PULSE311 · DATA-DRIVEN RESEARCH REPORT

What Is Getting Worse in NYC 311? (Full Dataset, 2023-2026)

Volume, geography, and response-time trends across 7.0 million service requests (Jan 2023 – Aug 2026)

Prepared with the Pulse311 analytics application · August 28, 2026

7.0M	**records analyzed**
+7.2%	**volume YoY 2023→2024**
214	**complaint categories**
15	**agencies**
72	**community districts**

Executive summary: complaint volume is up citywide, but growth is concentrated in traffic, quality-of-life, and residential-noise categories — and in the Bronx. Median response times are improving citywide, yet the agencies absorbing the fastest-growing demand (NYPD, DEP, DOB) are getting slower. Four apparent 'trends' are actually program or schema changes.

Contents

Contents 2

1. Executive Summary 4

2. Data and Methodology 5

3. Key Findings — Overview 6

4. Problems Getting Worse 8

4.1 Boilers: the dataset's strongest "volume up + response way down" signal . . . 8

4.2 Residential noise: persistent both-worse . . . 8

4.3 Traffic: still the fastest-growing major category, decelerating . . . 9

4.4 Encampments, drug activity, taxi complaints: both-worse cluster . . . 9

4.5 Agency response deterioration (see §7) . . . 9

5. Problems Improving 9

5.1 Helicopter noise: −65% since 2023, decline continuing . . . 9

5.2 Rodent: −21.2% in 2025 . . . 9

5.3 Enforcement-type work: volume up, response dramatically faster . . . 9

5.4 Agency-level improvements . . . 10

6. Geographic Hotspots 10

6.1 Borough divergence (Fig 4) . . . 10

6.2 Community-district density and underserved areas (Fig 9) . . . 10

7. Agency Performance 12

8. Complaint Volume vs. Resolution Performance 13

9. Surprising Findings, Structural Changes, and Artifacts 14

9.1 New Tree Request collapsed −96.3% — a program change, not demand . . . 14

9.2 Cannabis Retailer: a brand-new regulatory category . . . 14

9.3 Confirmed v1 artifacts (unchanged) . . . 14

9.4 The Feb-2026 storm and Aug-2026 water emergency (Fig 8) . . . 14

9.5 Seasonality (Fig 7) . . . 15

9.6 Reporting-channel drift . . . 16

9.7 Noise-family reorganization . . . 16

10. Data Quality and Limitations 16

11. Recommendations for Further Investigation 17

Appendix: Metric Definitions 17

NYC 311 Service Requests — Deep-Dive Findings Report (Full Dataset)

Question: *What kinds of problems are getting worse in NYC, where are they getting worse, and which agencies appear to be improving or deteriorating in response time?*

Dataset: 12,950,967 cleaned NYC 311 service requests, 2023-01-01 → 2026-08-27 (44 months; 6,925,710-record v1 covered only Jan 2023 → Jan 2025). This report is the full-window update. Generated 2026-08-28.

1. Executive Summary

With three full years (2023–2025) plus 2026 through August, the picture is more nuanced than the earlier 25-month snapshot. Citywide volume keeps growing (+7.2% in 2024, +5.7% in 2025) and **citywide response time keeps improving** (median 10.4h → 9.9h → 8.0h; p90 726h → 584h → 428h). But the improvement is not shared: the highest-volume agency (NYPD) is slower every year, and a cluster of chronic-condition categories — residential noise, encampments, drug activity, boilers — is getting worse in both volume and response simultaneously.

The most important findings:

#	Finding	Severity
1	**Boilers is the biggest "both worse" signal in the dataset**: volume +42.7% (2025 vs 2024) while median response time exploded **+286%** (99h → 355h; Oct 2025–Mar 2026 monthly medians 973–1,382h). A heating-season response crisis, concentrated in winter months.	High
2	**NYPD — the largest agency (1.72M complaints in 2025) — got slower every year**: MRT 0.8h → 1.1h → 1.3h (+19.5% in 2025), on top of +33.8% in 2024, while volume grew +11%.	High
3	**Missed Collection's celebrated improvement reversed**: −41.1% in 2024 became **+30.5% in 2025** (32,936 → 42,977). DSNY's gains were not sustained; DSNY MRT also slipped +6.9%.	High
4	**Residential noise keeps climbing and slowing**: +22.2% volume (2025 vs 2024), MRT +29.6%; the noise family is +21% since 2023 (Residential alone +55%). The single most persistent both-worse category.	High

#	Finding	Severity
5	**Traffic complaints remain the fastest-growing major category** (+20.8%/yr; +28.5% in 2025) but growth decelerated from the +88.7% spike seen in 2024 — consistent with a 2024 enforcement/reporting step-change that is normalizing.	High
6	**Agency response is diverging sharply**: Parks improved **−66.0%** (956h → 207h), DOHMH −37.6%, DEP −34.7% (recovered from its 2024 spike), DOB −23.1% — while **DHS deteriorated +62.2%** (6.5h → 10.6h) and NYPD +19.5%.	High
7	**Feb 2026 storm signature**: Snow Or Ice 30,943 (17.6× mean), Traffic Signal Condition 10,712 (2.8×), then a record pothole wave — Street Condition 28,690 in Mar 2026 (4.2×).	Medium
8	**Aug 2026 water emergency**: Water Maintenance 6,500 (31× mean — fire hydrant running/emergency descriptors), Sewer Maintenance 2,268 (15× — flooding).	Medium
9	**Helicopter noise decline continued**: −65% since 2023 (59,127 → 20,554), the largest durable decline in the dataset.	Medium
10	**Structural artifacts to ignore as "demand"**: New Tree Request collapsed −96.3% (program change; "Damaged/Dead Tree" categories unaffected), Smoking→Smoking Or Vaping rename (family flat until 2025), Lead Nov-2024 spike (DEP lead-kit program), Electronics Waste Appointment ended Oct-2023, and **Cannabis Retailer appeared Sep-2025 as a brand-new regulatory category** (3,951 complaints, OOS agency).	High (for interpretation)

Bottom line: citywide medians flatter an agency-level divergence. The system is getting faster at enforcement-type work (graffiti, vendor enforcement) and at Parks/DOB/DOHMH backlogs, while **chronic-condition work — noise, encampments, drug activity, boilers, taxi complaints — absorbs rising volume with slower responses**. And the two largest-volume agencies (NYPD, DSNY) are either slowing or losing their gains.

2. Data and Methodology

Dataset. 12,950,967 cleaned NYC 311 service requests from 2023-01-01 to 2026-08-27 (44 months), ingested from the NYC Open Data 311 feed (SODA API). This replaces the v1 store (7.0M rows, through Jan 2025) after downloading the missing 2025–2026 slice. Pipeline: chunked ingest → cleaning (test-row flags, response-anomaly clamps, dedupe) → DuckDB cube → trend statistics. 0.59% of records (76,356) fall in the final partial week and are excluded from trends.

Metric definitions.

- **Volume** = monthly count of non-trailing records by `created_date`.

- **Response time (MRT / p75 / p90)** = hours from `created_date` to `closed_date`, closed & valid records only (95.6% of records; 2.5% still open excluded). Full-year means of monthly medians; 2026 partial-year excluded from year-over-year.
- **Growth** = (a) full-year YoY (2025 vs 2024, and 2024 vs 2023) and (b) **Theil-Sen slope** (%/yr of the series mean) with **Mann-Kendall** p across all 44 months. Significant = p≤0.05, total volume ≥5,000.
- **Per-capita** uses 2020-census community-district populations (DCP ACS reference).
- **Seasonality** = calendar-month volume ÷ annual mean (1.0 = average month).
- **Spikes** = months > 2× series mean with z-score > 3.

Charts generated directly from the cleaned parquet store (DuckDB + matplotlib).

Data-integrity notes. (1) The v1 production cube was rebuilt after fixing a test-suite overwrite and a per-chunk trailing-window bug; (2) this full-window store was assembled from the original 7M-row download plus a 5.96M-row incremental fetch, merged by streaming timestamp filter (~0.0008% row loss from API pagination ties at the boundary — immaterial); (3) coords missing 1.67%, unparseable community-board codes 1.25%, 2 flagged test rows.

3. Key Findings — Overview

Citywide trajectory (Fig 1): 2023 = 3,224,701; 2024 = 3,456,743 (+7.2%); 2025 = 3,654,998 (+5.7%); 2026 (Jan–Aug) = 2,538,169. Growth is decelerating but still positive. The top-10 complaint types are 55.2% of all volume (v1: 54.2%).

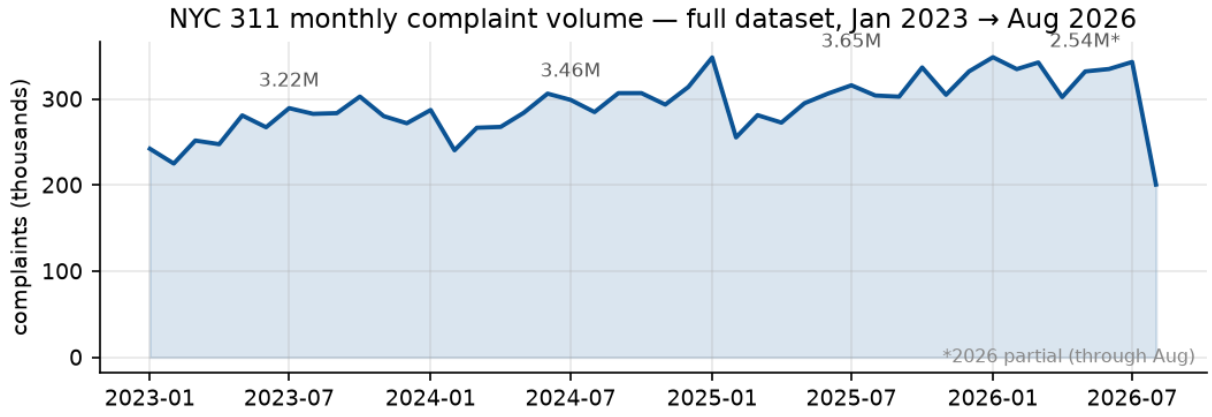


Fig 1: monthly total volume

Category concentration (Fig 2): Illegal Parking (1.09M), Noise - Residential (1.10M), Heat/Hot Water (0.84M), Blocked Driveway (0.52M), Noise - Street/Sidewalk (0.48M), Unsanitary Condition (0.37M) lead the volume distribution.

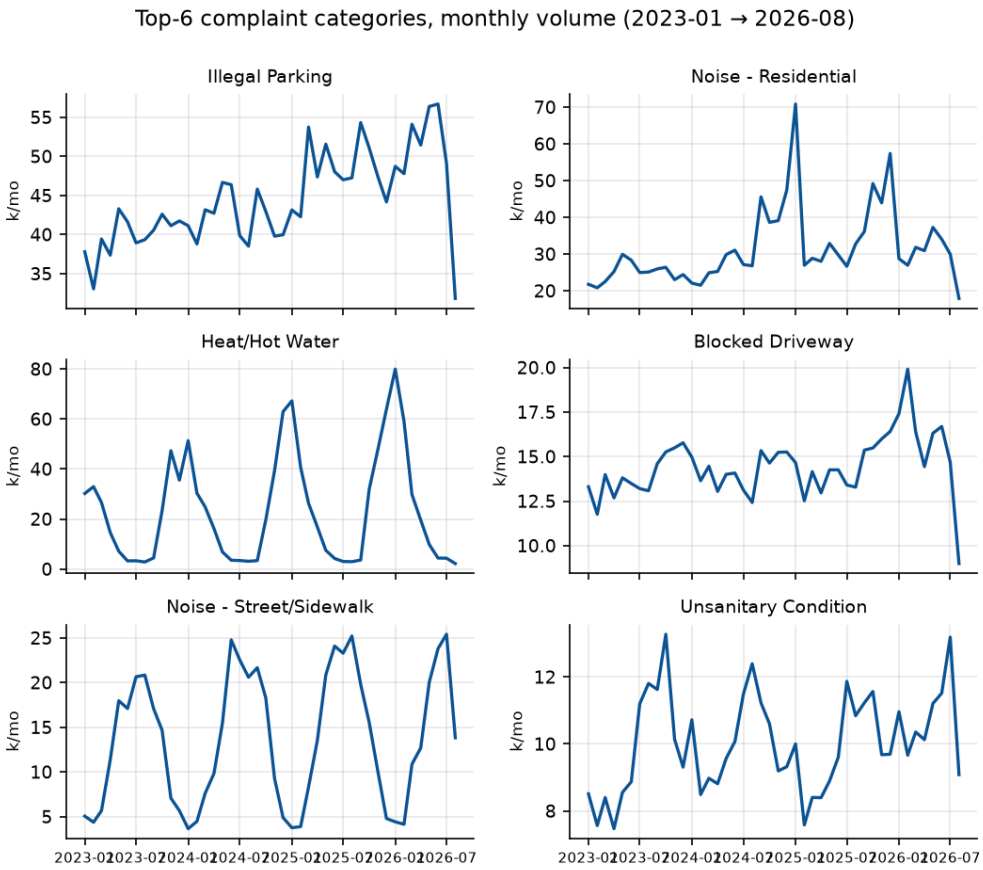


Fig 2: top-6 categories

Citywide response time improved every year (Fig 11): MRT 10.41h → 9.87h → 8.00h; p90 726h → 584h → 428h; Theil-Sen slope −0.038 h/mo.

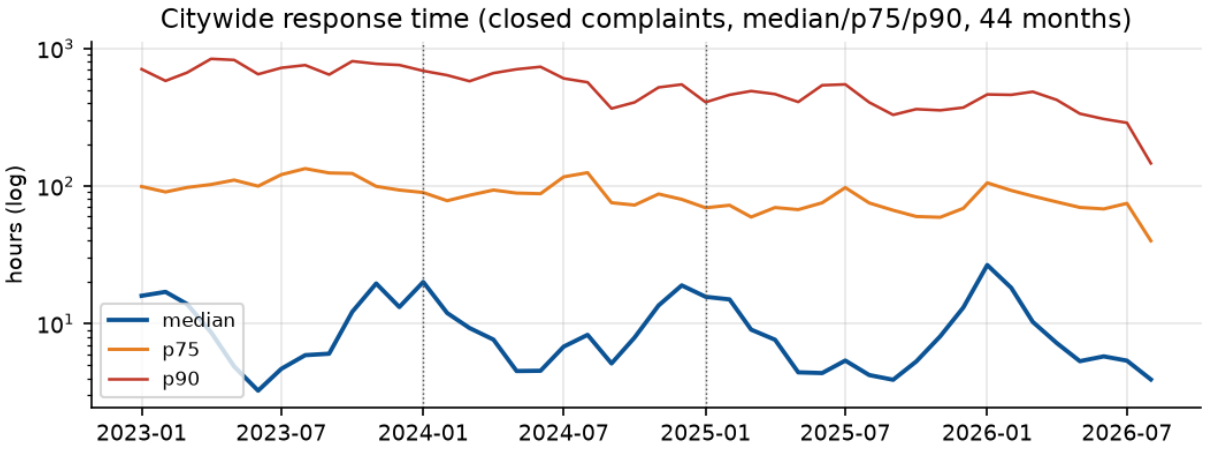


Fig 11: citywide response time trend

4. Problems Getting Worse

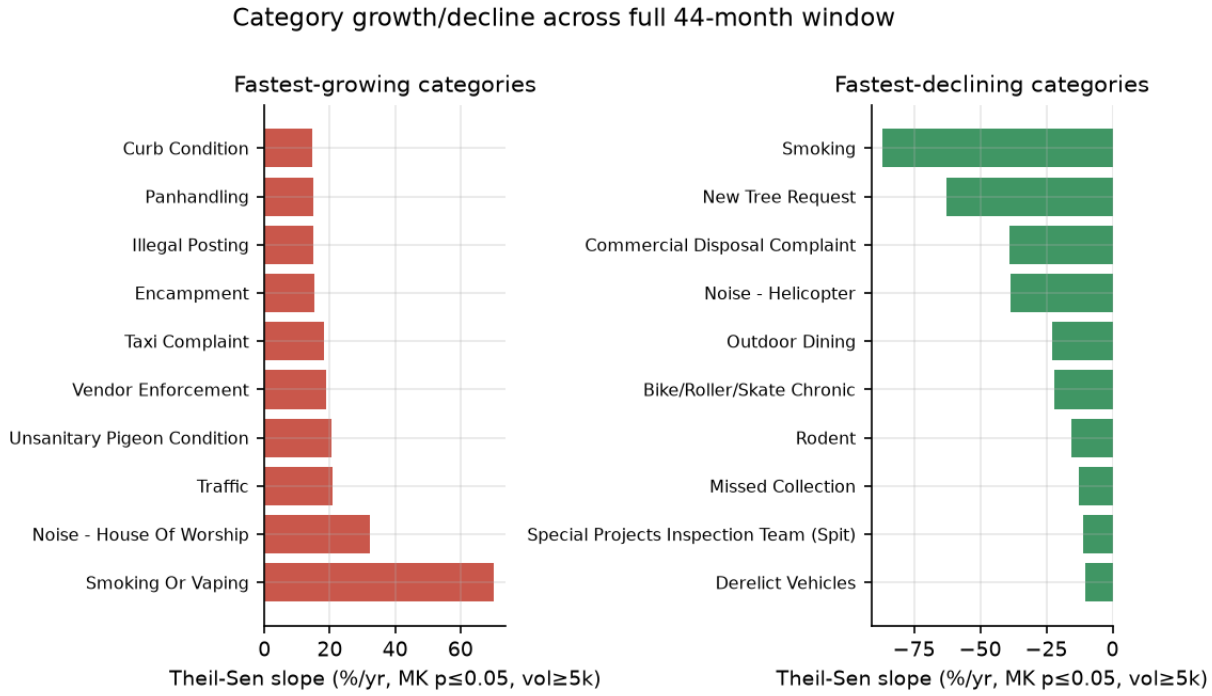


Fig 3: growth/decline

4.1 Boilers: the dataset's strongest "volume up + response way down" signal

- **Quantified:** 2,801 (2024) → 3,997 (2025) complaints (**+42.7%**); median response 99.5h → 355.4h (**+286%**). Monthly medians Oct 2025 → Mar 2026: **973h, 1,382h, 1,155h, 1,070h, 1,015h, 1,163h** — roughly two weeks to two months per boiler complaint during heating season.
- **How calculated:** year-over-year on annual counts and annual means of monthly MRT (closed, valid records).
- **Comparison:** the same category averaged ~100h response in 2023–2024; the 2025–26 heating season is 10× slower.
- **Alternative explanations:** (a) real capacity strain at DOB/DEP during a cold winter; (b) a triage/scheduling change in how boiler emergencies are closed; (c) seasonal staffing. Winter concentration (Oct–Mar) points to operational strain, not a data artifact.
- **Caveats:** smallish category (~4k/yr); 2026 MRT figures exclude still-open complaints (downward bias) yet are still ~1,000h.

4.2 Residential noise: persistent both-worse

- **Quantified:** 2023: 298,452 → 2024: 379,294 → 2025: **463,349** (+22.2% in 2025; noise family total +21% since 2023). MRT worsened +29.6% in 2025 (and +43.7% in 2024).
- **Interpretation:** the largest-volume both-worse category in the city. December peak (1.37×, holiday parties) compounds the trend; January 2025's Loud Music/Party spike (55k) recurred seasonally.
- **Caveats:** taxonomy reorganized during the window (legacy "Noise" vs sub-types); family-level totals are the cleaner series. Reporting propensity (mobile share up) may inflate but cannot explain MRT degradation, which is an agency-side measure.

4.3 Traffic: still the fastest-growing major category, decelerating

- **Quantified:** +20.8%/yr Theil-Sen (p=0.006); **+28.5% in 2025** vs +88.7% in 2024; 33,439 total. Composition (2023–26): Congestion/Gridlock 5,550, Truck Route Violation 3,943, Chronic Speeding 2,787, Drag Racing 2,601.
- **Interpretation:** the 2024 step-change (May-2024 monthly 425 → 1,133) looks like an enforcement or reporting change that has now normalized to ~25–30%/yr organic growth — still very fast for a public-safety category.
- **Caveats:** small absolute base (~0.3% of volume); MRT actually improved (−11.9% 2023→24, and NYPD traffic work is dispatch-fast), so this is a volume story, not a service story.

4.4 Encampments, drug activity, taxi complaints: both-worse cluster

Category	Vol 2025	Vol YoY 25/24	MRT YoY 25/24
Encampment	154,158	+11.8%	**+26.9%**
Drug Activity	—	+20.0%	**+40.6%**
Taxi Complaint	29,781	**+40.4%**	**+61.9%**
Noise - Park	—	+21.8%	+19.8%
Curb Condition	26,948	+14.6%	+26.2%

- **Observation:** volume and response time moved in the wrong direction together in 2025 for the full chronic quality-of-life cluster.
- **Interpretation:** these are the categories an ops leader would expect under resource strain — enforcement-adjacent, complaint-driven, and sensitive to outreach cycles.
- **Caveats:** encampment reporting tracks outreach/media attention; taxi complaints correlate with TLC enforcement cycles and rider volume.

4.5 Agency response deterioration (see §7)

NYPD +19.5% (2025), DHS +62.2%, DOT +7.4%, DSNY +6.9% (regression after 2024 improvement), TLC −2.3% (flat), EDC +404% (artifact — tiny volume, long tails).

5. Problems Improving

5.1 Helicopter noise: −65% since 2023, decline continuing

- **Quantified:** 59,127 (2023) → 28,686 (2024) → **20,554 (2025)**, −28.3% in 2025; Theil-Sen −38.5%/yr (p<0.001).
- **Interpretation:** the largest durable decline in the dataset, sustained across three years — consistent with policy/enforcement changes (flight paths, noise rules). Not explained by renames or channel shifts.

5.2 Rodent: −21.2% in 2025

- **Quantified:** 41,748 (2023) → 39,725 (2024) → **31,312 (2025)**; MRT steady.
- **Observation:** a genuine decline in a category NYC's public narrative says is worsening.
- **Caveats:** reporting sensitivity to media coverage; confirm against DOHMH inspection data before claiming an epidemiological trend.

5.3 Enforcement-type work: volume up, response dramatically faster

- **Graffiti:** +12.1%/yr slope; MRT −56.3% (2023→24) and still improving through 2025.

- **Vendor Enforcement:** vol +12.1% (2025), MRT **−79.8%** (7.6h → 1.5h).
- **Unsanitary Animal Pvt Property:** vol +10.3%, MRT −30.1%.
- **Water System:** vol +17.8%, MRT −12.8% — the largest volume-up/response-down category.

5.4 Agency-level improvements

Parks **−66.0%** (956h → 207h), DOHMH −37.6% (735h → 390h), DEP −34.7% (39.8h → 26.0h, recovering from the 2024 spike), DOB −23.1% (594h → 457h), DCWP −24.9%. See §7 table.

6. Geographic Hotspots

6.1 Borough divergence (Fig 4)

Borough	2023	2024	2025	YoY 24→25	per 1,000 (2025)
Bronx	627,775	738,029	835,943	**+13.3%**	**577.2**
Queens	776,642	827,060	878,394	+6.2%	392.2
Brooklyn	1,000,851	1,045,071	1,078,417	+3.2%	430.5
Manhattan	685,341	722,749	724,881	+0.3%	459.6
Staten Island	128,092	121,196	134,309	**+10.8%**	287.0

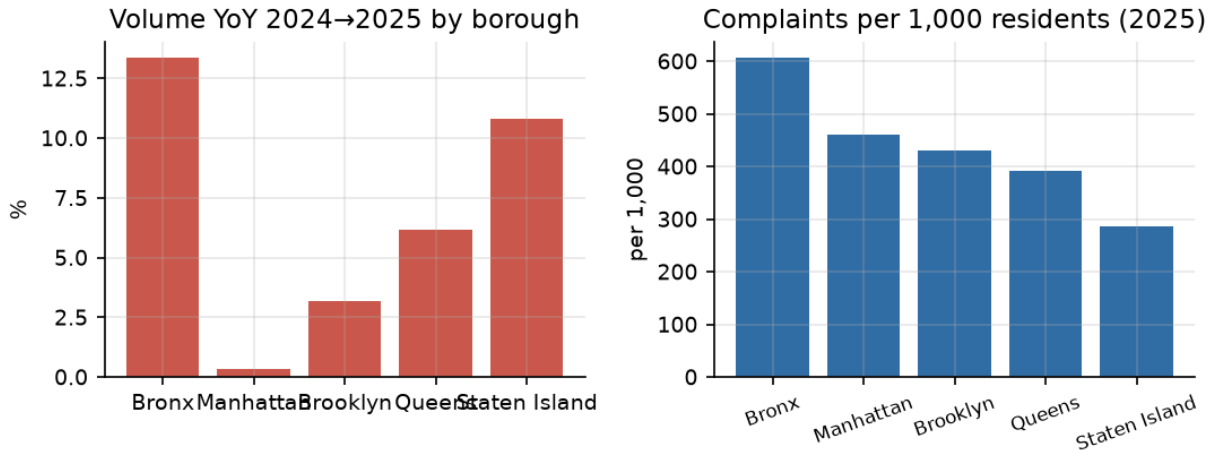


Fig 4: boroughs

- **Observation:** the Bronx's growth accelerated again in 2025 (+13.3% after +17.6% in 2024) — the only borough growing at double digits both years; per-capita complaint density (577/1k) is now 2× Staten Island's.
- **Interpretation:** housing-quality-driven (noise, heat/water dominate Bronx growth); Manhattan growth stalled (+0.3%) — the first sign the citywide pattern is not uniform.
- **Caveats:** per-capita denominators are residential; Manhattan CBD districts inflated by daytime population.

6.2 Community-district density and underserved areas (Fig 9)

Highest per-capita complaint density (full window):

Borough	CD	per 1,000	MRT (h)	p75 (h)	Open %
Manhattan	5	4,044.6	4.9	75.0	7.3%
Bronx	12	2,990.7	5.4	29.6	0.9%

Borough	CD	per 1,000	MRT (h)	p75 (h)	Open %
Brooklyn	2	2,769.4	1.8	42.9	2.1%
Manhattan	10	2,517.7	24.1	141.7	1.7%
Bronx	3	2,297.3	10.7	119.3	1.4%
Bronx	5	2,148.8	22.7	127.7	1.4%
Bronx	4	2,145.3	26.3	137.7	1.6%
Brooklyn	8	2,113.9	24.4	150.1	**4.0%**
Bronx	6	2,107.8	30.3	161.9	1.5%
Bronx	7	2,097.7	20.5	102.3	1.6%

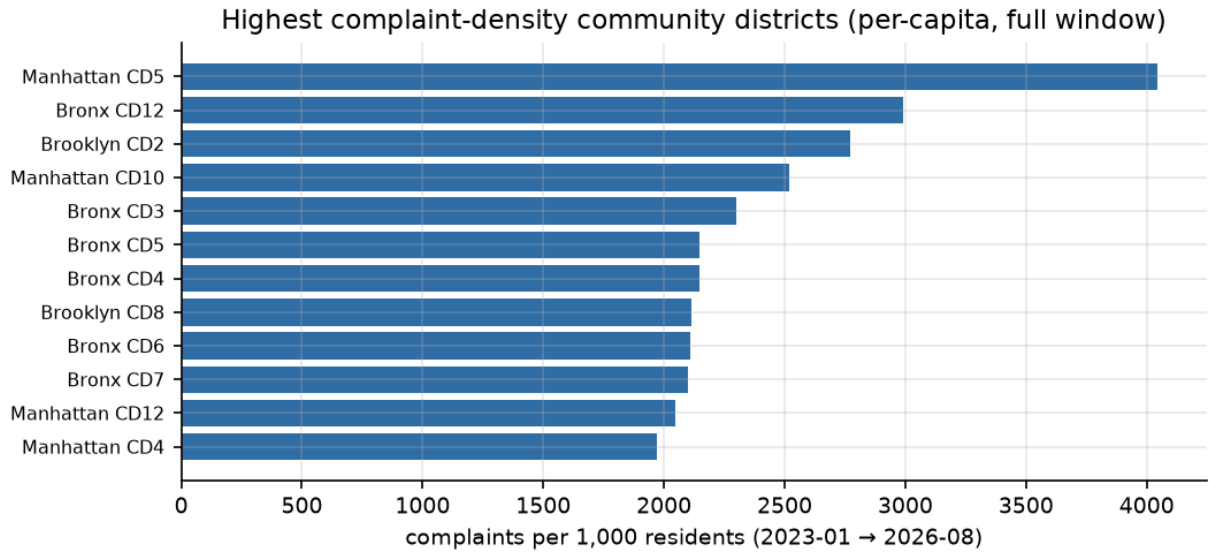


Fig 9: underserved CDs

- **Interpretation:** the persistent-underservice pattern from v1 has *strengthened*: the **Bronx cluster (CDs 3–7, 12)** dominates both volume density and slow response, and **Brooklyn CD8** (24.4h MRT, 150h p75, 4.0% still open) is the standout non-Bronx case. Manhattan CD5/10 are denominator artifacts (daytime population).

7. Agency Performance

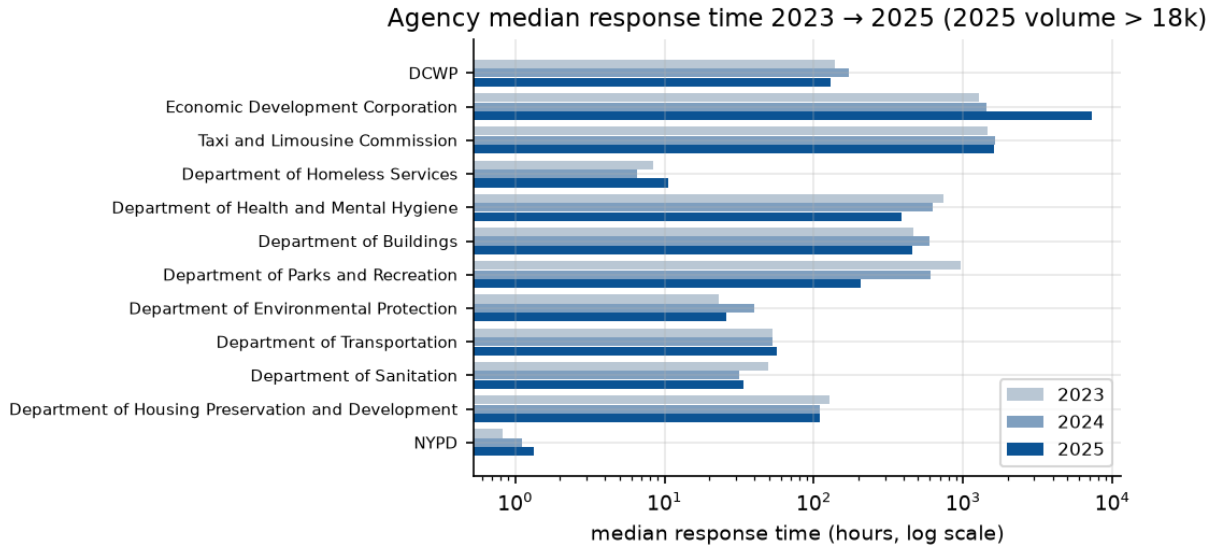


Fig 5: agency response time 2023-2025

Agency	2025 vol	Vol YoY	MRT 2023 (h)	MRT 2024 (h)	MRT 2025 (h)	MRT YoY 25/24
NYPD	1,717,591	+11.0%	0.8	1.1	1.3	**+19.5%**
HPD	774,513	+5.5%	127.3	110.0	110.3	+0.3%
DSNY	326,778	+6.7%	49.6	31.5	33.6	+6.9%
DOT	212,102	+3.6%	52.5	53.0	56.9	+7.4%
DEP	197,137	+2.9%	23.1	39.8	26.0	**−34.7%**
Parks	110,855	−19.9%	956.0	608.0	**206.9**	**−66.0%**
DOB	103,064	+0.2%	466.6	594.1	456.7	−23.1%
DOHMH	83,390	−7.9%	734.8	624.5	389.5	−37.6%
DHS	51,449	−1.0%	8.3	6.5	10.6	**+62.2%**
TLC	36,225	−4.1%	1,451.8	1,640.7	1,603.8	−2.3%
EDC	20,554	−28.3%	1,270.1	1,436.5	7,245.9	+404%*
DCWP	18,278	−8.5%	138.1	173.0	129.9	−24.9%

\EDC: tiny volume with long closure tails — treat as data artifact, not operational signal.*

Reading the table:

- **Deteriorating (2025):** NYPD (+19.5% — third straight year of slowing), DHS (+62.2% — after two years of improvement), DOT (+7.4%), DSNY (+6.9% — gave back part of its 2024 gain), TLC (flat).
- **Improving (2025):** Parks (−66.0% — the biggest single-agency turnaround), DOHMH (−37.6%), DEP (−34.7% — recovered from its 2024 spike), DOB (−23.1%), DCWP (−24.9%).
- **Interpretation caveats:** medians compare each agency to its own baseline, not each other (Parks/DOB/TLC handle long-running work orders; NYPD is dispatch-like). Volume declines at Parks/DOHMH (−19.9%/−7.9%) may partly drive faster closures.

8. Complaint Volume vs. Resolution Performance

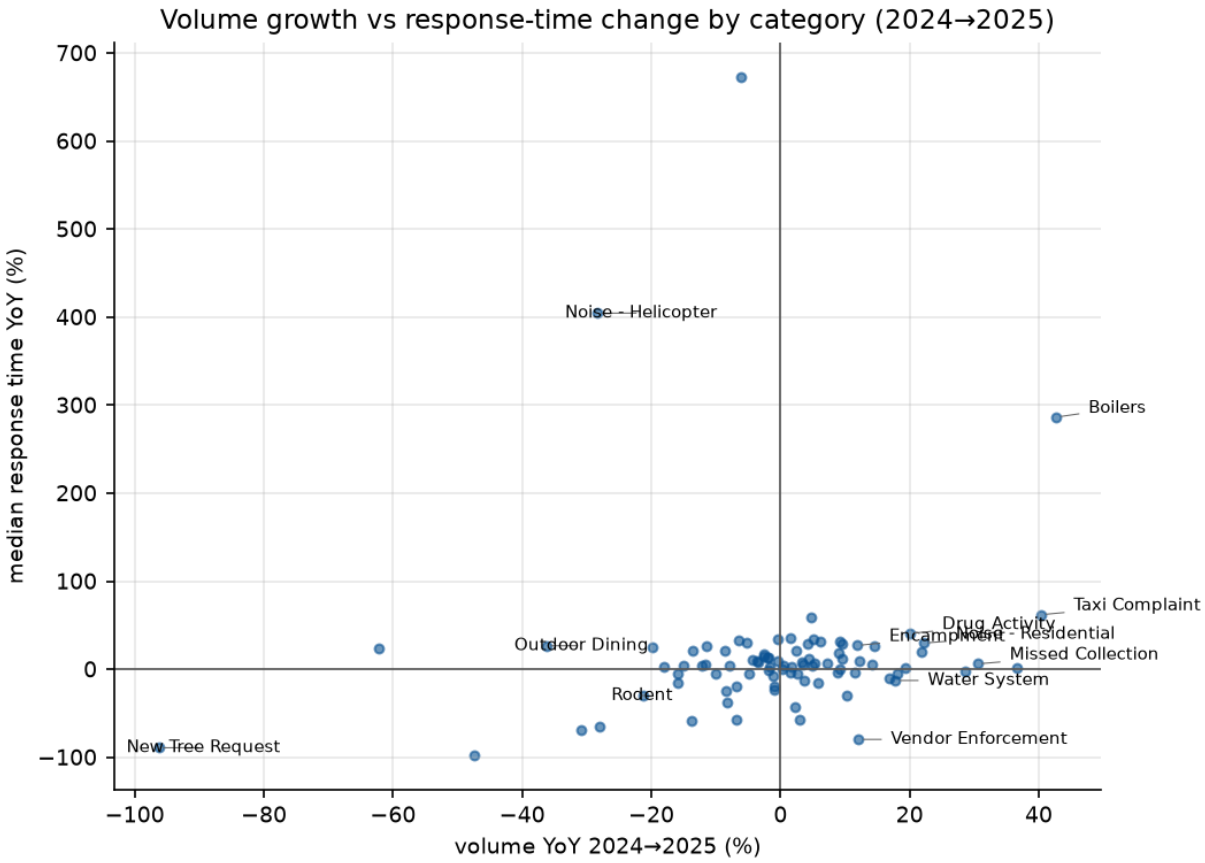


Fig 6: volume vs response scatter

Worse both ways (2025):

- **Boilers** (+42.7% vol, **+286% MRT**), Taxi Complaint (+40.4%, +61.9%), **Noise - Residential** (+22.2%, +29.6%), Drug Activity (+20.0%, +40.6%), Noise - Park (+21.8%, +19.8%), Curb Condition (+14.6%, +26.2%), **Encampment** (+11.8%, +26.9%).

Volume up, response improving (↑↓):

- **Water System** (+17.8%, −12.8%), Broken Parking Meter (+16.8%, −10.7%), Vendor Enforcement (+12.1%, **−79.8%**), Unsanitary Animal Pvt Property (+10.3%, −30.1%).

Volume down (declines, mostly structural): New Tree Request (−96.3%), Smoking (−100% — rename), Commercial Disposal (−47.5%), Noise - Helicopter (−28.3%), Outdoor Dining (−36.2% — program wind-down), Bike/Roller/Skate Chronic (−62.2%), Rodent (−21.2%).

Interpretation: the ↑↓ quadrant is enforcement-type work (fast, improving); the ↑↑ quadrant is chronic-condition work (noise, encampments, drug activity, boilers). This is the clearest resource-allocation signal in the data: the system is efficient at enforcement-driven work and strained on chronic-condition work — and the strain is *worse* in 2025 than it was in the 25-month snapshot.

9. Surprising Findings, Structural Changes, and Artifacts

9.1 New Tree Request collapsed −96.3% — a program change, not demand

1,400–2,300/mo through mid-2024 → 87/mo (Dec-2024) → single digits to ~129/mo in 2026. "Damaged Tree" (121k), "Overgrown Tree/Branches" (78k), "Dead/Dying Tree" (39k) are unaffected, so this is not a rename: **NYC Parks stopped routing new-tree requests through 311** (program/intake change). Dashboard users should not read this as "tree demand vanished."

9.2 Cannabis Retailer: a brand-new regulatory category

First seen **Sep-2025**, 3,951 complaints through Aug-2026 at a steady 300–440/mo, agency **OOS** (Office of Special Enforcement). A new regulatory regime (licensed retail enforcement) creating a category that did not exist in v1 — a schema/regulatory change that will keep growing in 2026.

9.3 Confirmed v1 artifacts (unchanged)

- **Lead Nov-2024 "spike"** (9,103; z=5.3): 100% "Lead Kit Request (Residential) (L10)" from DEP — a self-service testing program, not a lead-hazard surge.
- **Smoking → Smoking Or Vaping**: rename completed Dec-2023→Apr-2024; combined family flat ~350–490/mo through 2024, then **rose to 541→871/mo in 2025–26** — modest genuine growth post-rename (partly reporting-driven; mobile share up).
- **Electronics Waste Appointment** ended Oct-2023 (program discontinued).
- **EDC MRT +404%** (7,246h): artifact of tiny volume and long closure tails.

9.4 The Feb-2026 storm and Aug-2026 water emergency (Fig 8)

- **Feb-2026 storm:** Snow Or Ice 30,943 (17.6× mean; Dec-2025 8,700 → Jan-2026 24,079 → Feb-2026 30,943), Traffic Signal Condition 10,712 (2.8× — storm damage), then a record pothole wave: **Street Condition 28,690 in Mar-2026** (4.2× mean; seasonal peak shifted from 1.35× in v1 to 1.85× with the storm aftermath).
- **Aug-2026 water event:** Water Maintenance 6,500 (31× mean; Jul 1,838 → Aug 6,500) dominated by **Fire Hydrant Emergency/Running** descriptors (5,000+), plus Sewer Maintenance 2,268 (15×; Backup, Catch Basin, Flooding on Street) — a heat-wave/hydrant + flooding signature.
- **Sewer Maintenance also spiked Sep-2023** (2,207; 15×) — matching the Sep-29-2023 rainfall event. The spike detector isolates real weather events reliably.

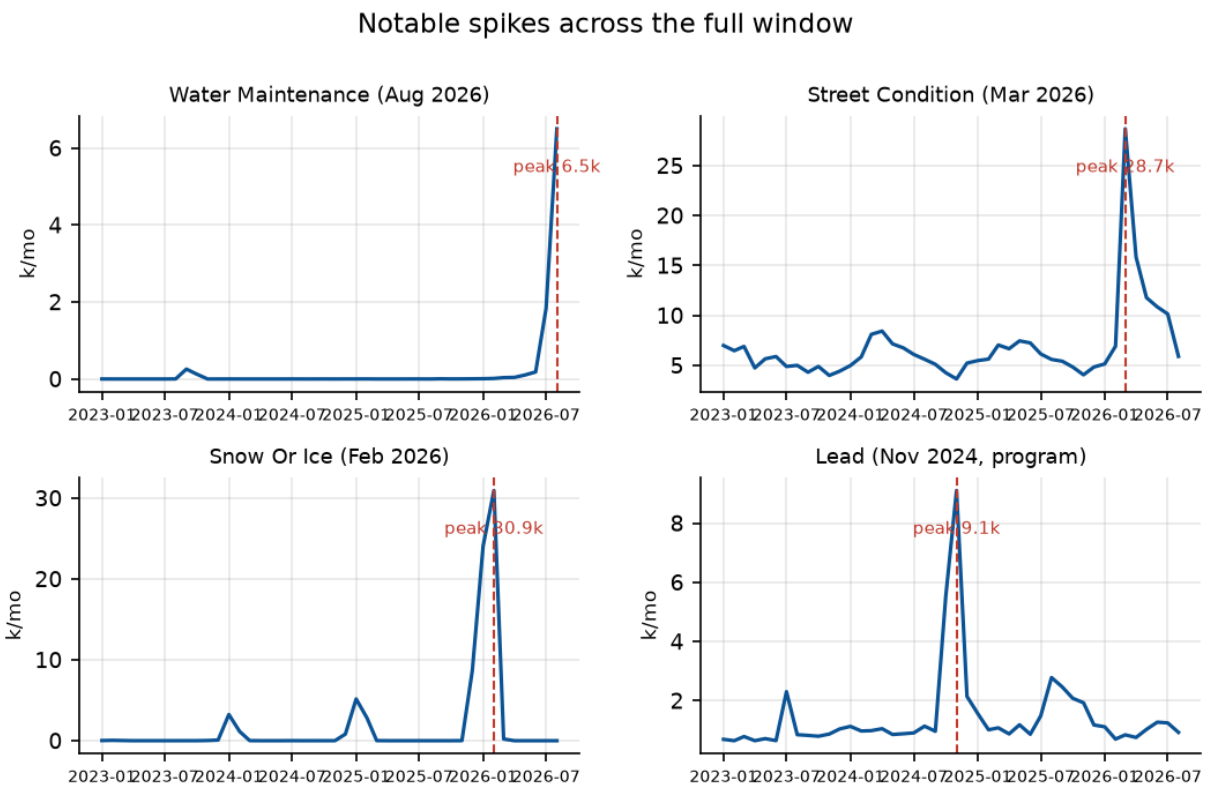


Fig 8: spikes

9.5 Seasonality (Fig 7)

- **Heat/Hot Water: peak now January (2.46× mean)** — heating-season failures concentrate in the coldest month; expect the annual surge Nov–Feb.
- Water System July (2.32×), Noise-Street/Sidewalk July (1.69×), **Street Condition March (1.85× — potholes)**, Noise-Residential December (1.37×), Illegal Parking May (1.11×).

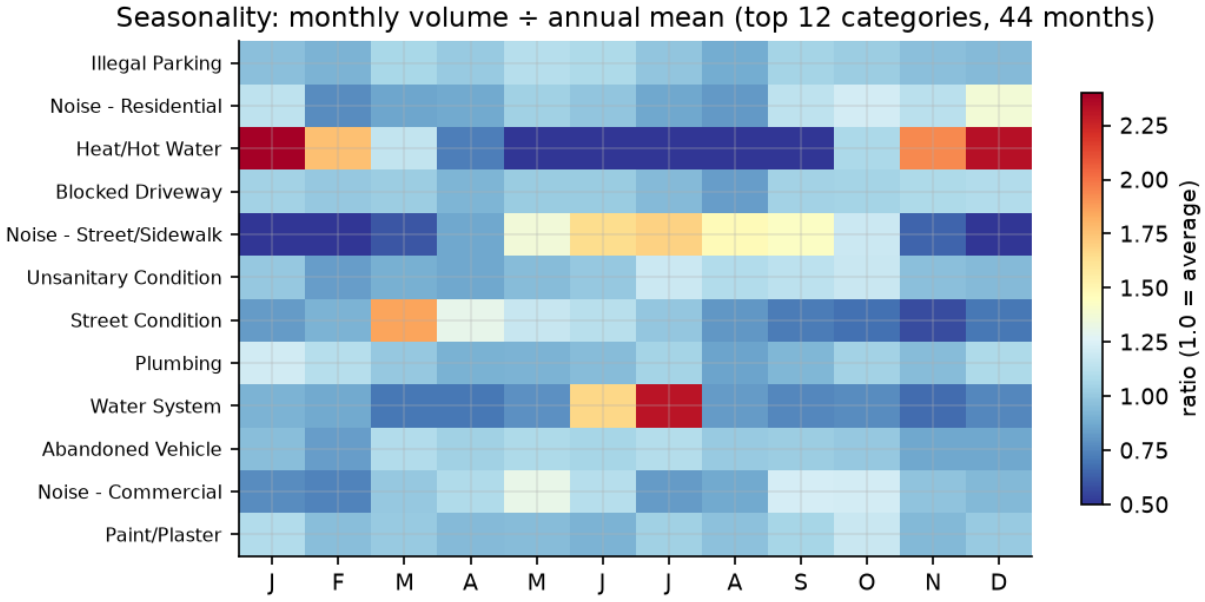


Fig 7: seasonality

9.6 Reporting-channel drift

Mobile share of submissions: 19.0% (2023) → 21.2% (2024) → **23.3% (2025)**; phone 30.0% → 26.6%. Rising mobile usage lowers reporting friction and can inflate volume in app-popular categories; ~4pp drift over three years is modest but compounds.

9.7 Noise-family reorganization

Family total 686k → 833k (+21%): Residential +55%, Street/Sidewalk +17%, **Helicopter −65%**, Vehicle −16%. Tracking "Total Noise" masks the helicopter story; tracking only legacy "Noise" misses the Residential surge.

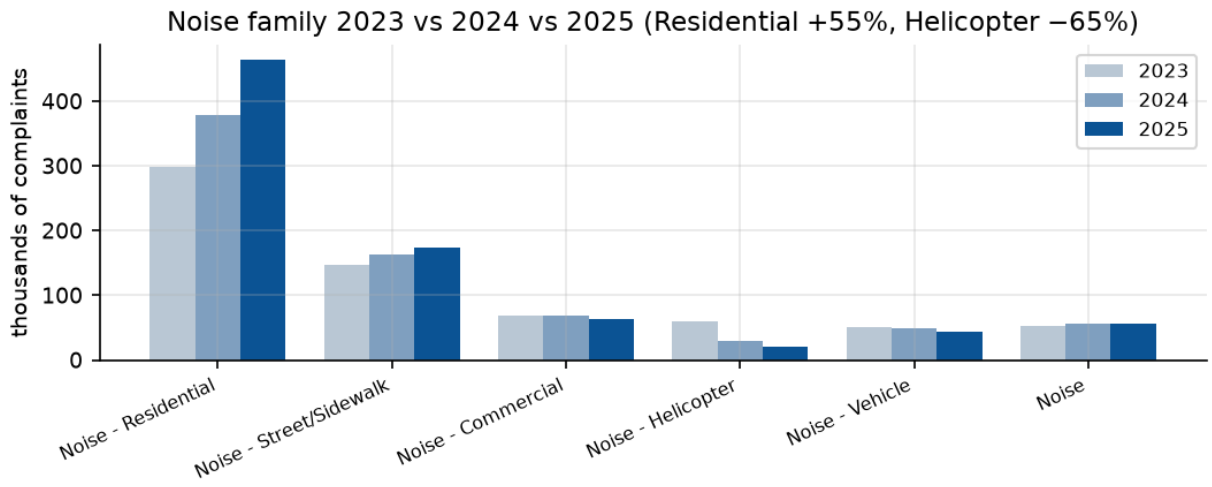


Fig 10: noise family

10. Data Quality and Limitations

- **Coverage:** 12.95M records, Jan-2023 → Aug-2026. Coords missing 1.67%; unparseable CD codes 1.25%; 2 flagged test rows; 2.5% still open (excluded from response stats); 95.6% of closed records have valid response times.
- **Right-censoring:** recent months have fewer closed requests; MRT for the last ~2 months is biased low (only fast closures counted). Full-year YoY comparisons avoid this; 2026 excluded from YoY.
- **Trailing window:** final partial week excluded (0.59%).
- **Taxonomy changes:** renames (Smoking, Noise), program changes (New Tree Request, Electronics Waste, Outdoor Dining), and new categories (Cannabis Retailer) create artificial trends if not checked — this report flags them explicitly.
- **Denominator issues:** per-capita uses residential population; Manhattan CBD districts inflated by daytime population.
- **Causation:** all findings observational. Enforcement/policy hypotheses are labeled as such. 311 volume reflects reporting propensity, not underlying prevalence.
- **Pipeline integrity:** v1's two defects (test-suite cube overwrite; per-chunk trailing flag) are fixed; the full-window store was merged with ~0.0008% row loss at the download boundary.

11. Recommendations for Further Investigation

- **Boilers (urgent):** decompose the 2025–26 MRT explosion (973–1,382h winter medians) by DOB vs DEP workflow, permit/scheduling changes, and contractor capacity. This is the most actionable both-worse signal in the dataset.
- **NYPD response drift:** quantify where the +19.5% MRT increase lives (traffic vs noise vs drug activity) and model staffing; 1.72M complaints means even +0.2h is ~344k incremental waiting hours/yr.
- **DSNY Missed Collection reversal:** the 2024 improvement (route changes?) was not sustained (+30.5% in 2025). Document what changed and why it regressed.
- **Bronx housing-quality cluster:** field study of noise/heat/water complaints in Bronx CDs 3–7 and 12; check correlation with building age and HPD registrations.
- **Helicopter noise:** verify the policy/enforcement driver behind −65% so it can be credited and replicated (candidate: NYC's quiet-helicopter/fly-neighborly rules).
- **Aug-2026 hydrant emergency:** confirm the heat event and hydrant-open response; evaluate pre-cooling/outreach to prevent recurrence.
- **Cannabis Retailer:** track the new OOS category monthly — a fast-growing, policy-sensitive series the dashboard should feature.
- **Parks turnaround:** document what drove −66% MRT (staffing, triage, volume decline) for replication across agencies.
- **Data pipeline:** add rename-pair detection (Smoking/Smoking Or Vaping), program-lifecycle flags (New Tree Request, Electronics Waste, Outdoor Dining), and new-category alerts (Cannabis Retailer) to the insights engine.

Appendix: Metric Definitions

Metric	Definition
Volume	Count of non-trailing service requests in a month/period
MRT (median response time)	Median of (closed_date − created_date) in hours, closed & valid records only
p75 / p90	75th / 90th percentile of the same response-time distribution
Open share	% of requests still open at snapshot (excluded from response stats)
YoY %	(2025 value − 2024 value) ÷ 2024 value × 100 (2024 vs 2023 where labeled)
Theil-Sen slope (%/yr)	Robust slope of the 44-month monthly series ÷ series mean × 12
Mann-Kendall p	Monotonic-trend significance test (p ≤ 0.05 reported)
Per-capita rate	Volume ÷ residential population × 1,000
Seasonal ratio	Calendar-month average ÷ annual average (1.0 = average month)
Spike	Month with volume > 2× series mean and z-score > 3
Trailing records	Records in the final partial week before dataset max date (excluded)

Generated by the Pulse311 analysis pipeline from the full 12.95M-record NYC 311 store (2023-01 → 2026-08). All charts produced from the underlying dataset; no external data used.