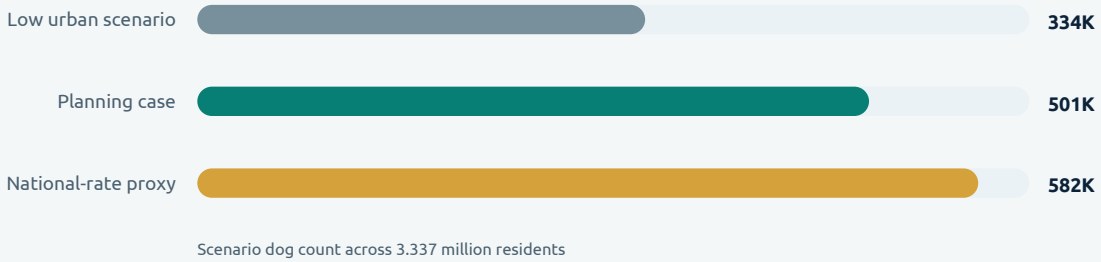
43%

of Metro Vancouver residents lived in apartments in 2021.

Two-thirds of new dwellings placed on the market between 2016 and 2021 were apartments. More pets are therefore likely to rely on sidewalks, strata grounds, trails and municipal parks for daily relief.

Dog population: a planning range, not a false count

Canada reported 7.2 million dogs in 2024, equivalent to 17.4 dogs per 100 residents using Statistics Canada's July 2024 population. Because dense urban ownership may be lower, the study tests three regional rates.



LICENSING IS AN ADMINISTRATIVE FLOOR

Vancouver reported 23,223 dog licences issued from April 2023 to April 2024. That is useful for neighbourhood planning, but it is not a complete regional inventory: unlicensed animals, different renewal practices and municipal data definitions prevent direct aggregation.

23,223

Vancouver licences issued Apr. 2023-Apr. 2024

Planning need: a common regional methodology that reconciles licences, household surveys and site-level capture data.

Sources: Metro Vancouver and FVRD [1]-[4]; CAHI and Statistics Canada [5]-[6]; apartments [7]; Vancouver licences [20].

A planning case of about 100 tonnes per day

The model is deliberately transparent so councils can replace assumptions with local measurements.

500,550	x	0.20 kg	x	365	=	36,540 t
dogs		per dog / day		days		per year

Sensitivity: estimated annual wet fecal mass

Rows test daily output; columns test dogs per 100 residents. Values are thousand tonnes (kt).

	10 dogs / 100	15 dogs / 100	17.4 dogs / 100
0.18 kg/day	21.9 kt	32.9 kt	38.2 kt
0.20 kg/day	24.4 kt	36.5 kt	42.5 kt
0.25 kg/day	30.4 kt	45.7 kt	53.1 kt

The EPA implementation guidance uses 200 grams per dog per day. The 0.18 and 0.25 kg cases are sensitivity bounds, not observed Lower Mainland averages.

73 kg
per dog each year

At 0.20 kg per day

183M
pickup events / year

One event per planning-case dog per day

22-53 kt
regional sensitivity range

Fecal mass only; excludes bags

HOW TO READ THE NUMBER

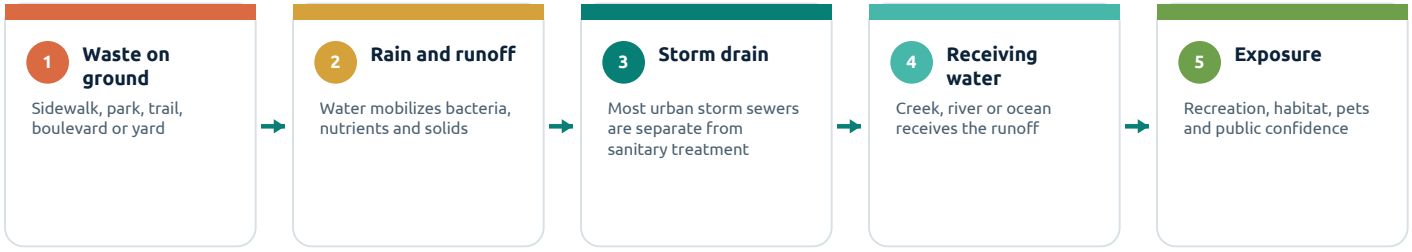
This is an order-of-magnitude market-sizing model, not a claim that all waste enters municipal bins. Some is managed on private property, flushed without bags or collected by private services; some is left on the ground. The municipal burden is driven by where waste is deposited and how it is captured - not only by total biological output.

A 90-day weighing study at representative parks, trails and multi-unit sites would materially improve the estimate.

Model sources: regional population [1]-[2]; dog-rate proxy [5]-[6]; EPA output factor [8]. Calculations by this study.

In urban areas, stormwater can move the problem downstream

Uncollected waste is exposed to rainfall, hard surfaces and direct drainage to receiving waters.



UP TO 23 MILLION

fecal coliform colonies per gram of pet feces

EPA guidance also uses 200 grams of feces per dog per day and notes that improperly disposed waste can wash into storm drains or water bodies and contribute to pathogen impairment.

PATHOGENS

Animal fecal waste can introduce enteric bacteria, viruses and protozoa. Health Canada uses fecal indicators because direct pathogen monitoring is impractical.

NUTRIENTS

Nitrogen and phosphorus can stimulate algae and aquatic weeds; decomposition can consume oxygen needed by fish and other aquatic life.

SOIL CONTACT

CDC identifies dog- and cat-feces-contaminated soil as a route for toxocariasis, with children particularly vulnerable to hand-to-mouth exposure.

SOURCE CAUTION

Elevated E. coli does not prove a canine source. Human sewage, wildlife, agriculture and other animals may also contribute; source tracking is needed.

Sources: Metro Vancouver stormwater [9]; EPA non-point pollution [10] and guidance [8]; Health Canada [11]; CDC [12].

The visible nuisance is only the front end of the cost

Pet waste shifts work and risk across parks, waste, engineering, bylaw, communications and public health functions.

~4M

annual park visits

Pacific Spirit Regional Park; more than half its trails were leash-optional at review

1.42 t

left in parks / week

Calgary empirical estimate during snow-free period; not a local rate

17-40%

not every walk

External behavioural research range; not measured in Lower Mainland

Where the municipal burden lands

Park amenity	Odour, stepping and slipping hazards, turf damage and reduced enjoyment of shared space.	PARKS / FACILITIES
Worker exposure	Bag handling, bin servicing, spills, heat-related odour and manual separation at processing.	OPERATIONS / SAFETY
Runoff and habitat	Bacteria and nutrients can leave the site through storm drainage or direct surface flow.	ENGINEERING / ENVIRONMENT

Why enforcement alone plateaus

Pickup bylaws create a clear duty, but enforcement usually depends on an officer observing the event or receiving usable evidence. Behaviour also changes with distance to bins, bag availability, social norms, darkness, weather and whether a dog is visible to its owner in an off-leash area.

The Calgary study found higher fecal density in off-leash areas and near entrances and parking lots - precisely where service design can be targeted.

A management problem, not a pet problem

Most owners act responsibly. The unresolved burden comes from a small share of missed pickups, high-volume locations and the lack of a standardized downstream stream.

Design response: put infrastructure where behaviour occurs, make the correct action easier, and measure capture by site.

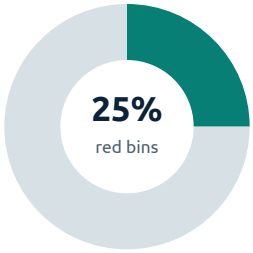
Sources: Pacific Spirit Regional Park [19]; Calgary park study [17]; behavioural research synthesis [18].

Dedicated bins work; processing is the constraint

Two local programs demonstrate capture, diversion and the operational questions councils now need to solve.

CITY OF VANCOUVER | 2016-2024 PILOT

7 parks. 35 tonnes diverted per year.



75% still went to nearby garbage bins

~700 t/yr

implied dog waste thrown away across all city parks

Derived: 35 t / 5%; City did not report this as a separate total

The City reported low contamination. It also found collection and processing highly manual and stated that a larger program would need automation or improved technology, plus expanded regional processing solutions.

Interpretation: source separation was feasible; the bottleneck shifted from the bin to handling and processing.

CITY OF NORTH VANCOUVER | ACTIVE PROGRAM

More than 40 red bins, serviced weekly



The City expanded its 2017 off-leash-park pilot to more than 40 dedicated bins. In 2020, it reported just over 46 tons (City wording) diverted from landfill and transported to the wastewater treatment plant.

Interpretation: a routine, city-scale separated service is operationally possible when collection and treatment access are established.

WHAT THE TWO CASES SAY TO COUNCIL

1. Dedicated bins can achieve low contamination when the stream is clear.
2. Convenience matters: nearby garbage bins still captured most waste at Vancouver pilot sites.
3. The unit of analysis should be the full service chain - bin, route, labour, bag handling, treatment and reporting.
4. The next innovation need is safe, automated or materially less labour-intensive processing at regional scale.

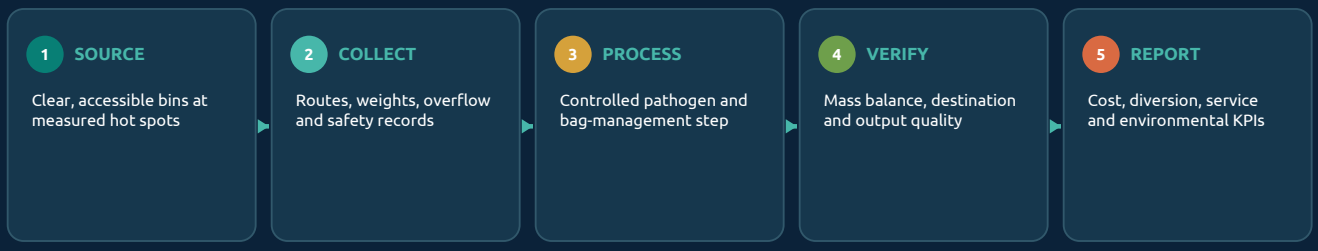
Sources: City of Vancouver dog-waste collection pilot [15]; City of North Vancouver Dog Waste Program [16].

The correct bin is only one component of the system

Municipalities need a defensible chain of custody from point of deposit to treatment and verified output.

PATHWAY	STATUS	CURRENT POSITION	MUNICIPAL TRADE-OFF
Regular garbage	**Common**	Small amounts accepted, preferably double-bagged	Worker exposure, odour and methane; park waste remains hidden in mixed garbage
Green bin / organics	**Excluded**	Pet waste and plastic bags are excluded	Wrong-stream contamination can cause rejection; compostable-labelled bags are also excluded
Separated bins to wastewater	**Demonstrated**	Historic Vancouver pilot; active City of North Vancouver program	Collection logistics and bag separation; Vancouver found processing highly manual
Dedicated processing / recovery	**Emerging**	Potential central treatment and verified outputs	Must validate permits, pathogen control, uptime, throughput, costs and end-market
Home pet-waste composter	**Limited**	Appropriate for some private yards	Not a scalable answer for dense housing, high-use parks or large commercial quantities

A procurement-ready service chain



Market implication: the municipal need is not simply more bags or bins. It is an auditable managed service with worker-safe handling, an approved treatment route, measurable diversion and a credible contingency plan.

Sources: Metro Vancouver disposal guidance [13]-[14]; local separated-collection evidence [15]-[16]; USDA example [24].

A 12-month pilot can convert uncertainty into procurement evidence

The recommended next step is a common baseline and performance test across representative Lower Mainland sites.

Proposed regional pilot sequence

1 **Baseline**
Select 8-12 sites across 2-3 municipalities; audit current bins, complaints and routes.

2 **Separate**
Install consistent, accessible dedicated containers and harmonized public messaging.

3 **Measure**
Weigh by site and route; record contamination, labour minutes, overflow and missed service.

4 **Process**
Test approved treatment and bag-handling pathways under controlled operating conditions.

5 **Compare**
Calculate full cost per kilogram, diversion, worker handling and service reliability.

6 **Decide**
Publish results and define performance-based requirements for any scale-up procurement.

Core performance dashboard

- Kilograms collected per site-week
- Contamination by mass and incident
- Service minutes and vehicle trips
- Cost per kilogram and per site
- Overflow, missed pickup and odour events
- Complaint trend before and during pilot
- Verified destination and diversion rate
- Worker-safety and equipment incidents

Procurement and governance guardrails

PERFORMANCE
Specify outcomes and verified mass balance, not a preferred technology.

REGULATORY
Confirm waste, wastewater, environmental and occupational requirements before scale-up.

SAFETY
Minimize direct handling; require spill, odour, cleaning and contingency procedures.

DATA
Municipalities retain site data, definitions and audit rights.

EQUITY
Place and design bins for mobility, visibility and multilingual comprehension.

WATERSHEDS
Coordinate regionally and engage affected First Nations and watershed partners.

THE COUNCIL QUESTION

Is pet waste being managed as a measured material stream - or is it still hidden inside park garbage, stormwater risk and complaint-driven enforcement?

Pilot framework developed from the evidence reviewed in this study. Regulatory review is required before implementation.

Transparent assumptions, explicit limitations, current sources

This study is designed to support a municipal baseline and pilot - not to substitute for site measurement or regulatory review.

SCOPE
Lower Mainland is defined as Metro Vancouver plus the Fraser Valley Regional District.

DOG COUNT
Three ratios are tested: 10, 15 and 17.4 dogs per 100 residents. The high case equals the 2024 Canadian ratio.

WASTE
Annual wet mass = residents x dog ratio x kg per dog per day x 365. The planning case uses 0.20 kg/day.

BOUNDARIES
Totals exclude bags and urine and do not imply that all waste enters municipal systems or public space.

Source register

Authoritative public sources and peer-reviewed evidence; accessed August 30, 2026. Titles are clickable in the digital PDF.

1. Metro Vancouver. Governance Structure - three million residents and 23 member jurisdictions.
2. Fraser Valley Regional District. Statistics - estimated population 337,000.
3. Metro Vancouver. Regional Planning Bulletin, October 2025 - 4.1 million projected by 2050.
4. FVRD. Fraser Valley Future 2050 - population expected to exceed 500,000.
5. Canadian Animal Health Institute. 2024 Pet Population Survey - 7.2 million dogs.
6. Statistics Canada. Population estimate, July 1, 2024 - 41,288,599.
7. Metro Vancouver. Charging Technology Brief - 43% of residents in apartments in 2021.
8. U.S. EPA. Massachusetts TMDL Implementation Guidance - 200 g/day and up to 23 million fecal coliform colonies/g.
9. Metro Vancouver. Managing Stormwater in Your Yard - storm sewers empty to creeks, rivers or ocean.
10. U.S. EPA. Basic Information about Nonpoint Source Pollution - bacteria and nutrients from pet wastes.
11. Health Canada. Guidelines for Canadian Recreational Water Quality - fecal contamination and indicators.
12. U.S. CDC. About Toxocariasis - transmission through dog- or cat-feces-contaminated soil.
13. Metro Vancouver. Pet Waste - disposal constraints, staff hazards, methane and park visits.
14. Metro Vancouver. What Goes in the Green Bin - pet waste and all plastic bags excluded.
15. City of Vancouver. Dog Waste Collection Pilot - seven parks, 35 tonnes/year and manual-processing findings.
16. City of North Vancouver. Dog Waste Program - 40+ bins and 46+ tons diverted in 2020 (City wording).
17. Mori et al. (2023). Fecal contamination of urban parks by domestic dogs. Scientific Reports.
18. City of Mercer Island (2024). Pet Waste Campaign Behavior Change Report - 17%-40% research range.
19. Metro Vancouver. Pacific Spirit Regional Park Dog Management Review - nearly four million visitors/year.
20. City of Vancouver FOI 2024-226. Dog licences issued by neighbourhood, April 2023-April 2024.
21. City of Surrey. Responsible Pet Ownership - immediate pickup duty and environmental rationale.
22. City of Richmond. Dogs in Parks - stoop-and-scoop and control requirements.
23. Metro Vancouver (2026). Water Quality Monitoring Strategies for Metro Vancouver.
24. U.S. Department of Agriculture. Pet Waste Disposal Systems Help Protect Water Quality.

KEY LIMITATION

There is no standardized Lower Mainland dataset for dog population, public-space deposition, site-level tonnage, contamination, labour or cost. The report therefore uses scenario ranges and labels derived calculations. A municipal pilot should replace assumptions with measured values.

Prepared as a municipal market research study. Figures should be refreshed as new regional data and pilot results become available.