MEMO

TO: File

FROM: Chicago Transit Authority Planning & Innovation Department

DATE: March 17, 2026

RE: CTA Ridership Process Change and 2025 Ridership Restatement

---

Effective March 20, 2026, The CTA has restated its 2025 ridership back to January 1, 2025 to include several changes:

- Actual recorded counts replaced estimated ridership counts from the newly implemented Scheidt and Bachman cash farebox system.

- A new automatic-passenger counter (APC) factoring process replaced the old video-based factoring process to improve estimated undercounts.

- Underpaid rail rides were added to station level counts and were refigured using 2025 rates instead of 2024 rates. Original 2025 data included the introduction of Underpaid counts at the system level only and were based on data collected in 2024.

- The ridership restatement resulted in a 2025 annual total of 338.0M rides, an increase of 18.9m (5.9%) from the original 2025 count of 319.2M. . Bus increased by 15.7m (8.5%) from 184.0m to 199.6m and rail increased by 3.2m (2.4%) from 135.2m to 138.4m rides.

- The monthly public ridership pdf report are revised to include a breakout of Paid and Underpaid rides at the bus and rail mode total levels on its summary page. The 2025 338m total system rides includes 40m Underpaid rides on bus, equivalent to 20% of the 199.6m bus total, and 6.2m Underpaid rides on rail, which is equivalent to 5% of the 138.4m rail total.

New Ridership Count Process and Update to 2025 Numbers

CTA installed a new cash farebox system between early 2024 and early 2025. The farebox is used by bus operators to collect cash, and record cash and free rides, including both authorized free rides and unauthorized free rides, when no payment occurs. This procedure was also used with the previous farebox system.

CTA historically applied adjustment factors to the farebox-recorded rides (both Paid and Underpaid) to account for operator undercounting. These factors were previously developed through video observations comparing video-based passenger counts with farebox totals.

The transition to the new farebox system required updated adjustment factors because the capture rates of cash and free rides differed between the old and new systems. CTA replaced the video-based process with an Automatic Passenger Counter (APC)–based methodology to meet this need. APCs have been FTA-approved at CTA since the 2000s and provide systemwide coverage and more frequent, representative comparisons than the previous video-based sampling approach. Most American transit agencies use APCs for this purpose.

During 2025, farebox ridership was temporarily estimated while the new system was in operation but before new adjustment factors were established. This allowed time to develop the APC-based methodology and for farebox usage patterns to stabilize.

Once finalized in 2026, the new methodology was applied retroactively to 2025 data, replacing earlier estimates with actual farebox counts and their respective APC-based factors.

CTA applied the new methodology beginning January 1, 2025 and replaced the earlier reported data because:
• 2025 data remain draft for FTA reporting
• Farebox installation was largely completed by March 2025
• Most 2024 rides were recorded on legacy fareboxes
• A calendar-year start supports clean and consistent year-over-year comparisons

The updated methodology increased reported 2025 ridership by approximately 18 million rides. These rides represent free trips and therefore have no associated fare revenue. The increase is due mostly to growth in unauthorized free rides which were estimated at 2023-2024 rates for 2025 reporting.

How the APC Bus Factors Work

The APC factor is derived by dividing an APC-based ridership count model for total ridership by the fare collection system's total ridership count. The factor is derived using a rolling 12-months' worth of data comparisons producing a highly robust yet constantly updating value that provides accuracy, stability, and confidence.

Results showed that APC-based ridership estimates are approximately 10% higher than totals recorded by the fare collection systems. This difference is largely attributable to operator undercounting of unauthorized free rides. No systemic undercounting was identified in the Ventra system; therefore, the overall 10% gap can be interpreted as

roughly a one-third undercount within cash farebox collections. To reconcile this discrepancy, a 0.5 adjustment factor was applied to total cash farebox counts (including free rides), aligning the combined fare collection totals with APC estimates.

These rides are then split proportionately based on the rate of manually counted authorized and unauthorized free rides to estimate the number of missing authorized and unauthorized rides. The estimated missing unauthorized free rides are included in the Underpaid category along with the explicitly captured unauthorized free rides and short cash fares.

APCs are installed on 100% of the fleet but some data is excluded as part of quality control process, and as such, 100% counts using APC cannot be produced. Therefore, APC averages are multiplied by the total known actual trips operated to arrive at total boardings.

The most precise, reliable, and informative approach for this technique was to figure averages at the route, direction, month, day type (e.g. Weekday), and time period (e.g. AM Peak) level multiplied by the actual trips in the same grouping. This produced the best balance between drill-down detail and scalable reliability. The APC total is then figured by simply summing each subgroup's computed total together.

Why Use an AFC-APC Hybrid Methodology Instead of APC Alone

CTA is in the uncommon position of having two high-quality data sources for measuring ridership: Automated Fare Collection (AFC) data and Automatic Passenger Counter (APC) data. Each has distinct strengths and limitations, and a hybrid approach leverages the best of both.

AFC data—including Ventra card taps, contactless payments, cash fares, and operator-logged free rides—is high quality, granular, fast-reporting and largely complete. It provides strong coverage across time periods, geographies, and fare types, and is typically nearly complete in its reporting by the next day. However, it consistently undercounts ridership because some trips—especially unrecorded fare evasion—are not captured. These missing rides are currently estimated at about 10% of total ridership, indicating that AFC data still reflects the vast majority of actual usage.

APC data, collected from onboard bus sensors, is also highly granular and offers an independent measure of total boardings. While generally reliable, APC data can be noisy at a detailed level. Some sensors malfunction or produce erroneous readings, and the data requires additional processing and quality control steps that can delay its availability. APC also depends on accurate matching to scheduled vehicle trips; deviations such as reroutes can lead to discarded data and gaps in coverage.

AFC data alone tends to systematically undercount ridership, while APC data, though accurate in aggregate, can be incomplete in a more random way that introduces noise and volatility at finer levels of detail. The hybrid approach addresses both issues by using AFC's near-complete, timely coverage as the foundation and leveraging APC to correct for the consistent undercount in total ridership.

In practice, AFC provides the baseline ridership distribution, while APC informs a systemwide adjustment factor. Because uncounted rides represent a relatively small share of total ridership, this approach preserves the strengths of AFC for most analyses while using APC to fill the gap.

Applying a single, systemwide APC factor calculated over a longer time horizon improves stability and fairness, reducing sensitivity to short-term APC anomalies. At the same time, anchoring this factor in APC data ensures it reflects real-world conditions.

New Distinction of Paid vs. Underpaid

Starting with January 2025, the summary page of our monthly ridership reports posted at transitchicago.com includes a breakout of bus and rail ridership by 'Paid' and 'Underpaid' rides in order to provide transparency on the existence and scale of fare evasion on our system.

The Paid category includes rides where the authorized fare was fully paid, including authorized reduced fare rides and authorized zero-cost rides.

The Underpaid category includes rides where no payment or some payment less than the authorized amount was made. This includes rides that were explicitly captured as unauthorized free rides and short cash fares, as well as modeled estimates of undercounted unauthorized free rides.

Rail Underpaid Counts Now Included in Station Counts

CTA rail station counts now include Underpaid rides beginning with January 1, 2025, which are comprised only of video-based estimates of unauthorized free rides. CTA first included Underpaid rail rides in 2025 beginning with January 1, 2025 but the counts were included only at the system level. Effective March 20, 2026, CTA replaced the older system-level methodology with the newer station-level counts beginning with January 1, 2025.

Random stations and times across the system were selected for video review using a stratified sampling approach to reliably estimate branch-level evasion rates. Adjustment factors were calculated by comparing total rides observed in video to fare collection

system totals. Each station's paid entries were then multiplied by its branch-specific Underpaid factor to estimate the number of Underpaid entries at that station.
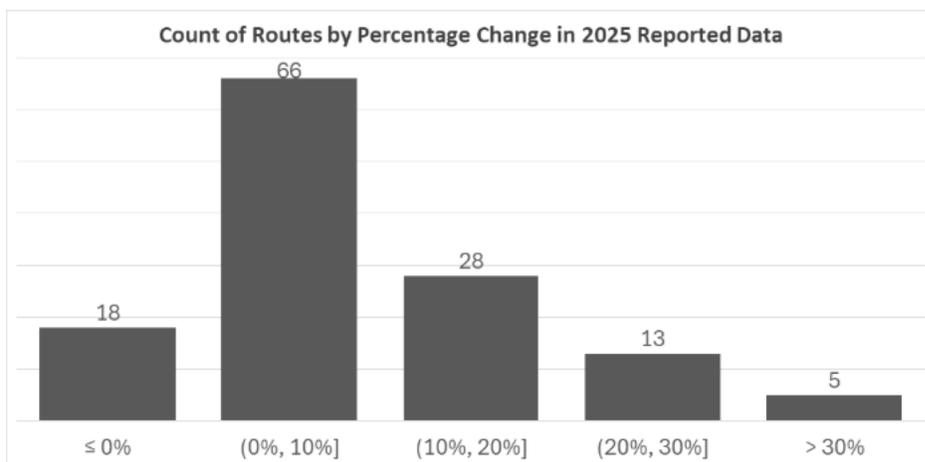
Video observations were performed in 2023, 2024, and 2025. The originally reported ridership for 2025 was based on a rate from the 2024 observations. The newly reported data for 2025 uses the rates found via the 2025 observations. We intend to make regular updates in the future.
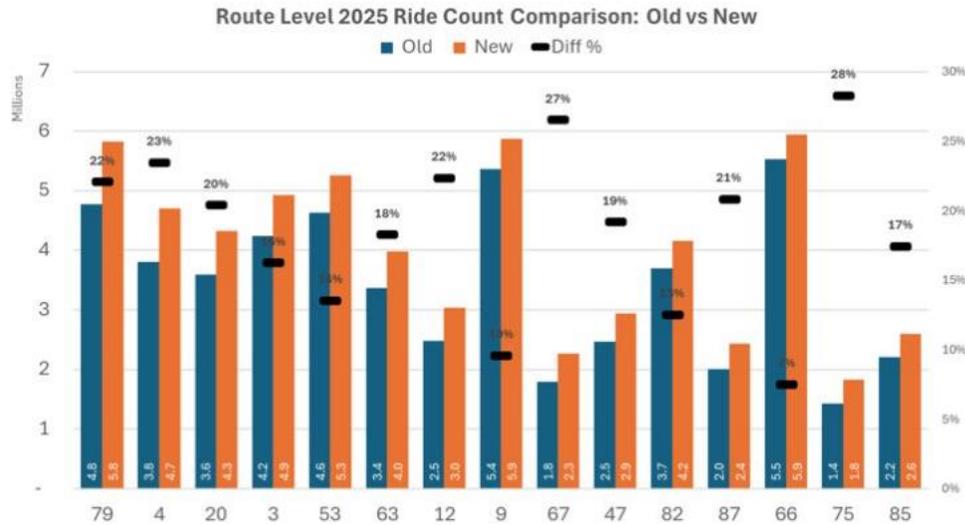
Data Impacts

Bus System: Reported bus system ridership for calendar year 2025 increased by 15.7m or 8.5% from 184.0 million rides originally reported to 199.6 million rides using the new methodology.

Bus Routes: There is significant variation in route-level changes driven by the shift in methodology. The new approach adds rides proportional to the recorded farebox count rather than the overall total. As a result, routes with higher levels of fare evasion saw larger increases, while routes with a high share of Ventra-paid rides—and relatively low levels of cash and manually recorded free rides—saw smaller increases or slight decreases.

Overall, about 66 routes changed within a 0–10% range, which was the most common outcome. Nearly 30 routes increased by 10–20%, and roughly 18 routes increased by more than 20%. The routes with decreases are still considered more accurate, as the previous method overstated ridership by using Ventra totals as the factor base rather than accounting for undercounts in cash and manually recorded free rides.

Count of Routes by Percentage Change in 2025 Reported Data

Category	Count
≤ 0%	18
(0%, 10%]	66
(10%, 20%]	28
(20%, 30%]	13
> 30%	5

The chart below shows the routes that had the highest absolute value increase and their respective percentage changes.

Route Level 2025 Ride Count Comparison: Old vs New

■ Old ■ New ━ Diff %

Route	79	4	20	3	53	63	12	9	67	47	82	87	66	75	85
Old	4.8	3.8	3.6	4.2	4.6	3.4	2.5	5.4	1.8	2.5	3.7	2.0	5.5	1.4	2.2
New	5.8	4.7	4.3	4.9	5.3	4.0	3.0	5.9	2.3	2.9	4.2	2.4	5.9	1.8	2.6
Diff %	22%	23%	20%			18%	22%		27%	19%		21%		28%	17%

Rail System: Reported rail system ridership for calendar year 2025 increased by 3.2m or 2.4% from 135.2 million rides originally reported to 138.4 million rides, with the increase due to the use of more recently collected video observations from Fall 2025. The originally reported 2025 ridership used rates from video observations made in 2024.

Rail Branches & Rail Stations: The revised entry counts for most branches are at 5% increases or less. The Red Line's Dan Ryan branch and Green Line's South Side branches (including South Elevated, Ashland and East 63rd) are in the 25-35% increase range.   This difference is driven by variable evasion rates across the branches.

Branch Level 2025 Ride Count Comparison: Old vs New