How many people cycle rue de Terrebonne in winter, and how often?

Bicycle counts on four sensors, a frequency distribution, and the survey of the Association des piétons et cyclistes de NDG (APC-NDG) in context

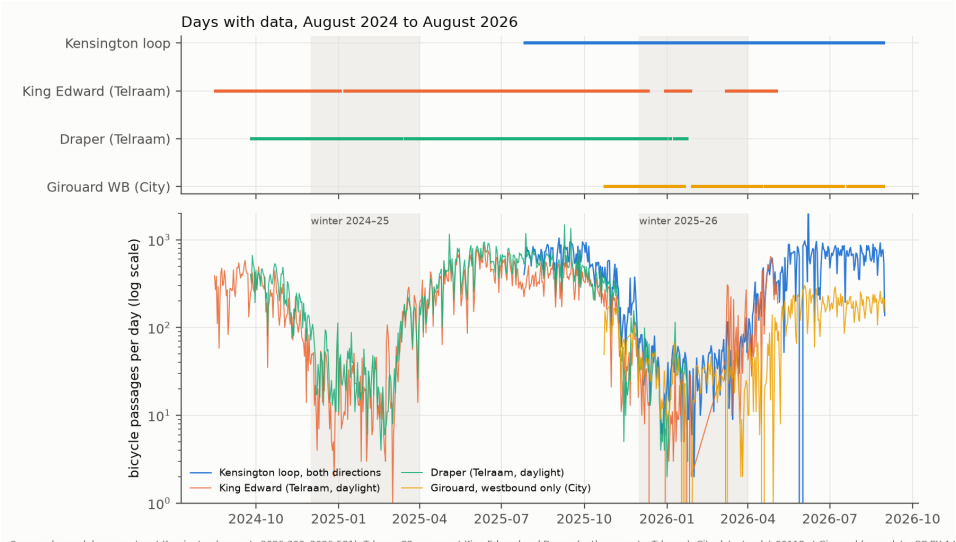
Terrebonne-open-sources (a resident of Côte-des-Neiges–Notre-Dame-de-Grâce)

2026-11-08

Two units

- Counters count **passages**: one bicycle, one point, one direction. The survey counts **people**.
- Exposure and use accrue per passage; representation is counted in persons. Neither converts into the other without an assumption on how often each person rides and whether a trip crosses the point twice.
- Questions: what does the structure of the counts say about frequent and occasional riders? What bounds on individuals follow? How do the survey's 87 winter cyclists (36 at least weekly) sit against the counts?

Four sensors, two winters

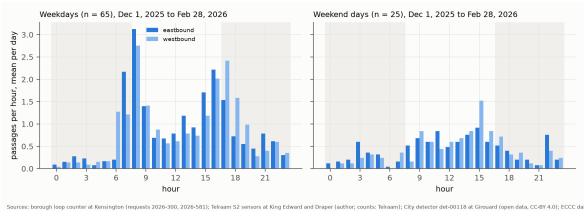


Sources: borough loop counter at Kensington (requests 2026-300, 2026-581); Telraam S2 sensors at King Edward and Draper (author; counts: Telraam); City detector det-00118 at Girouard (open data, CC-BY 4.(

Data and caveats

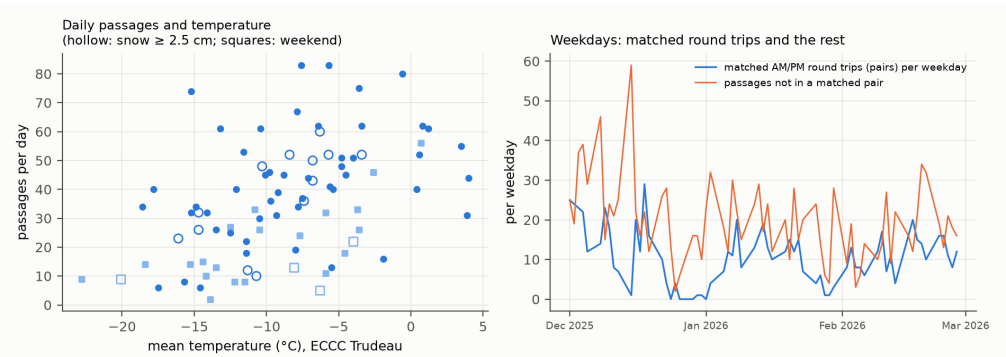
- **Kensington loop** (borough): hourly by direction, Jul 2025–May 2026; westbound channel degraded from March 2026 $\Rightarrow$ core period Dec 1, 2025 – Feb 28, 2026.
- **King Edward** and **Draper** (Telraam S2, the author's): hourly, daylight only, uptime per hour; Draper stopped Jan 24, 2026; counts belong to Telraam, aggregates only.
- **Girouard** (City det-00118): westbound only, from Oct 23, 2025 (open data).
- **Miovision** one-day counts: Sept 19, 2024 and Jan 29, 2025 (requests 2026-581, 2026-634).
- ECCC daily weather; computed sunrise and sunset.

The winter at Kensington, Dec 1 – Feb 28



- 3,232 passages in 90 days; weekdays 41.8 (p10–p90 17–62), weekend 20.5.
- Mild weekdays 50.6, harsh 40.1, holiday 22.0.
- Matched AM/PM round trips: 11.0 per weekday, 53 % of weekday passages.
- 41 % of passages in darkness.
- Dec 1 – Mar 31: 4,891 passages, no day below 2, 60 days $\geq$ 40 (lower bound).

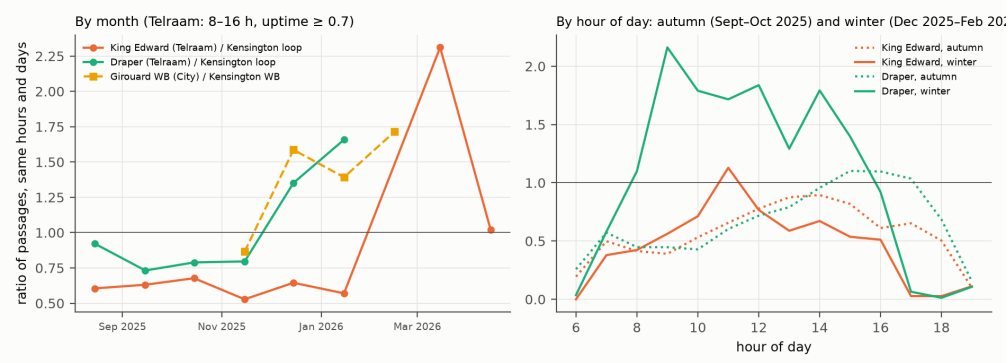
Weather and round trips



Sources: borough loop counter at Kensington (requests 2026-300, 2026-581); Telraam S2 sensors at King Edward and Draper (author; counts: Telraam); City detector det-00118 at Girouard (open data, CC-BY 4.0); ECCC da

NB regression: weekend -49 %, holiday period -41 %, +3 % per unit of mean temperature, -2 % per unit of snow on the ground; residual lag-1 autocorrelation 0.182.

The other points: the east end holds up in winter



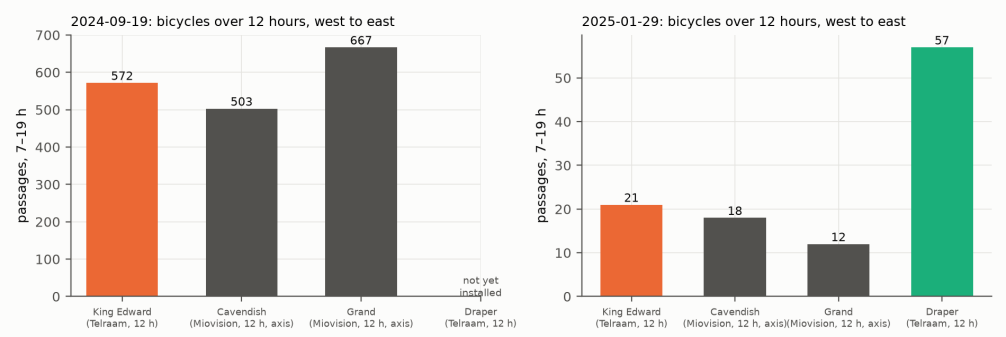
Dry days, winter core: King Edward 0.57, Draper 1.33 of the loop; Girouard WB 1.58 of the loop's WB (0.86 in November).

Snow days: the instruments diverge

sensor	weather	days	matched h	Telraam	Kensington	ratio
King Edward	no snow	15	129	185	322	0.575
King Edward	snow ge 2.5cm	13	117	204	231	0.883
King Edward	mild	16	141	203	442	0.459
King Edward	harsh	27	229	351	480	0.731
Draper	no snow	23	187	611	459	1.331
Draper	snow ge 2.5cm	12	96	405	190	2.132
Draper	mild	24	188	747	582	1.284
Draper	harsh	28	222	789	467	1.69

On days with $\geq$ 2.5 cm of snow both Telraam sensors count 50–60 % more relative to the loop. Either the camera over-detects on snow days, or cyclists leave the snowed-in lane for the roadway where the loop cannot see them. The data do not settle it; dry-day ratios are used, and the loop's snow-day counts may be low.

Two snapshot days



Jan 29, 2025: 7.4 cm of snow, mean -11.5 °C. Grand: 8 eastbound, 0 westbound in six peak hours (the « 8 »): no return leg in the window. Draper is a snow-day Telraam count.

Floors under the number of individuals (no model)

point	date	passages	people, $m = 2$	people, $m = 4$	note
Kensington loop	March 30, 2026	129	65	33	WB channel degraded
Kensington, core	December 3, 2025	83	42	21	both channels sound
King Edward (Telraam)	March 9, 2026	307	154	77	daylight, no snow
Girouard WB (City)	January 9, 2026	67	34	17	one direction

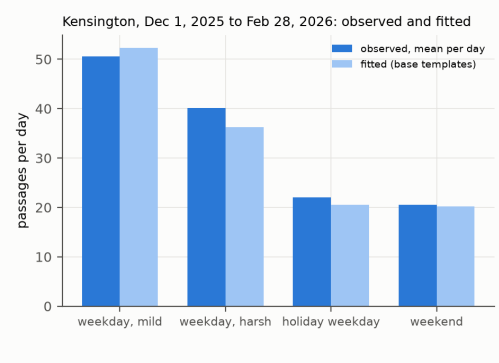
If no one crosses a point more than m times in a day, the largest day divided by m is a floor under the distinct cyclists of the winter.

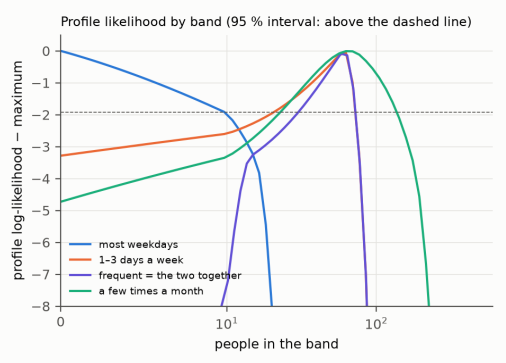
A frequency-band model

$$Y_d \sim \mathrm{NB}\Big(\sum_b N_b\, p_b(d)\, c_b\Big), \qquad P_d \sim \mathrm{NB}\Big(\sum_b N_b\, p_b(d)\, \pi_b\Big)$$

- Three bands (most weekdays / 1–3 days a week / a few times a month), each a template: probability of riding by day type and weather, passages per riding day, share of riding days giving a matched pair.
- Fitted by maximum likelihood on the core period (daily totals and matched pairs); 95 % profile intervals; four template sets.
- Purpose: to show which quantities one counter determines and which it does not.

What the counts pin down, and what they do not





Sources: borough loop counter at Kensington (requests 2026-300, 2026-581); Telraam S2 sensors at King Edward and Draper (author; counts: Telraam); City detector det-00118 at Girouard (open data, CC-BY 4.0); ECCC da

People per band, by template set (Kensington, core period)

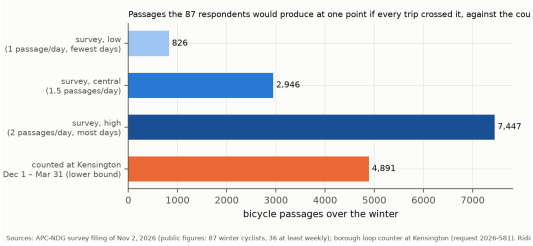
templates	most weekdays	1–3 days/week	frequent (both)	a few times a month	passages, frequent	fitted total
base	0 (0–10)	61 (22–69)	**61** (32–70)	66 (25–128)	78 %	3,151
more one-way trips	0 (0–12)	73 (16–85)	**73** (29–85)	88 (37–175)	76 %	3,118
tail more weather-sensitive	15 (10–16)	0 (0–37)	**15** (12–48)	253 (158–292)	41 %	3,380
survey categories literal	0 (0–11)	41 (0–46)	**41** (11–48)	173 (128–238)	56 %	3,225

Stable: the frequent core is small in number (11–85) and makes most of the passages. Not identified: the split daily / near-daily, and the size of the tail (25–292) without an assumption on how often an occasional rider rides.

From Kensington to the street

- Dry-day ratios to Kensington: King Edward 0.57, Draper 1.33, Girouard WB 1.58.
- Trips crossing at least one point: between 1.58 (every trip crosses every point) and 4.48 (no trip crosses two) times the Kensington count.
- Kensington is not the busiest point of the lane in winter; a count there is a lower bound on the street.
- Year over year on common dates: King Edward 0.77, Draper 0.81 of the 2024–25 winter.

The survey in context



- 87 respondents cycled on Terrebonne last winter, 36 at least weekly (public filing, Nov 2, 2026).
- Their passages at one point, if every trip crossed it: 2,946 central (826–7,447) against 4,891 counted: 60 %.
- 36 weekly riders against a frequent core of 11–85 at Kensington alone; 51 occasional against a tail of 25–292; both $\times$ the corridor factor for the street.
- The survey reached a large share of frequent riders and a small share of the tail: the signature of a voluntary survey of users. The count does not contradict it; the 87 are a floor, not a measure.

What this settles and what it does not

- Trips at stake: 4,891 passages at one point over the proposed window, more over the street.
- People: at least 154 at King Edward on one March day and 42 at Kensington on one December day, before any assumption; beyond that, the head count depends on the frequency assumed, and a division of passages by two is one such assumption.
- About 11 round-trip commuters cross Kensington on an ordinary winter weekday; frequent riders make most passages; the tail is large in people and poorly measured.
- Open: the snow-day divergence between the camera sensors and the loop; a passage-weighted frequency distribution (asking passing cyclists at the counting point) would turn passages into people without a model.
- Code, data tables and every figure: `https://github.com/OpenMobilityData/Terrebonne-open-sources/tree/main/2026-winter-counts-user-frequency`