Flock's "anonymization" process is likely ineffective

Research Report · October 13 · Felix Gallo, for UnflockWausau.org

Wausau's 2023 contract lets Flock Safety keep and use "anonymized" data from the city's license plate cameras with no time limit, on the condition that a person "can no longer be identified directly or indirectly" (Sections 1.1 and 4.3). On the public record, Flock's anonymization is unlikely to meet that condition. That is this report's assessment, drawn from Flock's own published material and from peer-reviewed research. No one outside Flock has examined its systems, so it is an assessment and not a proven fact. Three findings support it.

Flock advertises measurements that anonymized data cannot produce. Flock has marketed "unique and total vehicle counts", has said it "measures actual unique vehicles using license plate readers", and has promoted "a continuous, vehicle-level dataset", repeat-visit rates, dwell time and visitor origin. Each of these requires Flock's systems to tell one vehicle from another, and several require recognizing the same vehicle again later. Flock could make such measurements while it still holds the plate records and keep only the totals. It has not said that it does, and it has not said how long the identifier it uses survives.

Flock publishes no method. As of October 12, 2026, no public Flock document reviewed for this report describes how the company anonymizes, de-identifies or aggregates camera data. Every description states an outcome ("stripped of all metadata and identifying information", "aggregate, de-identified") and none states a method, a named standard, a minimum group size or an independent audit. The contract's own yardstick is an undefined reference to "commercially available standards".

The research runs against the claim. A large peer-reviewed literature finds that location records which lose the plate but keep time, place and vehicle description can be re-identified. The federal standards agency NIST recommends "avoiding the word anonymization" altogether.

Alders will hear the opposing point, and it is sound as far as it goes: traffic counts aggregated over large groups and long intervals, with small counts suppressed and the source records deleted, carry little risk. Flock says its Traffic Analytics product holds only aggregate statistics, with no plates and no individual vehicle records, kept for up to five years. Nobody outside Flock has verified that, and the product as Flock describes it reports counts in 15-minute intervals at individual cameras, with no published minimum count.

Several things remain unknown. **No public source establishes whether data from Wausau's cameras is, or is not, in Traffic Analytics**; the police chief and the Marathon County sheriff were asked in September 2026 and no answer has been reported. Wisconsin has no license-plate-reader statute. No court, regulator or auditor was found to have examined Flock's derived data, and the breach claims made by Sheboygan and the Racine County Sheriff are untested. Only Flock holds the missing facts, which is why this report ends with written questions the city can put to the company.

Where each key claim stands on the evidence

This report keeps four kinds of statement apart and labels them. **Confirmed** means a primary document was found and reviewed: a contract, statute, council resolution or Flock's own page. Where the primary document is Flock's page, what is confirmed is that Flock says it, not that it is true. **Reported** means a named news outlet or official says it and the underlying document was not available for review. **Flock's position** means a statement by Flock or its named executives. **Inference** means

a conclusion that is not otherwise sourced but is implied by the facts. Quotations and figures were checked against the linked sources on October 12 and 13, 2026. Where a source is behind a paywall or was available only in part, the text says so. Every source is linked so that readers can check it.

Claim	Status on October 12, 2026	Basis
Flock's anonymization meets the test in Wausau's contract	**Unlikely.** This report's assessment, an inference	Flock's marketing of unique-vehicle measures; no published method or audit; re-identification research
Wording of Wausau's Sections 1.1 and 4.3	Confirmed, from an unsigned council-packet copy	City packet for October 24, 2023; the signed copy was not available
Flock anonymizes by a described, testable method	Not established	Flock states outcomes only; no method published
Traffic Analytics aggregates are kept up to five years	Confirmed that Flock says so	Flock blog and marketing pages
Traffic Analytics holds no plates or individual vehicle records	Flock's position; unaudited	Flock blog, September 2026
A Flock account executive offered Sheboygan Public Works up to five years of traffic data from the city's 15 police cameras	Confirmed as recited in Sheboygan's council resolution; the email itself is not public	Resolution 100-26-27
Racine County's data is in the dataset, and Flock regards stripped data as its own	Reported, second-hand, by county officials; no Flock statement adopts or denies it	TMJ4; Journal Sentinel via other outlets
Wausau's data is in Traffic Analytics	**Unknown; no public source either way**	Question put to the police chief and the sheriff on September 4, 2026; no answer reported
Flock sells camera-derived data to brokers, insurers or other private buyers	No public evidence; Flock denies selling customer data; no private buyer has been named	Wausau Pilot & Review; Flock statements
Plate-stripped but linkable per-vehicle records can be re-identified	Supported by peer-reviewed studies; applying them to Flock is inference, since no study has tested Flock's data	Section on the science below
Properly aggregated counts are low-risk	Supported by the literature and by regulators, on stated conditions	Section on the science below
A court, regulator or auditor has examined Flock's derived data	None found	Legal record below

Wausau's Section 1.1 sets a strict test with no named standard

Where the text is. Wausau's agreement is in the Common Council packet for October 24, 2023. The Order Form is at PDF page 156, Section 1.1 at page 161 and Section 4 at pages 165–166 (Wausau council packet, Oct. 24, 2023).

Confirmed: what the packet copy says. Section 1.1 defines "Anonymized Data" as Customer Data "permanently stripped of identifying details and any potential personally identifiable information, by commercially available standards which irreversibly alters data in such a way that a data subject (i.e., individual person or entity) can no longer be identified directly or indirectly." Section 4.3 gives Flock the right to "collect, analyze, and anonymize Customer Data and Customer Generated Data to the extent such anonymization renders the data non-identifiable", for the services and related technologies, "including the training of machine learning algorithms". The city grants a "non-exclusive, worldwide, perpetual, royalty-free right to use and distribute such Anonymized Data" to improve the services and for "other development, diagnostic and corrective purposes,

and other Flock offerings". The section ends: "Flock does not own and shall not sell Anonymized Data." Section 4.1 separately says all rights in Customer Data "belong to and are retained solely by Customer", limits Flock's license over it to acts necessary to provide the services, and says "Flock does not own and shall not sell Customer Data." Customer Data includes the Footage (Section 1.3), and Footage is "still images, video, audio and other data captured by the Flock Hardware" (Section 1.10). The Order Form sets "Retention Period: 30 Days", an initial term of 60 months, a 24-month renewal term and an effective date of 12/15/2023 (Wausau council packet).

Confirmed: what the packet copy does not say. The agreement defines a Retention Period only for Customer Data (Section 1.13); **nothing states how long Anonymized Data is kept or requires its deletion**. It does not define "sell", "distribute", "anonymize" or "commercially available standards". Section 1.14 defines "Vehicle Fingerprint" as "unique vehicular attributes" such as type, make, color, state registration, "bumper stickers, decals, roof racks, and bike racks", but does not say whether those attributes must be removed for data to count as anonymized. The survival clause (Section 7.3) lists Sections 1, 3, 5, 6, 7, 8.3, 8.4, 9, 11.1 and 11.6; it does not list Section 4, although the Section 4.3 license calls itself "perpetual". The "sole discretion" sentence sometimes quoted in this debate sits in Section 5.2 and concerns "Flock IP", which Section 1.7 says "does not include Footage"; Wausau Pilot & Review published a clarification to the same effect. Section 5.1 treats non-public data "collected by Flock via Flock Services", including "geolocation information", as the city's Proprietary Information and says such information is to be returned, destroyed or erased at termination. Section 9.1 caps Flock's liability at fees paid or payable in the prior twelve months, with an exception for gross negligence or willful misconduct; Section 11.6 applies the law of the customer's state; Section 11.4 requires modifications "in a writing signed by both Parties"; Section 7.2 allows termination for uncured material breach on 30 days' notice with a pro-rata refund; Section 11.16 allows termination for non-appropriation on 30 days' notice "without penalty or other cost" (Wausau council packet; Wausau Pilot & Review, Sept. 4, 2026).

Confirmed caveats about the copy. The packet copy is unsigned: its signature blocks are blank DocuSign placeholders. It is dated on its face "the 16 day of September 2023", and the Council's resolution authorizes a contract "in substantial compliance with" the attached agreement, which leaves room for differences in the executed version. The same resolution recites that the city first entered a one-year agreement with Flock on January 10, 2023, for 20 cameras, expiring December 31, 2023; that earlier agreement was not available for this report, so the terms governing data captured during 2023 are unverified. The City Clerk holds the documents that settle both points (Wausau council packet). **Reported:** the Council approved the five-year, $250,000 agreement 9–1, it runs to December 15, 2028, and the cameras capture about 3 million vehicle images a month (Wausau Pilot & Review, Sept. 4, 2026).

Six contract generations end with no derived-data category at all

Flock's paper has changed repeatedly, and the label on the derived-data category has changed with it. The table records document text only. Version A is Marathon County's 2022 agreement, which was not available; it is represented only by the phrases Wausau Pilot & Review has quoted from it. The versions from October 2024 to February 2026 are cited from copies archived by the site Footnote4a.

Version	Derived-data term	License	Standard named	Retention limit on derived data	No-sale wording
A. Marathon County agreement, 2022 (as quoted in news reports)	"Aggregated Data"	Use in "other Flock offerings, and crime prevention efforts"; rest of clause not reviewed	Not reviewed	Not reviewed	"Flock shall not sell Agency Data or Aggregated Data."
A2. Government Agency Agreement, October 2022 to March 2023	"Aggregated Data"	Perpetual; "use and distribute"; "other Flock offerings, and crime prevention efforts"; machine-learning training	"commercially available standards"	None stated	"does not sell Aggregated Data"

B. Master Services Agreement, 2023 (Wausau) and online terms of October 4, 2024	"Anonymized Data"	Perpetual; "use and distribute"; "other Flock offerings"	"commercially available standards"	None stated	"does not own and shall not sell Anonymized Data"
C. Online terms, December 19, 2025	"Training Data": "a small fraction of images"	Perpetual; "solely to improve Flock Services"; internal use	None	None stated	"never sold or shared with third parties"
D. Online terms, February 16, 2026	None	Perpetual license over all Customer Data to "support and improve" products	None	None stated	None
E. Online terms, August 21, 2026 (current)	None; outputs and analyses are "Flock Property"	Same as D	None	None stated; Confidential Information deleted within 90 days on request after termination, with exceptions	"Flock shall not sell Customer Data" (Customer Data only)

Sources: Southgate, Ky. agreement, March 2023; Wausau council packet; October 2024 terms; December 2025 terms; February 2026 terms; current terms; Wausau Pilot & Review, Sept. 24, 2026.

Confirmed. The current terms contain no definition of anonymized, aggregated or training data. Section 1.12 defines "Flock Property" to include "any derivative works, intermediate or final outputs, analyses, reports, models, or other results generated by or through the Flock Services", and gives customers no right to copies of them. The restored sentence reads "For the avoidance of doubt, Flock shall not sell Customer Data" (Flock Terms and Conditions, Aug. 21, 2026). **Flock's position** on the February deletion is that the no-sale sentence was removed "because it was redundant, not because our position changed", and that the improvement right "must extend beyond the duration of a single customer's contract" (Flock blog, Feb. 17, 2026).

Which text governs Wausau. Flock's chief legal officer, Dan Haley, wrote on August 21, 2026 that the online terms "do not impact customers who have executed a static Master Services Agreement" (Flock blog, Aug. 21, 2026). **Inference:** combined with Section 11.4, the operative derived-data clause for Wausau is Section 4.3 of the 2023 agreement, and neither the February 2026 loosening nor the August 2026 additions apply automatically. The same holds for retention. Flock announced a seven-day default in August 2026, and its chief executive, Garrett Langley, wrote that "Existing customers will keep their current, democratically approved retention periods" (Flock blog, Aug. 13, 2026). Whether any later order form signed by the city pulled in newer online terms is a question for the City Attorney; no evidence was found either way.

Flock's "does not sell" statements name Customer Data, not its derivatives

Flock's position. Langley wrote on August 13, 2026 that "our customers own the data captured by their ALPR cameras" (Flock blog, Aug. 13, 2026). Haley wrote that "Flock does not and will not sell Customer Data" (Flock blog, Aug. 21, 2026). Flock's unattributed September 2026 statement to Wisconsin media was "Customers own and control their data and Flock does not sell it" (WPR, Sept. 9, 2026). None of these statements says who owns anonymized or aggregated derivatives. Flock's plain-English guide says the license purposes "are a ceiling, not a floor" and exclude "marketing or sale to third parties", but it also says Flock "may use data in aggregate or technical ways", and it does not mention Traffic Analytics (Flock data-ownership guide).

Reported. The claim that Flock regards stripped data as its own property comes only from Racine County officials relaying what Flock told them. The Milwaukee Journal Sentinel, as excerpted by Slashdot, reported that officials "were told the company believed" such data was the company's property; the sheriff's spokesman, Lt. Michael Luell, said "But they had this legal theory" (Slashdot excerpt, Sept. 5, 2026). The Journal Sentinel article itself was not available for review, and no direct quotation of Flock taking that position was found. One related document exists outside plate readers: a Flock drone-service

addendum posted by the city of Fulshear, Texas, carrying an electronic-signature stamp from October 2025, states that "Flock shall own all rights to" "any aggregated and anonymized data extracted or derived from the Flock Services". That wording is not in Wausau's agreement (Fulshear order form and addendum).

Inference. Three points follow from the texts. First, a statement that Flock does not sell "Customer Data" is not, on its words, a statement about anonymized or aggregated data, because the contracts treat those as separate categories. Second, Wausau's Section 4.3 forbids selling Anonymized Data but licenses Flock to "use and distribute" it in "other Flock offerings" without defining either verb, so whether charging for an analytics product built from such data is a forbidden sale or a permitted distribution is a legal-interpretation question the text does not answer. Third, an ownership theory of the kind Racine describes sits badly with Wausau's own clause, which says Flock "does not own" Anonymized Data; under Wausau's 2023 text, such a theory would have to rest on the argument that aggregate statistics are neither Customer Data nor Anonymized Data. These are questions for the City Attorney, not conclusions.

No Flock document describes the stripping

Confirmed (by absence). Flock's terms, Privacy Policy, plate-reader policy, Evidence Policy, Customer InfoSec Addendum, data-ownership guide, trust pages and FAQ were reviewed on October 12, 2026. None describes a de-identification method: no defined plate-removal process, hashing (replacing a plate with a code), aggregation threshold, minimum group size, formal privacy technique such as k-anonymity or differential privacy, or blurring of people (Flock Privacy Policy; Flock LPR Policy; Customer InfoSec Addendum). Flock's help-center site was not available for review, and Flock says third-party audit reports are available to customers under a non-disclosure agreement; neither is covered here. **Reported:** the most specific account is second-hand. Central Current reported in December 2025 that Flock's communications director listed process images, plate numbers, timestamps, timeframes, GPS coordinates, user-entered text, uploaded files and search feedback as what Flock anonymizes; the list does not say how images are altered, or whether camera identity, coarse location or vehicle attributes are kept (Central Current, Dec. 10, 2025). **Inference:** because Section 4.3 conditions Flock's license on anonymization that "renders the data non-identifiable", the absence of any published method means the city cannot verify from public documents whether that condition is met.

Traffic Analytics keeps five years of statistics Flock alone describes

Flock's position. Flock's fullest account is an unsigned post labeled "Published: September 5, 2026", posted after the Wisconsin controversy began. It says Traffic Analytics "was released in 2025", is "a separate product from our LPR platform", and is sold to law enforcement agencies, transportation departments and municipalities. It says the product "uses existing Flock camera infrastructure" and contains vehicle counts "across 15-minute, hourly, daily, monthly, and annual intervals", vehicle mix in six categories, "the share of vehicles registered in different states", and group speed statistics in 15-minute intervals. It says "There are no individual vehicle records available in the analytics dashboard" and that totals "cannot be used to retrieve a plate image or search for an individual vehicle". On retention: "Historically, Traffic Analytics has retained the aggregate statistics for 5 years", while source plate-reader records are deleted at the customer's retention period. On access: "The agency that owns the source data also decides who may have access", and "Flock does not sell the data" (Flock blog, "What is Traffic Analytics"). Flock's marketing pages say "All data is securely stored for five years" (Flock, Traffic Analytics for City Managers). The post describes what the product displays; it does not describe the processing pipeline, does not say who owns the aggregate statistics, and does not address opt-out, deletion of aggregates at termination, or which agencies' cameras are included.

Confirmed: Flock's earlier material describes more than the September post. Flock's January 6, 2025 press release with the traffic-software firm MS2 describes "unique and total vehicle counts" generated with Vehicle Fingerprint software and calls the data "anonymized, aggregated, and encrypted" (GlobeNewswire, Jan. 6, 2025). A reseller listing says the product

"captures unique and total vehicle counts across the LPR network you already use" (SoftwareOne listing). A Flock post for transportation engineers says "Flock Safety measures actual unique vehicles using license plate readers" and refers to "a continuous, vehicle-level dataset" (Flock blog, Nov. 20, 2025). A Flock post for commercial property owners advertises "anonymized data on vehicle volume, speed, and dwell time", "Visitor Origin" and "Repeat Visit Patterns"; it says visitor origin is "based on anonymized vehicle movement data" and that "High repeat vehicle rates may reflect strong loyalty" (Flock blog, July 2, 2025). Flock's site lists an "Origin and Destination Analysis" offering by name only (Flock transportation use-case page). The September 2026 post does not use the word "unique" and does not mention repeat visits, dwell time or origin.

Inference. This is the strongest public indication that Flock's anonymization does not work as the word suggests. A unique-vehicle count requires removing repeat sightings of the same vehicle, which needs some per-vehicle key (a plate, a coded form of the plate or a Vehicle Fingerprint signature) for at least the counting period. Repeat-visit rates need that key to persist from one visit to the next; dwell time needs an entry read matched to an exit read; origin measures need the same vehicle matched at two places. None of these figures can be computed from data in which vehicles cannot be told apart. At the point they are computed, the data is therefore not anonymous, and a key that outlives the count is a pseudonym, which European regulators and Federal Trade Commission staff do not accept as anonymization (see the research section below). If unique counts or repeat rates cover periods longer than the customer's retention period, which is 30 days in Wausau, the key must have been kept longer than the plate records themselves; Flock's material does not say what periods they cover. The remaining possibility is that Flock does the matching while it still holds the plate records and keeps only totals. Public sources do not say which, and Wausau Pilot & Review observed the same gap: Flock "has not publicly explained how long any intermediate identifiers survive" (Wausau Pilot & Review, Sept. 24, 2026). Flock's marketing to businesses does not say whose cameras supply those analytics; no document was found that shows a private customer receiving analytics derived from police cameras.

Sheboygan's resolution dates the Flock email to March 24, 2026

The date. News accounts differ on when Flock's email to Sheboygan was sent: FOX6 reported the mayor as saying it came earlier this summer, and separately relayed Kenosha's police chief saying "back in March" (FOX6, Sept. 3, 2026; FOX6, Sept. 4, 2026). This report follows the council resolution, which reconciles the accounts: the email is dated in March, and police learned of it in July. **Confirmed (as recited in the resolution):** Sheboygan Resolution 100-26-27, dated September 8, 2026, states that the Council authorized a Master Services Agreement with Flock on December 18, 2023 for 15 cameras; that the agreement says Flock "does not own and shall not sell Customer Data" and does not sell Anonymized Data, with a 30-day retention period for Customer Data; and that **in late July 2026 police learned of a March 24, 2026 email** from a Flock account executive offering to sell the Department of Public Works anonymized traffic volume, vehicle type and speed data, "up to five years of data utilizing the existing 15 cameras". The resolution says the police department did not know of or consent to this and believes it breaches Section 4, "Data Use and Licensing" (Sheboygan Resolution 100-26-27, council packet copy). The copy linked here is hosted by a television station; the Sheboygan city clerk holds the official copy. The email itself has not been published.

Reported. Racine County Sheriff Christopher Schmaling ordered all his office's Flock cameras removed on September 4, 2026. His release, as quoted by TMJ4, said "Flock generates a separate data set from information collected by its cameras", markets it through Traffic Analytics, and "has confirmed that this aggregated dataset is retained for up to five years" (TMJ4, Sept. 4, 2026). CBS 58 reported his statement that the dataset is marketed to other government and private customers; no buyer was named (CBS 58, Sept. 4, 2026). Luell said, in a report published October 7, that "Flock believed that they had created a new data set" and "We're not in agreement with Flock using any sort of our data" (Spectrum News 1, Oct. 7, 2026). **Flock's position** in reply, given without a named spokesperson, was that Traffic Analytics is separate from the plate-reader platform, does not include plate data, and that Flock does not sell the data (FOX6, Sept. 7, 2026).

Inference. The Sheboygan offer and Racine's account both imply that statistics were being generated and stored for cameras of police agencies that had not bought Traffic Analytics and say they were not told. That is the agencies' account; Flock has neither confirmed nor denied default collection. Sheboygan's cameras date from early 2024 (City of Sheboygan news flash, Aug. 25, 2026), so "up to five years" most likely describes the product's retention window, not the data on hand. The Sheboygan offer can be read two ways: it went to another department of the same city that owns the cameras, which fits Flock's statement that the owning agency controls access; it also went there without the police department's knowledge, which does not. Sheboygan's agreement is of the same generation as Wausau's, on the resolution's description of its language.

Wausau's inclusion is not established by any public source

Unknown. No public source establishes whether data from Wausau's 20 cameras, or Marathon County's, feeds Traffic Analytics. Wausau Pilot & Review reported on September 4, 2026 that it had sent Police Chief Matt Barnes and Sheriff Chad Billeb questions, including whether local camera data is in Traffic Analytics, and reported no answer (Wausau Pilot & Review, Sept. 4, 2026). Its September 24 article says the sheriff had not answered as of September 15 and reports no answer for Wausau (Wausau Pilot & Review, Sept. 24, 2026). **Reported:** Barnes said on September 28, "Flock doesn't sell our data to anyone else. It's our data", and that Flock guaranteed deletion of data and images after 30 days; the article does not record him addressing anonymized or aggregated data (Wausau Pilot & Review, Oct. 1, 2026). **Inference:** Section 4.3 is the clause Flock would rely on to justify such a product, but the existence of the clause is not evidence that the data is in the product. Racine County is the only agency for which inclusion has been reported as confirmed by Flock, and that report is second-hand.

No evidence of sale to brokers. Wausau Pilot & Review concluded on September 24 that no public evidence shows Flock selling identifiable plate records to brokers or commercial buyers, and that no public source names a private buyer of the Racine-type dataset (Wausau Pilot & Review, Sept. 24, 2026). This report found none either. That is an absence of evidence, not proof that no sale has occurred. What is documented is narrower: Flock sells Traffic Analytics subscriptions built on plate-reader cameras, and the agencies call that selling the data while Flock calls it selling a separate product. Both descriptions fit the documented facts; which is legally correct under a given contract is unresolved.

Training images: the "less than 1%" promise left the contract

Confirmed: three stages. Wausau's 2023 agreement mentions machine-learning training only in Section 4.3, as a use of Anonymized Data, meaning data that meets the Section 1.1 test (Wausau council packet). Flock's Privacy Policy, last updated August 1, 2025 and still live, says Flock "may use a small fraction (less than 1%) of images", "stripped of all metadata and identifying information", for machine learning; that Training Data is "used internally"; that "These images are never sold or shared with third parties"; and that it is "maintained separately" (Flock Privacy Policy). The December 19, 2025 terms put a version of that in the contract, without the percentage (December 2025 terms). The February 16 and August 21, 2026 terms removed all of it and substituted a perpetual license to use all Customer Data to "support and improve Flock's products and services" (February 2026 terms; current terms). Flock's plate-reader policy of June 30, 2026 still repeats "less than one percent" (Flock LPR Policy). Langley's August 13 post says models are "retrained weekly" (Flock blog, Aug. 13, 2026). **Inference:** the policies are unilateral statements Flock can change; for customers on the 2026 online terms the contractual limits are gone. Wausau's 2023 wording is, on paper, the strictest of the three, but whether Flock's pipeline meets it is not established by any document. "Less than 1%" is a share and not a small number: 1% of the reported 3 million images a month would be up to about 30,000 images a month from Wausau, an illustrative ceiling and not a known figure.

Reported: human annotators. 404 Media reported on December 1, 2025 that Flock had accidentally exposed an internal panel and worker guides showing overseas gig workers, many hired through Upwork, labeling footage for its machine-learning models. The full article is behind a paywall; according to a Slashdot excerpt, tasks included categorizing vehicle make, color and type, "transcribing license plates" and "audio tasks", and the guides showed vehicles with plates from New York, Michigan,

Florida, New Jersey and California. 404 Media said it was unclear exactly which footage the workers reviewed (404 Media, Dec. 1, 2025; Slashdot excerpt). **Flock's position**, found only as quoted by one Mississippi outlet, is that "trained human analysts" review "a small sample of anonymized image data", that annotators undergo background checks and sign non-disclosure agreements, and that they "only view images that have no personally identifiable information" (The Delta News, Dec. 8, 2025). **Inference:** a plate cannot be transcribed from an image with the plate removed. If the reported task list is accurate, some images shown to annotators had legible plates, and Flock's statement is consistent with that only if Flock treats a bare plate as not personally identifying. That is how its Privacy Policy frames footage: it says Footage "does not contain Personal Information that connects that image to an identifiable individual" and calls plates "effects" (Flock Privacy Policy).

What survives removal of the plate. Stripping metadata changes the fields attached to a file; it does nothing to the pixels. An image used to teach a model a vehicle's make and model shows the vehicle body, and with it the attributes Wausau's contract calls a "unique" Vehicle Fingerprint. Flock's FAQ says its "Vehicle Signature" technology lets users filter for "unique characteristics like roof racks, back racks, aftermarket wheels" (Flock FAQ). Neither the Privacy Policy nor the plate-reader policy says whether the plate is cropped or masked, or whether people in the frame are obscured (Flock Privacy Policy; Flock LPR Policy). **Inference:** an image that keeps those features is hard to square with a definition requiring that a person "can no longer be identified directly or indirectly", and Flock's material holds two positions at once: the attributes are distinctive enough to find one vehicle without a plate, and, in the published description of its data privacy page, its plate readers collect "vehicle data only — no biometrics, no PII" (Flock data privacy page).

Models outlast the footage. No Flock contract version reviewed obliges Flock to delete or retrain models built from a customer's images, and the current terms classify "models" as Flock Property (current terms). **Reported:** the only route to an opt-out found is a negotiated amendment. Idaho Falls' council unanimously approved one on July 30, 2026 stating that Flock may not use customer data to "train or improve any machine learning or AI models" (Post Register, July 30, 2026); Wilder, Idaho approved a similar amendment on July 14, where a Flock representative said the amendment lets cities opt out of machine-learning use (KIVI). Neither report shows Flock's signature or addresses models already trained. In Berkeley, council members proposed limiting the anonymized-data license to the contract term, and one proposed deletion of Customer Data "and any derivatives thereof" within 30 days with written certification; these were proposals, and on May 7, 2026 the Council removed the proposed Flock agreement from its resolution and extended the existing plate-reader contract for 12 months (Berkeley, Humbert memo; Berkeley, Bartlett proposal; Berkeley annotated agenda, May 7, 2026).

Linkable records re-identify; large, coarse aggregates do not

No recognized standard matches "commercially available standards"

None of the NIST, ISO, Federal Trade Commission, HIPAA, state-law or European sources reviewed uses "commercially available standards" as a term of art, and none certifies any technique as irreversible. NIST's 2023 guidance for government datasets says that because one cannot know whether some other dataset exists that would reverse the process, "this publication recommends avoiding the word anonymization"; it recommends formal privacy methods and re-identification studies before release (NIST SP 800-188). NIST's 2015 survey says "just a few observations of a person's location and time can be highly identifying" and that it found "no significant efforts to quantify the effectiveness of multimedia de-identification" (NISTIR 8053). ISO/IEC 20889 classifies techniques and sets no threshold (ISO catalog entry). The standards that do exist define de-identification by an outcome plus binding commitments. The FTC's 2012 test requires reasonable measures, a public commitment not to re-identify, and a contractual bar on recipients re-identifying (FTC privacy report, 2012); California and Colorado use the same three-part structure, and California's statute says aggregate information "does not mean one or more individual consumer records that have been deidentified" (CCPA statute text; Colorado SB 21-190). HIPAA's Safe Harbor, which applies to health data only and is an analogy here, requires removing "vehicle identifiers and serial numbers, including

license plate numbers", geography below state level, date elements other than year, and comparable images, or else a documented expert determination that risk is "very small" (HHS de-identification guidance). FTC staff wrote in 2024 that "data is only anonymous when it can never be associated back to a person" and that hashing does not anonymize (FTC staff blog, July 2024).

Inference. The phrase in Section 1.1 names no testable benchmark, but the outcome half of the definition ("irreversibly", "directly or indirectly") is strict; it tracks the European concept, under which regulators test for singling out, linkability and inference (Article 29 Working Party Opinion 05/2014). The city can hold Flock to the outcome it promised and ask how it is demonstrated. Wisconsin has no statutory definition to fall back on: its consumer data protection bill, 2025 AB 172, failed on March 23, 2026 (Wisconsin Legislature, AB 172), so the contract's wording is the only standard in force.

What the re-identification studies show, and their limits

The core finding is consistent across phone, payment-card, transit and plate-reader data: a handful of time-and-place points makes most individual traces unique. In 15 months of phone records for 1.5 million people, "four spatio-temporal points are enough to uniquely identify 95% of the individuals", and coarsening time and place reduced that only slowly (de Montjoye et al., Scientific Reports, 2013). In card records for 1.1 million people, four points re-identified 90%, and knowing one extra attribute (the price) raised risk by 22% on average (de Montjoye et al., Science, 2015). In Melbourne's public-transit release, where card numbers had been replaced with substitute identifiers, over 90% of cards were unique from the exact times of two trips in a year of data, and the authors re-identified themselves and a member of parliament (Culnane et al., 2019). The closest study to the Wausau question used a month of license-plate-recognition data from Guangzhou and found that five records uniquely identify about 90% of individuals even with time coarsened to half a day; those figures come from the study's abstract, because the full paper is behind a paywall (Gao et al., Transportation Research Part C, 2019).

Four limits apply to those numbers. They measure uniqueness of traces already linked by a pseudonym, not naming of people; naming takes outside information. A 2007 study of GPS traces from 172 drivers found home locations to a median error of about 60 meters but named only up to 5.2% of drivers using the public lookups of that era (Krumm, 2007); the FTC's 2022 complaint against Kochava alleged that night-time location combined with property records identifies people (FTC, Kochava). None of the headline studies used U.S. plate-reader data or a 20-camera network; Guangzhou's network is far denser. NIST itself cautions that such studies often "fail to distinguish between uniqueness in the sample and uniqueness in the population" (NISTIR 8053). And no published study was found that tests records stripped of the plate but retaining make, model, color and features; that is a gap in the published research.

Inference. These results transfer to Flock's data only if sightings of the same vehicle remain linkable, through a retained per-vehicle key, a hashed plate, or a description distinctive enough to match sightings. On hashing, regulators are direct: where the range of inputs is known, hashes "can be replayed", and "pseudonymisation is not a method of anonymisation" (Article 29 WP Opinion 05/2014); a study of hashed device addresses cites recovery of a million SHA-256 hashes in under 14 minutes (Ali & Dyo, 2020), and the space of valid license plates is far smaller. On appearance, computer-vision systems match the same vehicle across cameras at about 97% top-match accuracy on small benchmarks, falling to about 62% on a larger, harder benchmark full of look-alike vehicles (Amiri et al. survey, 2024). Appearance alone is a strong but imperfect linking key; combined with time, place and direction it is much stronger. Fleet figures show why descriptions vary so much in identifying power: the most common model, the Ford F-150, is 3.7% of vehicles on the road, and white led North American vehicle production at 31%, so a white F-150 is a crowd while most make-model-color combinations are shared by few vehicles before racks, stickers or damage are added (Ford Authority on Experian data; MyChesCo on Axalta's 2025 report). No Wisconsin make, model and color data was found to quantify this locally.

The case that aggregated counts are low-risk, and where it stops

The literature supports Flock's general proposition that aggregate statistics can be safe. European regulators accept that aggregate statistics may qualify as anonymous once the event-level raw data has been deleted (Article 29 WP Opinion 05/2014). The FTC lists aggregate data among reasonable de-identification measures (FTC privacy report, 2012). The Electronic Frontier Foundation, a critic of plate readers, writes that aggregation can preserve privacy when it yields "non-individualized counts of behaviors" (EFF, 2023). The empirical attack literature agrees on direction: an attack that asks whether a known person's data is inside an aggregate was "very successful when aggregation is performed over small groups" but fell to near coin-flip against large groups in some tests, for example San Francisco taxi data in groups of several hundred (Pyrgelis et al., 2018). Coarsening works when it is coarse enough: knowing someone's home and work location leaves a median crowd of 1 at census-block level but 34,980 at county level (Golle & Partridge, 2009), and rounding vehicle GPS to a 5 km grid cut correct home inferences to about zero (Krumm, 2007). Official practice shows what "properly aggregated" means. Medicare's rule is that "no cell … containing a value of 1 to 10 can be reported directly", nor any figure from which one can be derived (CMS cell suppression policy). Google's pandemic mobility reports published daily, not 15-minute, figures, added calibrated noise, discarded regions smaller than 3 km² and discarded metrics with fewer than 100 contributing users (Aktay et al., 2020). One legislature has endorsed the category: Connecticut's 2026 plate-reader law exempts data held "as de-identified, aggregated or summarized data" for traffic analytics from its 21-day retention cap (Conn. Public Act 26-14).

The same literature shows where the protection stops. Thresholds alone can be defeated by subtraction and reconstruction: published tables can be converted to constraints and solved for the underlying records (Garfinkel, Abowd & Martindale, ACM Queue, 2018). One study recovered individual trajectories from nothing but per-location, per-interval counts with 73% to 91% accuracy in its tests; the method depends on counts that account for every person at every interval across thousands of sites, which 20 roadside cameras do not provide, so it does not transfer wholesale (Xu et al., 2017). No published attack on plate-reader-derived traffic counts was found.

Inference: where Flock's product sits. Daily or hourly totals on arterials, monthly averages and speed percentiles computed over hundreds of vehicles disclose essentially nothing about any one vehicle, provided the underlying sighting records are deleted and small counts are suppressed or blurred with statistical noise. That is consistent with every source above, critics included, and most traffic-engineering value survives at that grain. Flock's product, on its own description, goes finer: 15-minute intervals at single cameras, split into six vehicle classes and by state of registration, kept five years, with no published minimum count. On Wausau's reported volume of about 3 million images a month across 20 cameras, an average camera would see on the order of 50 vehicles per 15-minute interval if each image were one vehicle pass, which is not established, and far fewer overnight. A count of one ("one out-of-state combination truck, 3:15 to 3:30 a.m., camera X") is an individual sighting expressed as a statistic; it names no one, but to someone who knows which neighbor drives that vehicle it shows when the neighbor passed, and five years of such counts show a routine. Whether Flock suppresses such counts is unknown.

Trained models can retain traces of their training data

Peer-reviewed work shows that models can leak whether a specific record was in their training set, and that generative models can reproduce individual training images (Shokri et al., 2017; Carlini et al., 2023). The demonstrated rates are low and concentrated on duplicated or unusual examples, the strongest results concern generative models and not the classifiers Flock describes, and no study of plate-reader or vehicle-classification models was found. **Inference:** the evidence refutes a categorical claim that nothing identifying can remain in a trained model without establishing that any Flock model leaks anything in practice. The practical point is independent of leakage: once a model is trained, the contribution of Wausau's images cannot practically be withdrawn if the contract ends.

No court, regulator or auditor has tested Flock's derived data

Confirmed and reported: Wisconsin has no statute on point. The National Conference of State Legislatures' table, updated September 28, 2026, lists Wisconsin as having no plate-reader statute (NCSL). Two 2025–26 bills that would have limited plate readers, AB 576 and AB 883, failed at the end of the session on March 23, 2026 (LegiScan, AB 576; LegiScan, AB 883). Attorney General Josh Kaul, in oral remarks on September 8, 2026, called for a state law that would restrict sales of plate-reader data to private companies, with perhaps few exceptions (CBS 58). Rep. Calvin Callahan's office said on September 15 that he will hold a hearing "when the Legislature returns in January"; no bill or hearing date was announced (WisPolitics press release). No Wisconsin Department of Justice guidance, attorney general opinion or state inquiry into Flock's derived data was found.

Confirmed: the general statutes that do apply. Under Wis. Stat. 19.36(3), an authority must make available "any record produced or collected under a contract" with a contractor as if the authority held it (Wis. Stat. 19.36), and the Wisconsin Supreme Court held in WIREdata v. Village of Sussex that a municipality "may not avoid liability under the open records law" by contracting out (WIREdata v. Sussex). Wis. Stat. 19.21(4)(b) sets a seven-year floor for most municipal records absent a shorter approved schedule (Wis. Stat. 19.21). Wis. Stat. 100.18 prohibits untrue, deceptive or misleading representations made with intent to sell, and lets the Department of Justice or a district attorney seek an injunction (Wis. Stat. 100.18). **Inference:** none of these was written with plate-reader derivatives in mind. Whether an aggregate dataset Flock builds for its own product is a record "produced or collected under" the city's contract, how 30-day deletion squares with the seven-year floor, and whether section 100.18 reaches a vendor's statements to a city are open questions for the City Attorney that no source answers.

The Wisconsin disputes are untested. Sheboygan's resolution recites a believed breach of Section 4 but ends the contract through the non-appropriation clause and Wis. Stat. 65.06, effective December 31, 2026; the Council adopted it unanimously on September 8, 2026 (Sheboygan Resolution 100-26-27; WPR, Sept. 9, 2026). Racine County's sheriff said his department had obtained legal counsel (CBS 58, Sept. 4, 2026). No report of a lawsuit, arbitration or formal claim by the county was found. The lawsuit dated September 9, 2026, in which the Wisconsin Institute for Law & Liberty represents two citizen groups and a resident against Waukesha County and eleven municipalities, is a Fourth Amendment case about warrantless database searches; Flock is not a defendant, and the complaint does not address anonymized data, AI training or data ownership (WILL complaint). No arbitration demand, lawsuit or settlement between any government customer and Flock over derived data was found anywhere in the United States.

Other states have started to legislate the vendor, in two opposite ways. Oregon's 2026 law says a vendor "may not access, disclose, sell, share or otherwise use captured license plate data" beyond limited support, with no exception for aggregated data or product improvement (Oregon SB 1516). Connecticut's law defines covered data to include data "processed or derived from" a plate reader, bars vendor sale, requires written authorization to share, and then allows aggregated traffic analytics as described above; it does not define "de-identified" or "aggregated" (Conn. Public Act 26-14). Washington makes agencies "the legal owners" of the data and bars vendors from selling or renting access (Washington ESSB 6002); Virginia requires vendor certification of no sale or sharing (Va. Code § 2.2-5517). No statute found defines when plate-reader-derived data counts as anonymized.

Federal and regulatory scrutiny has looked elsewhere. Sen. Ron Wyden and Rep. Raja Krishnamoorthi asked the FTC in November 2025 to investigate Flock's cybersecurity; their announcement of the request does not mention anonymized data, and no public FTC action involving Flock was found (Wyden release, Nov. 3, 2025). State actions against Flock in Illinois, Texas and North Carolina concerned federal access to plate data and private-security licensing (NPR Illinois, Aug. 27, 2025; Galveston County Daily News; GovTech, Nov. 7, 2023). The main court cases, including the Norfolk case now before the Fourth Circuit, concern Fourth Amendment searches of identifiable plate data (UNC School of Government). No

independent technical audit of Flock's anonymization or of Traffic Analytics has been published; Flock's summary of its 2026 Bishop Fox penetration test does not mention annotation tools, training-data stores or the analytics pipeline (Flock blog, Bishop Fox test).

Contract practice shows what Flock has and has not conceded. Customers have narrowed the license by amendment (Idaho Falls, Wilder) or proposed to (Berkeley). This report found no instance of Flock agreeing to delete already-derived aggregate data, to certify such deletion, to exclude an agency's cameras from Traffic Analytics in writing, or to grant audit rights over derived data. That means none was found, not that none exists. **Inference:** a breach claim on a 2023-era agreement like Wausau's would turn on questions no tribunal has answered: whether the dataset feeding Traffic Analytics meets the contract's own definition of Anonymized Data; whether charging for analytics is a "sale" or a licensed "distribution"; whether the 30-day period reaches derived statistics; and whether the practice was adequately disclosed. If derived data were shown to be re-identifiable, it would arguably fall back within Customer Data, and multi-year retention would then conflict with the 30-day term; proving that would require technical access nobody outside Flock has had.

What nobody outside Flock knows

The public record leaves the following open, and each gap is one only Flock, or the city by asking Flock, can close. It is not known whether Wausau's or Marathon County's cameras feed Traffic Analytics or any other derived dataset. It is not known whether Traffic Analytics statistics are computed for every Flock plate-reader camera by default or only on purchase. It is not known whether Flock stores per-sighting records without plates (time, camera, class, make, state, speed) or only binned totals, what the smallest stored cell is, or whether any minimum count, suppression rule or noise is applied. It is not known what identifier supports "unique" counts, repeat-visit and origin measures, or how long it survives. It is not known what "stripped of all metadata and identifying information" means for an image: whether the plate, occupants, bystanders or background are removed. It is not known how many Wausau images have entered training sets, how long training images are kept, who the annotators are today, or whether models would be retrained without a departing customer's data. It is not known who has been offered or given analytics derived from any particular agency's cameras, what Traffic Analytics costs, or whether Flock has changed its five-year retention since September 2026; the word "Historically" in Flock's retention sentence is unexplained. It is not known whether termination or a deletion request removes aggregates already derived; Flock's post and terms do not say.

Several documents that would narrow these gaps exist but were not available for this report: Wausau's executed agreement and any amendments; the city's one-year agreement of January 10, 2023; Marathon County's 2022 agreement; the Flock email to Sheboygan; Racine County's contract and any correspondence with Flock; the Milwaukee Journal Sentinel's original reporting; the full text of 404 Media's paywalled article; and Flock's audit reports offered to customers under non-disclosure.

Conclusion and the written questions for Flock

The dispute over Flock's "anonymized" data is at bottom a dispute over an undefined word. Wausau's contract promises an outcome so strict that mainstream standards bodies decline to promise it, and names no way to check it. On the public record that promise is unlikely to be kept: Flock advertises measurements that require telling vehicles apart, discloses no method, and has published no outside audit. Flock's public line that it "does not sell Customer Data" is narrower than it sounds, because every contract version reviewed puts derived data in a category separate from Customer Data. Aggregate traffic counts can be made safe, but only under conditions (coarse intervals, a minimum count, no surviving per-vehicle key, deleted source records) that Flock has not shown it meets. The practical question for the Council is therefore "what, exactly, is kept, and will Flock put

it in writing?" Because Wausau is on a static 2023 agreement, changes Flock announced in 2026 do not reach it automatically in either direction; anything the city wants beyond Section 4.3 has to be obtained by signed amendment, as Idaho Falls did for training.

Two steps on the city's own side come first: obtaining from the City Clerk the executed 2023 agreement, any amendments or later order forms, and the January 10, 2023 agreement; and asking city departments whether anyone was offered traffic data by Flock. The questions below are drafted for a letter from the city to Flock. The answers should be in writing, signed by an officer able to bind the company, and specific to City of Wausau cameras from January 2023 to date. "Data" should be read to include anything derived from those cameras.

Governing terms

1. Does Flock agree that the Master Services Agreement and Order Form effective December 15, 2023 govern the City's data, that no version of Flock's online Terms and Conditions applies, and that no later order form, amendment or click-through has changed Sections 1.1, 4, 5 or 7.3? Please supply the executed agreement and every amendment.
2. What terms governed data captured under the one-year agreement of January 10, 2023, and does Flock still hold anything derived from that period?

Traffic Analytics and other derived products

3. Has data from any City of Wausau camera ever been used to compute Traffic Analytics statistics, or any other derived dataset or "Flock offering"? From what date, and for which cameras?
4. Is that computation performed for all Flock plate-reader cameras by default, or only where a customer buys Traffic Analytics? When and how was the City told?
5. List every data element stored in any derived dataset from Wausau cameras: each metric, the smallest time interval, and each breakdown (vehicle class, make, state of registration, direction, speed). Do any per-vehicle or per-sighting rows exist, with or without plates?
6. What minimum count, suppression rule or noise mechanism is applied before a statistic is stored or displayed? What happens to a 15-minute cell containing one vehicle?
7. How are "unique" vehicle counts, repeat-visit, dwell-time, visitor-origin and origin–destination figures computed? What identifier is used (plate, plate hash, Vehicle Fingerprint signature or embedding), how long does it persist, and is it ever kept beyond the 30-day Retention Period?
8. Who has been offered, given access to or sent statistics derived from Wausau cameras, including other City departments, Marathon County, WisDOT, MS2, other agencies and private customers? Please list each instance and date, including offers by Flock sales staff.
9. Has Flock received revenue from any product or subscription that uses statistics derived from Wausau cameras?
10. Does Flock contend that such statistics are "Anonymized Data" under Sections 1.1 and 4.3, or some other category? Who owns them? Does Flock regard providing them for a fee as a "distribution" permitted by Section 4.3 or a "sale" prohibited by it?
11. Can the City opt out of Traffic Analytics generation, and would opting out delete statistics already derived?

Anonymization method and standard

12. Which "commercially available standards" does Section 1.1 refer to? Please name them and supply Flock's written procedure for applying them.
13. Step by step, what is removed, altered or retained when Customer Data becomes Anonymized Data: plate characters, the plate image, timestamp precision, camera identity and location, Vehicle Fingerprint attributes, people in frame, and

background?

14. Is any key, hash, embedding or link table retained that would allow records about the same vehicle to be associated with one another or with the source record?
15. Has any independent expert assessed the re-identification risk of Flock's Anonymized Data or Traffic Analytics? Please supply the report, and state whether Flock will permit a review by an expert chosen by the City.
16. Will Flock commit in writing not to re-identify Anonymized Data and to bind every recipient to the same commitment?

Machine-learning training

17. Have images or audio from Wausau cameras been used to train or evaluate models? How many, since when, and what does "less than 1%" mean in absolute numbers for Wausau?
18. In what state are training images used: plate legible, masked or cropped; occupants and pedestrians visible or obscured; location and time metadata deleted or held in a linked table?
19. Who labels training data: employees or contractors, in which countries, engaged through which platforms? Could annotators see license plates, and were Wausau images among those handled through the annotation tool reported in December 2025?
20. How long are training images retained, where are they stored, and what deletion schedule applies?
21. Does any third-party AI provider process images from Wausau cameras, for FreeForm search or any other feature?
22. Will Flock sign an amendment, as reported in Idaho Falls and Wilder, barring use of Wausau data to train or improve machine-learning models?

Retention, termination and deletion

23. How long does Flock keep Anonymized Data, aggregate statistics and training images derived from Wausau cameras? Does the five-year Traffic Analytics period apply, and has Flock changed it since September 2026?
24. On expiry or termination, will Flock delete all derived statistics and training images from Wausau cameras and certify the deletion in writing? Does Flock contend that the Section 4.3 license survives termination although Section 7.3 does not list Section 4?
25. Does Flock treat geolocation and other data collected through the services as the City's Proprietary Information under Section 5.1, to be returned, destroyed or erased at termination?
26. Will models trained on Wausau images be retrained without them, or will Flock continue to use them after termination?

Disclosure and verification

27. Has anything derived from Wausau cameras been disclosed under legal process, or to any federal agency, state agency or private party, other than as listed in answer to question 8?
28. Please supply the sections of Flock's SOC 2 or other third-party audit reports, and of the Bishop Fox report, that cover the analytics pipeline, the training-data store and annotator access, together with a data-flow diagram for derived data.
29. Will Flock sign an amendment that defines "sell", "distribute", "anonymize" and "aggregate"; sets a minimum cell size; prohibits retention of per-vehicle identifiers beyond the Retention Period; requires Council approval before any derived data from Wausau cameras is provided to anyone outside the Police Department; requires certified deletion at termination; and gives the City a right to audit?