

FBI Headquarters

National Security Exposure Assessment

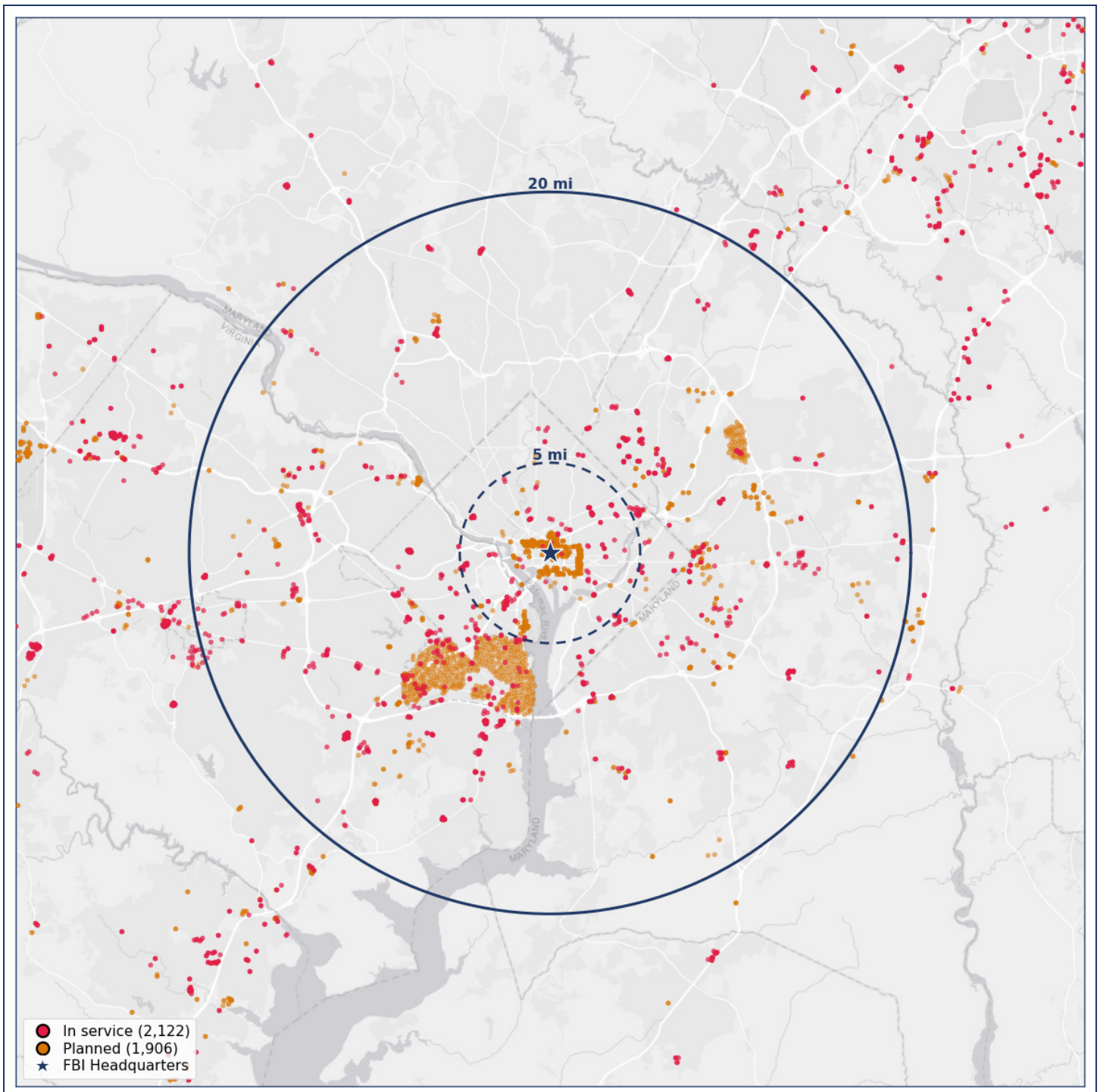
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Executive Assessment

FBI Headquarters in Washington directs the Bureau's national work — counterterrorism, counterintelligence, cyber, and major investigations — and is the hub that field offices and partners come into. An unusual after-hours gathering of counterterrorism, cyber, and leadership traffic could mean a national case or crisis cell had just formed.

This study asks a simple question: if someone drove from a nearby home to a gate and back, would they pass a Flock camera? The numbers are a model of possible drives, not a count of real people.

At 20 miles, about 65.0% of those modeled trips pass a camera. Another 21.6% might pass one, and 13.4% could not be determined. At 5 miles, 64.8% pass a camera, 15.9% might, 0.0% avoid them, and 19.3% could not be determined. This is a model of routes, not proof that anyone was watched.

HEADLINE RESULT · MODELED TRIPS TO A GATE

20 MILES OUT

■ **65.0%****Passes a camera**

A confirmed camera sits on every plausible road to a gate.

■ **21.6%****Might pass**

The inventory's rotationAngle is not a true facing: among 72,971 named in-service cameras it matches the road only about 10% of the time (median error 90°) because it stores housing orientation, not travel. The model therefore does not use it to confirm a hit. Named NB/SB/EB/WB cameras take direction from the road, with the name used only to pick which way they watch. Cameras with no compass name are too noisy to confirm, so a nearby pass stays Might pass. A confirmed hit still needs the vehicle on the same corridor, traveling in that monitored direction within 35°.

■ **0.0%****Avoids all cameras**

No confirmed camera on any plausible road.

■ **13.4%****Couldn't determine**

Extra driveway or side-road options could not be fully routed, so those trips stay unresolved instead of being guessed.

5 MILES OUT



■ **64.8%** Passes ■ **15.9%** Might pass ■ **0.0%** Avoids ■ **19.3%** Couldn't determine

Might pass is 15.9% here because rotationAngle is not a reliable facing, so unnamed or poorly oriented cameras stay in this bucket instead of counting as a hit. **Couldn't determine is 19.3% here because** extra driveway or side-road options could not be fully routed, so those trips stay unresolved instead of being guessed.

Installation Context

FBI Headquarters directs and coordinates Bureau activity, sets national priorities and policy, serves as an intelligence and information hub, supports field and overseas operations, and coordinates national crises [E56]. The Bureau's public mission includes counterterrorism, counterintelligence, cyber, public corruption, civil rights, and major-crime responsibilities [E57].

The location boundary is unusually important. The FBI announced in July 2025 that the Ronald Reagan Building had been selected for a new headquarters [E58]. The canonical study is tied to the configured 935 Pennsylvania Avenue point and is therefore a dated, location-specific model. It should not be read as a route assessment for every current or future headquarters function, leased office, field office, or relocation site.

Within that boundary, the principal intelligence risks are crisis activation and personnel identification. The study did not identify an FBI employee, agent, executive, vehicle, case, liaison, visitor, or meeting. Its zero-percent modeled unobserved result describes synthetic routes to the configured point, not proof that every headquarters traveler was read, retained, or identified.

Installation-Specific Intelligence Scenarios

The study demonstrates Tier A deployment and modeled route exposure only. Both scenarios below require Tier B historical time-stamped observations and Tier C identity or organizational enrichment that were not obtained.

Scenario 1: Detecting a National Counterterrorism or Counterintelligence Crisis Cell

Assume that a hostile service obtains a long history of vehicle observations serving the configured FBI headquarters location and gradually identifies recurring clusters associated with probable executives, intelligence personnel, counterterrorism or counterintelligence staff, cyber specialists, legal support, operations personnel, and interagency liaisons. The service would not need to assign every plate to a specific division.

A high-value signal would be a sustained departure from ordinary headquarters activity. Suppose vehicles associated with several normally separate communities begin arriving outside normal hours, remain overnight, and overlap with unfamiliar government or liaison vehicles. The pattern could indicate formation of a national crisis cell, coordinated response to a terrorist threat, major counterintelligence development, significant cyber incident, or other Bureau-wide operation [E56, E57].

The adversary may not know the case or intended action. It could still learn that the FBI has elevated the issue, estimate when coordination began, identify which external agencies appear involved, and change communications, travel, infrastructure, or operational behavior before the U.S. response becomes public. For a foreign intelligence service, warning that a counterintelligence investigation has intensified can be valuable even without access to the investigative file.

Repeated observation may also identify leadership and protective patterns. Once a vehicle cluster is associated with executives or sensitive operational personnel, historical data can expose probable residences, family vehicles, and recurring locations away from federal security.

The reported exploitation of Iran's street- and traffic-camera network provides a direct precedent. AP sources described a state using camera access to map senior officials, protective personnel, routes, addresses, and moments of convergence [E141]. That case concerned foreign leadership targeting, not an FBI investigation, and it does not establish compromise in Washington. It demonstrates why rare after-hours convergence among senior and security communities is itself intelligence.

The present study does not establish that a crisis cell formed or that any FBI person was identified. The scenario requires historical observations, reliable organizational enrichment, and careful control for visitors, public transit, ride services, neighboring destinations, and the headquarters relocation described in the source record.

Scenario 2: Identifying Counterintelligence, Cyber, and Investigative Personnel Through Historical Plate Correlation

A second threat is the gradual identification of FBI personnel whose occupations are intentionally not obvious. A plate repeatedly traveling to a headquarters area does not distinguish an agent from an analyst, attorney, contractor, administrative employee, visitor, or unrelated traveler. Longitudinal association analysis can reduce that ambiguity.

Vehicles that repeatedly overlap with specific interagency visitors, appear during public cyber or counterintelligence events, or share secondary locations may be assigned probabilistic roles. A vehicle that bridges several otherwise separate clusters may belong to a liaison, senior analyst, or technical specialist supporting multiple investigations.

Identity enrichment could then connect those vehicles to names, residences, family members, public professional histories, breached credentials, or prior government service. The result would be a prioritized list of individuals likely to possess sensitive investigative or intelligence knowledge, even if the adversary never accessed an FBI system.

The 2015 OPM breach demonstrates the intelligence value of compromising personnel data at scale. GAO reported that the breach affected 21.5 million people and included background-investigation information, while the FBI has publicly attributed the OPM theft to Chinese actors [E149, E150]. Those records could help identify cleared or federal personnel; an ALPR archive could add current movement, associations, and household patterns.

Such a combined dataset could support tailored phishing, recruitment, surveillance, coercion, device theft, or warning to foreign officers under investigation. It could also expose family members who do not benefit from workplace security.

The study did not obtain OPM data, FBI rosters, registration records, or historical headquarters reads. It models Tier A route exposure only. The scenario shows why the compromise of a movement repository near a law-enforcement and domestic-intelligence headquarters creates a counterintelligence problem, not merely an employee-privacy issue.

Combined Significance

Scenario 1 could warn an adversary that a national investigation or crisis response has intensified. Scenario 2 could identify the people conducting that response and expose their households. The combination would allow a foreign service to observe both organizational tempo and the human network behind it without accessing case content.

Primary Reachability Findings

Modeled route-coverage estimate, reported for both scopes with its uncertainty ranges.

Field	5-mile near-base	20-mile primary
Result label	V7 modeled estimate	V7 modeled estimate
Publication status	Modeled estimate (3 caveats)	Modeled estimate (3 caveats)
Headline channel	robust_lattice	robust_lattice
Primary H0 U/C/P/R	0.0%/79.0%/19.7%/1.3%	0.0%/73.0%/24.6%/2.4%
Robust H0/H1/H2 U/C/P/R	0.0%/64.8%/15.9%/19.3%	0.0%/65.0%/21.6%/13.4%
H0 validation	single-reviewer check	single-reviewer check

The complete modeled result record for both scopes - all sensitivity intervals, gate/direction/range sweeps, camera-cluster influence, modeling caveats, seeds, and SHA-256 hashes - is in the V7 Modeled Result Record under Evidence and Reproducibility below.

20-mile minus 5-mile weighted unobserved-rate difference: primary conditional H0 **+0.0** percentage points; separate robust H0/H1/H2 lattice **+0.0** percentage points. These channels answer different questions and are not averaged. [L41]

Legislative Significance

Federal law-enforcement headquarters should be treated as sensitive counterintelligence locations in ALPR policy. Congress should require short non-hit retention, particularized historical queries, strict external-sharing limits, immutable audits, vendor and subcontractor security controls, and immediate notification to the FBI when relevant credentials or datasets are compromised. The configured-location limitation should remain prominent until any new headquarters location is separately modeled.

Neither recommendation depends on a claim that a current operator acted improperly. The policy issue is whether a longitudinal commercial movement archive surrounding a sensitive national-security site should be retained, broadly shared, or exposed through vendor and subcontractor systems without controls proportionate to the intelligence value of the aggregate record.

Four Reported Vulnerabilities

Finding	Observed condition	Evidence boundary	Disclosure and remediation status	Source(s)
1	An active ArcGIS Default API key was hardcoded in a public development/demo asset and repeated key material was found across development assets.	The validation establishes key scope and private item grants; it does not prove that every granted item was read or altered by another party.	Reported 2025-06-11; remediation reported 2025-07-01.	L2, L5, L8, L20
2	FlockSafety development application and module-federation bundles were served before the correct authentication boundary.	The bundles expose application logic, routes, models, and permission concepts; frontend visibility does not prove anonymous access to every backend or production record.	Reported 2025-11-13 with follow-ups on 2025-11-14 and 2025-11-19; no closure or remediation detail appears in the disclosure record.	L2, L5, L11-L13

Finding	Observed condition	Evidence boundary	Disclosure and remediation status	Source(s)
3	Planner/Beefeater endpoints issued ArcGIS and Google mapping credentials before login, including a production-scope path used to obtain the analyzed export.	Wire records prove anonymous HTTP 200 token responses and establish provenance; they do not prove every downstream service permitted every operation.	Reported 2025-11-13 with follow-ups on 2025-11-14 and 2025-11-19; no closure or remediation detail appears in the disclosure record.	L2, L14, L15, L37
4	FlockNova application bundles were served before the correct access boundary and revealed search, pivot, fusion, and client-side permission assumptions.	The exposed code establishes application structure and data-source concepts; it does not establish that every modeled backend endpoint lacked authorization or that every modeled dataset was populated.	Reported 2025-12-05; no reply or remediation detail appears in the disclosure record.	L2, L4, L35

The findings are distinct but composable. Findings 2 and 4 exposed the vocabulary and architecture of search, alerting, mapping, and fusion workflows. Findings 1 and 3 exposed two different credential failures: a static production-scoped ArcGIS key and a pre-login credential-issuance path. Finding 3 supplied the provenance for the production map-point export used here. The combination supports a conclusion about systemic credential and environment-boundary weakness during the research period, while remaining narrower than a claim of universal platform compromise [L2, L8, L37].

The disclosure record also cannot establish a negative. Responsible reporting and a known remediation date for Finding 1 do not prove that no other person accessed the exposed surfaces, just as the absence of a returned closure notice for Findings 2 through 4 does not prove that they remain exploitable today. The reports preserve the observed condition, collection date, and known response status so that legal and technical reviewers can distinguish evidence from present-tense assumptions.

Methodology

Research and Data Basis

This assessment follows four separate disclosures involving credentials, development assets, environment boundaries, and a data-fusion application. A public development artifact contained an active ArcGIS credential; other development bundles exposed application structure before the expected

access boundary; a Planner/Beefeater path issued production-scope mapping credentials before login; and FlockNova bundles exposed the structure of a broader fusion and search environment [L2, L4, L5, L8, L37]. None of those findings alone proves universal backend access. Together, they justified examining what sensitive geospatial information became available and what defensive questions it could support.

The production ArcGIS export captured on December 14, 2025 contains 335,701 records spanning multiple device types and statuses; it is not a count of simultaneously active cameras. The status fields record 214,073 `inService`, 83,427 `inPlanning`, 38,190 decommissioned, and 11 unknown records. The route study loads detection-eligible `inService` and `inPlanning` records and preserves a separate `inService`-only floor. The `active` integer is not the study filter [L14, L15].

Exposed application materials model plate and vehicle search, camera selection, hit history, alerts, people-search paths, map layers, CAD and AVL concepts, Raven/audio sensors, device access, and identity-adjacent fusion permissions [L4, L11-L13, L35]. Flock's patent describes a dynamic surveillance and object-query architecture, but a patent describes claimed architecture rather than proving deployment of each patented capability [E37]. The report therefore separates observed code and export fields from product descriptions and hypothetical intelligence use.

The counterintelligence and force-protection concern arises because personnel, contractors, and visitors associated with FBI Headquarters must use public transportation infrastructure outside the protected facility. The route model does not establish where any real employee or visitor lives or how any individual travels. It evaluates only the public-road exposure of the declared synthetic residential frame.

Longitudinal location information can expose associations and patterns that isolated observations do not. Supreme Court decisions concerning long-term GPS tracking and historical location records provide relevant policy and legal context without deciding the legality of this vendor, dataset, or study [E20, E21]. The constitutional and privacy implications belong in legal and policy review, not in unsupported declarations that every collection or search is unlawful.

My analytical judgment is that commercial growth and procurement convenience must not displace United States national-security, counterintelligence, force-protection, constitutional, and public-accountability obligations. That is a normative conclusion, not evidence that profit caused a particular breach or that a specific customer misused data.

Estimand and Synthetic Origins

The V7 primary estimand is the occupied-housing-weighted distribution across unobserved, confirmed exposure, possible exposure, and unresolved model under one predeclared, camera-blind H0 access-and-route policy. H0 defines the pinned origin, eligible unchanged saved gates, 5/20-road-mile frame,

final per-leg scope, and primary conditional result. Every in-frame sampled weight remains in the four-class denominator; proven out-of-frame origins are excluded before sampling, while frame-unknown, unresolved-model, and artifact-error states remain explicit.

Each directed outbound and return leg must be no more than the declared radius. A qualifying round trip can therefore approach 10 miles in the 5-mile scope or 40 miles in the 20-mile scope. This is not a total-round-trip cap of 5 or 20 miles.

H1/H2 remain identity-keyed alternative access policies used only for the separate robustness lattice and fixed-H0-gate access sensitivity. H1/H2 cannot rescue a failed H0, set the primary status, change H0 frame membership, or contribute cameras to the H0 result. The two channels are co-located and never averaged [L41].

Reviewed 24/7 Gates

The paired study used Gate 1 as the reviewed gate set. Only gates treated during setup as continuously open to authorized traffic are eligible. A part-time, visitor-only, commercial-only, or schedule-limited gate would create a modeled route that disappears outside its operating window, so including it as continuously available would overstate practical access. The gate decision concerns availability, not secrecy; coordinates and identifiers remain in the unredacted annexes.

The same gate set was used at both radii. The saved study state also contained 0 analyst-defined road blocks. Gates and blocks are inputs rather than outputs. A high or low unobserved rate does not validate the gate review, so an installation reviewer should read the exact saved identifiers and artifact warnings when judging whether the modeled access assumptions match local practice.

Cameras, Roads, and Routing

The V7 route and gate policy receives no camera coordinates, encounter results, or camera-derived costs. It uses the frozen routing and inventory assumptions bound into the completed cohort (`valhalla-3.6.3-auto-frozen-osm-camera-blind-directed-overlay-v6`). Outbound and return routes are legal directed requests and are evaluated independently against the declared per-leg scope.

Camera encounters remain geometry, corridor, bearing, lifecycle-status, and capture-model inferences rather than observed plate reads. The H0 point channel retains direction and spatial/grade sensitivity separately. Camera influence is computed by physical camera cluster so colocated compute/support records are not counted as independent roadside sensors. Planned-device and in-service-only status variants remain sensitivity evidence rather than claims of confirmed real-world operation [L41].

Why Five and Twenty Miles

DoD Manual 4165.63 permits housing-market boundaries based on a twenty-mile or one-hour peak-traffic commute, with military and public information and installation-command input supporting local adjustment [E49]. The study predeclared the distance limb as a uniform, transparent approximation of the broader off-installation housing and commuting area. It does not assert that most personnel at FBI Headquarters live exactly twenty miles away, and it does not model one hour of peak traffic.

Five miles isolates the immediate area where travel converges toward a limited gate set. Twenty miles adds the broader housing-market stratum while retaining every near-base draw unchanged. Reporting both shows whether corridor concentration near the facility differs from the surrounding occupied-housing geography without changing the near-base sample.

Limitations and Non-Claims

This is a model over dated deployment, Census, and road snapshots. Occupied housing is a residential-distribution proxy, not an installation workforce roster; it does not weight origins by military assignment, employer, rank, duty status, shift, or measured traffic. National off-base housing evidence supports the scope choice but cannot identify where personnel assigned to FBI Headquarters live [E44-E46].

Camera location and status fields can be incomplete, stale, planned, duplicated, moved, or differently interpreted. OSM roads and address points can omit valid travel or include obsolete topology. Gate availability and cantonment geometry depend on analyst review. The route engine models corridor blocking, accepted alternatives, and a geometric field-of-view capture; it does not model OCR probability, optical obscuration, weather, plate condition, device uptime, data retention, customer sharing, legal process, or whether a backend user queried a record.

A V7 unobserved H0 classification is a conditional modeled-policy result: under the frozen H0 access, gate, routing, inventory-status, and capture rules, the legal directed round trip had no qualifying modeled encounter. It is not a share of people, drivers, commuters, households, actual trips, or empirical camera reads. The separate robust lattice and access, gate-choice, direction, spatial/grade, range, deployment-status, sampling, and camera-cluster sensitivities must remain visible qualifications. Source omissions, device uptime, weather, plate visibility, temporary road conditions, and camera movement can change real-world collection.

Evidence and Reproducibility

The V7 drafting packet was built from the complete validated cohort for `fbi_headquarters`. It binds cohort `reachability-v7-audit-92bd2e6a45c3a7c6`, pair `fbi_headquarters-f152a1931392fe2a`, seed `148781712`, index SHA-256 `3d0755cb6fcc7dd165c6b9dd53ade8bfe5402773231904ea3807d1f17dc3b96b`,

five-mile summary SHA-256 `cc9ffd1bccabb42276d1e1280e322decce79aa80e538f3e51eb09cfb21f9dc93`, and twenty-mile summary SHA-256 `83c5b897f0af8176cc339e1152212c19f4972ff29c9bd18cac6ee12c12414e14`. [L41].

Both scopes retain the primary H0 and robust-lattice partitions, full frame accounting, per-policy outcomes and failures, directed route geometry, modeled camera encounters, split uncertainty intervals, gate-choice sensitivity, physical-camera-cluster influence, frozen source snapshot, and independent QA. All QA flags and warnings remain unsuppressed in the hash-bound V7 snapshot [L41].

The narrative is subordinate to those structured artifacts. If a sentence, table cell, or later export conflicts with a canonical summary or origin-level record, the validated structured record controls and the narrative must be corrected. Joshua Michael independently reviews each material claim, citation, inference, and numerical value as the accountable author.

V7 Modeled Result Record

Modeled route-coverage estimate [L41].

Field	5-mile near-base	20-mile primary
Result label	V7 modeled estimate	V7 modeled estimate
Publication status	Modeled estimate (3 caveats)	Modeled estimate (3 caveats)
V7 cohort	reachability-v7-audit-92bd2e6a45c3a7c6	reachability-v7-audit-92bd2e6a45c3a7c6
Pair ID	fbi_headquarters-f152a1931392fe2a	fbi_headquarters-f152a1931392fe2a
Pair seed	148781712	148781712
Generated at	2026-08-12T09:49:57.370034+00:00	2026-08-12T09:49:57.370034+00:00
Summary SHA-256	<code>cc9ffd1bccabb42276d1e1280e322decce79aa80e538f3e51eb09cfb21f9dc93</code>	<code>83c5b897f0af8176cc339e1152212c19f4972ff29c9bd18cac6ee12c12414e14</code>
Routing engine	valhalla-3.6.3-auto-frozen-osm-camera-blind-directed-overlay-v6	valhalla-3.6.3-auto-frozen-osm-camera-blind-directed-overlay-v6
Synthetic draws	1000	2000
Headline channel	robust_lattice	robust_lattice
Primary H0 U/C/P/R counts	0/790/197/13	0/1505/455/40
Primary H0 U/C/P/R	0.0%/79.0%/19.7%/1.3%	0.0%/73.0%/24.6%/2.4%
Robust H0/H1/H2 U/C/P/R counts	0/648/159/193	0/1298/389/313
Robust H0/H1/H2 U/C/P/R	0.0%/64.8%/15.9%/19.3%	0.0%/65.0%/21.6%/13.4%
Direction H0 interval	0.0% to 21.0%	0.0% to 27.0%

Field	5-mile near-base	20-mile primary
Fixed-gate access interval	0.0% to 19.3%	0.0% to 13.4%
Joint interval	0.0% to 35.2%	0.0% to 35.0%
Spatial H0 interval	0.0% to 0.1%	0.0% to 1.7%
Gate reselection diagnostic	fixed 0.0%; reselected 0.0%; absolute difference 0.0 pp	fixed 0.0%; reselected 0.0%; absolute difference 0.0 pp
H0 gate near-tie sensitivity	60s: 0.0% disagreement weight; 120s: 0.0% disagreement weight; 300s: 0.0% disagreement weight	60s: 0.0% disagreement weight; 120s: 0.0% disagreement weight; 300s: 0.0% disagreement weight
H0 range sensitivity U/C/P/R	75ft: 0.0%/78.9%/19.8%/1.3%; 150ft: 0.0%/79.0%/19.7%/1.3%; 250ft: 0.0%/79.0%/19.7%/1.3%	75ft: 0.0%/72.5%/25.1%/2.4%; 150ft: 0.0%/73.0%/24.6%/2.4%; 250ft: 0.0%/73.3%/24.3%/2.4%
H0 direction sensitivity U/C/P/R	25deg: 0.8%/79.0%/18.9%/1.3%; 30deg: 0.0%/79.0%/19.7%/1.3%; 35deg: 0.0%/79.0%/19.7%/1.3%; 40deg: 0.0%/79.0%/19.7%/1.3%; 45deg: 0.0%/79.0%/19.7%/1.3%; 60deg: 0.0%/79.0%/19.7%/1.3%	25deg: 0.2%/73.0%/24.5%/2.4%; 30deg: 0.0%/73.0%/24.6%/2.4%; 35deg: 0.0%/73.0%/24.6%/2.4%; 40deg: 0.0%/73.0%/24.6%/2.4%; 45deg: 0.0%/73.0%/24.6%/2.4%; 60deg: 0.0%/73.0%/24.6%/2.4%
Deployment-status sensitivity U/C/P/R	declared_policy: 0.0%/79.0%/19.7%/1.3%; in_service_only: 24.4%/70.1%/4.2%/1.3%	declared_policy: 0.0%/73.0%/24.6%/2.4%; in_service_only: 22.0%/64.8%/10.8%/2.4%
Physical-camera-cluster influence	maximum removal shift 0.4 pp; 0 material clusters	maximum removal shift 0.1 pp; 0 material clusters
H0 validation	single-reviewer check	single-reviewer check
Modeling caveats	1. corridor routing is a single-reviewer accuracy check (~89.5%; see the report's Appendix O)2. primary H0 unresolved weight is 1.300%3. fixed-gate access-policy interval spans 19.300 pp	1. corridor routing is a single-reviewer accuracy check (~89.5%; see the report's Appendix O)2. primary H0 unresolved weight is 2.427%3. fixed-gate access-policy interval spans 13.424 pp
QA and artifact warnings	None	None

20-mile minus 5-mile weighted unobserved-rate difference: primary conditional H0 **+0.0** percentage points; separate robust H0/H1/H2 lattice **+0.0** percentage points. These channels answer different questions and are not averaged. [L41]

Reachability Results

Five-Mile Near-Base Scope

Publication state: Modeled estimate (3 caveats).

The 5-mile primary H0 channel contains 1,000 draws on the full in-frame sampled denominator: 0 unobserved (0.0%), 790 confirmed exposure (79.0%), 197 possible exposure (19.7%), 13 unresolved model (1.3%). The separate robust H0/H1/H2 lattice reports 0 unobserved (0.0%), 648 confirmed exposure (64.8%), 159 possible exposure (15.9%), 193 unresolved model (19.3%). Neither channel drops or renormalizes unresolved-model weight.

H0 uncertainty intervals: direction-H0 0.0% to 21.0%; fixed-H0-gate access 0.0% to 19.3%; joint 0.0% to 35.2%; spatial/grade-H0 0.0% to 0.1%. These are distinct sensitivity results and are not averaged.

Candidate-frame accounting: {"all_saved_gates_evaluated": true, "certificate_artifact_path": "frame_classification.json", "certificate_artifact_sha256": "90ccafd39d08e97c4dbd8e5f0fa972369a155b2eac13a301bc62af63810fad8e", "classifier_contract": "h0-all-saved-gates-directed-per-leg-frame-v1", "classifier_version": 1, "closure": {"count_matches_source": true, "weight_matches_source": true}, "count_by_status": {"frame_unknown": 469, "near": 9050, "outer": 61646, "proven_out_of_frame": 27605}, "per_leg_scope_rule": "outbound_and_return_each_lte_declared_scope_radius", "source_count": 98770, "source_weight": 1768707.0000000023, "weight_by_status": {"frame_unknown": 6271.333333333334, "near": 235277.74999999994, "outer": 971109.7500000016, "proven_out_of_frame": 556048.1666666673}, "weight_semantics": "pre_sampling_occupied_housing_candidate_weight"}. Sampled-frame accounting: {"count_by_status": {"artifact_error": 0, "frame_unknown": 0, "in_frame": 1000, "proven_out_of_frame": 0}, "rate_by_status": {"artifact_error": 0.0, "frame_unknown": 0.0, "in_frame": 100.0, "proven_out_of_frame": 0.0}, "source_count": 1000, "source_weight": 235277.75000000218, "weight_by_status": {"artifact_error": 0.0, "frame_unknown": 0.0, "in_frame": 235277.75000000218, "proven_out_of_frame": 0.0}}.

Modeling caveats: 1. corridor routing is a single-reviewer accuracy check (~89.5%; see the report's Appendix O) 2. primary H0 unresolved weight is 1.300% 3. fixed-gate access-policy interval spans 19.300 ppQA and artifact warnings: None [L41]

Twenty-Mile Primary Scope

Publication state: Modeled estimate (3 caveats).

The 20-mile primary H0 channel contains 2,000 draws on the full in-frame sampled denominator: 0 unobserved (0.0%), 1,505 confirmed exposure (73.0%), 455 possible exposure (24.6%), 40 unresolved model (2.4%). The separate robust H0/H1/H2 lattice reports 0 unobserved (0.0%), 1,298 confirmed exposure (65.0%), 389 possible exposure (21.6%), 313 unresolved model (13.4%). Neither channel drops or renormalizes unresolved-model weight.

H0 uncertainty intervals: direction-H0 0.0% to 27.0%; fixed-H0-gate access 0.0% to 13.4%; joint 0.0% to 35.0%; spatial/grade-H0 0.0% to 1.7%. These are distinct sensitivity results and are not averaged.

Candidate-frame accounting: {"all_saved_gates_evaluated": true, "certificate_artifact_path": "frame_classification.json", "certificate_artifact_sha256": "90ccafd39d08e97c4dbd8e5f0fa972369a155b2eac13a301bc62af63810fad8e", "classifier_contract": "h0-all-saved-gates-directed-per-leg-frame-v1", "classifier_version": 1, "closure": {"count_matches_source": true, "weight_matches_source": true}, "count_by_status": {"frame_unknown": 469, "near": 9050, "outer": 61646, "proven_out_of_frame": 27605}, "per_leg_scope_rule": "outbound_and_return_each_lte_declared_scope_radius", "source_count": 98770, "source_weight": 1768707.0000000023, "weight_by_status": {"frame_unknown": 6271.333333333334, "near": 235277.74999999994, "outer": 971109.7500000016, "proven_out_of_frame": 556048.1666666673}, "weight_semantics": "pre_sampling_occupied_housing_candidate_weight"}. Sampled-frame accounting: {"count_by_status": {"artifact_error": 0, "frame_unknown": 0, "in_frame": 2000, "proven_out_of_frame": 0}, "rate_by_status": {"artifact_error": 0.0, "frame_unknown": 0.0, "in_frame": 100.0, "proven_out_of_frame": 0.0}, "source_count": 2000, "source_weight": 1206387.4999999835, "weight_by_status": {"artifact_error": 0.0, "frame_unknown": 0.0, "in_frame": 1206387.4999999835, "proven_out_of_frame": 0.0}}.

Modeling caveats: 1. corridor routing is a single-reviewer accuracy check (~89.5%; see the report's Appendix O) 2. primary H0 unresolved weight is 2.427% 3. fixed-gate access-policy interval spans 13.424 ppQA and artifact warnings: None [L41]

Relationship Between the Two Scopes

20-mile minus 5-mile weighted unobserved-rate difference: primary conditional H0 **+0.0** percentage points; separate robust H0/H1/H2 lattice **+0.0** percentage points. These channels answer different questions and are not averaged. Each directed outbound and return leg must independently satisfy its declared 5/20-road-mile scope; the total round trip may approach 10/40 miles. An origin with no unchanged saved gate qualifying under H0 is outside that scope before sampling [L41].

References

ID	Source and use in this report
E20	U.S. Supreme Court, <i>Carpenter v. United States</i> opinion, https://www.supremecourt.gov/opinions/17pdf/16-402_h315.pdf - Digital location privacy policy/legal context.

ID	Source and use in this report
E21	Library of Congress, <i>United States v. Jones</i> , 565 U.S. 400, https://www.loc.gov/item/usrep565400/ - GPS tracking/ location surveillance policy/legal context.
E37	Flock Group Inc., U.S. Patent No. 11,416,545 B1, “System and Method for Object-Based Query of Video Content Captured by a Dynamic Surveillance Network,” issued Aug. 16, 2022, https://patents.google.com/patent/US11416545B1/en - Flock’s own patent. Confirmed language: a “dynamic surveillance network” that is device-agnostic and ingests video from “unrelated surveillance devices” (neighborhood, residential, business, traffic, portable/mobile cameras); a “dynamic surveillance and object-based query” (DSOQ) server/system; object-based query of video “based on content of the video footage and not just time and location”; attribute profiling of people (“male, female, race,” height/weight/clothing) and vehicles (make/model/color/plate); and “face recognition data points”/facial-similarity feature-vector matching. Used only for the vendor’s own described architecture and intended capability; the report does not claim Flock has deployed any specific patented function, including facial recognition. Accessed 2026-07-13.
E44	U.S. Government Accountability Office, <i>Military Housing: DOD Should Address Critical Supply Shortages</i> (GAO-25-106208), product page, https://www.gao.gov/products/gao-25-106208 - GAO summary states that about two-thirds of service members in the U.S. live off base in local communities . Used for national off-base housing share context for force-protection commute exposure. Not an installation-level census. Accessed 2026-07-16.
E45	Congressional Research Service, <i>Military Housing</i> (CRS Report R47728), https://www.congress.gov/crs-product/R47728 - CRS reports that about 58% of servicemembers receive a tax-free housing allowance (BAH) and obtain housing from the local housing market outside their installation. Complements E44 (slightly different metric: BAH recipients vs “live off base”). Used for off-base housing / civilian-market commute framing. Accessed 2026-07-16.

ID	Source and use in this report
E46	DoD Travel Management Office / Defense Travel Management Office, Basic Allowance for Housing overview, https://www.travel.dod.mil/Allowances/Basic-allowance-for-Housing/ - Official BAH framing: compensation based on local civilian housing markets when government quarters are not provided; members choose off-base housing in the civilian market. Used only for policy mechanism (BAH → civilian infrastructure), not for a percentage. Accessed 2026-07-16.
E49	U.S. Department of Defense, DoD Manual 4165.63, <i>DoD Housing Management</i> , incorporating Change 3, April 1, 2025, Enclosure 3, section 1.c.(2), https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodm/416563m.pdf - Official housing-market-analysis guidance: market-area boundaries may use a 20-mile or one-hour peak-traffic commute, with military/public information and installation-command recommendations supporting local adjustment. Used to justify a predeclared 20-road-mile primary reachability scope, not to claim that most personnel at a particular installation live within that distance. Accessed 2026-07-20.
E56	Federal Bureau of Investigation, "FBI Headquarters," https://www.fbi.gov/contact-us/fbi-headquarters - Official description of headquarters functions: directing and coordinating FBI activity, setting priorities and policies, serving as an intelligence and information hub, supporting field and overseas operations, and coordinating national crises. Accessed 2026-07-21.
E57	Federal Bureau of Investigation, "About," https://www.fbi.gov/about - Official FBI mission and priority context, including counterterrorism, counterintelligence, cyber, public corruption, civil-rights, and major-crime responsibilities. Accessed 2026-07-21.
E58	Federal Bureau of Investigation, "New FBI Headquarters in Washington, D.C.," July 1, 2025, https://www.fbi.gov/news/press-releases/new-fbi-headquarters-in-washington-dc - Official announcement selecting the Ronald Reagan Building for a new FBI headquarters. Used to disclose the time-and-location limitation of a study configured around the package's 935 Pennsylvania Avenue headquarters point; it does not retroactively change that modeled input. Accessed 2026-07-21.

ID	Source and use in this report
E141	Associated Press via PBS NewsHour, "Iran built a vast camera network to control dissent. Israel used it to track targets, AP sources say," March 23, 2026, https://www.pbs.org/newshour/world/iran-built-a-vast-camera-network-to-control-dissent-israel-used-it-to-track-targets-ap-sources-say - Reported precedent for state exploitation of street and traffic cameras to map senior officials, protective personnel, routes, parking locations, and meetings. Accessed 2026-08-08.
E149	U.S. Government Accountability Office, <i>Information Security: OPM Has Improved Controls, but Further Efforts Are Needed</i> (GAO-17-614), August 3, 2017, https://www.gao.gov/products/gao-17-614 - Official account that the 2015 OPM breaches affected 21.5 million individuals and involved sensitive personnel and security-clearance-investigation information. Accessed 2026-08-08.
E150	Federal Bureau of Investigation, "The Threat Posed by the Chinese Government and the Chinese Communist Party to the Economic and National Security of the United States," July 7, 2020, https://www.fbi.gov/news/speeches-and-testimony/the-threat-posed-by-the-chinese-government-and-the-chinese-communist-party-to-the-economic-and-national-security-of-the-united-states - FBI attribution and counterintelligence context for Chinese theft of OPM and other large U.S. personal-data repositories. Accessed 2026-08-08.
L2	Supporting Tools and Docs/ supporting_memoranda/ FlockSafety_Four_Vulnerability_Chain.md ; Supporting Tools and Docs/ supporting_documents/finding_cards/ Finding_01_... - Finding_04_... ; source-evidence: Raw Evidence/Documentation/ My_Four_Vulnerabilities.md - Vulnerability timeline, Cure53-style finding cards, chain framing, remediation status.
L4	Supporting Tools and Docs/ supporting_documents/analyses/ FlockNova_Application_Capability_Enumeration. md - Nova search, access-control, and client-side enforcement-gap findings.

ID	Source and use in this report
L5	Supporting Tools and Docs/ supporting_documents/analyses/ FlockSafety_Dev_Subdomain_Bundle_Enumeration. md - 370-host headline footprint, dev bundle families, and repeated-key evidence.
L8	Raw Evidence/FlockSafety/ flock_hardcoded_api_check.json - Primary validation artifact for key scope and 50 item grants.
L11	Supporting Tools and Docs/ supporting_documents/analyses/ ArcGIS_Search_App_Data.md - Search app data model, people-search device pool, plate/vehicle/search workflows.
L12	Supporting Tools and Docs/ supporting_documents/analyses/ ArcGIS_Hotlist_App_Data.md - Hotlist, alerts, hit history, and alerting data model.
L13	Supporting Tools and Docs/ supporting_documents/analyses/ ArcGIS_Mapped_Attributes.md - FlockOS/map layers and attributes; CAD/AVL, patrol/mobile, body-camera, drone, Raven/audio, and Flock911 surfaces; Flock911 incident-layer state, audio/transcript token classes, per- word start/end timing, selected-event state, and playback/ scrub controls.
L14	Raw Evidence/ArcGIS/ flocksafety_prod_arcgis_data/ analysis_summary.json ; source dump: Raw Evidence/ArcGIS/flocksafety_prod_arcgis_data/ features_*.json - 2025-12-14 ArcGIS export summary: 335,701 records, status/device-family counts from the package feature dump.
L15	Raw Evidence/ArcGIS/ flocksafety_prod_arcgis_data/ count_verification.json - Field verification: total/ status breakdown; active=1 (214,233) vs status=inService (214,073) split; confirms scale claims use status , not active .

ID	Source and use in this report
L20	Raw Evidence/Documentation/ My_Four_Vulnerabilities.md ; P1 - Repository disclosure record and published article for my 53-exposure research, Finding 1 scope analysis, and public ArcGIS corroboration method.
L35	Raw Evidence/Screenshots/ permissions_dronetoo.png ; Raw Evidence/ FlockNova/nova_flockdemo_com/js/ nova_flockdemo_com_App.js - Permission vocabulary including canCaravanSearch , Aerodome access, device tunnels, AVL sharing, nationwide lookup, and ArcGIS sign-in.
L37	Raw Evidence/FlockSafety/ dev_app_flocksafety_com/dev-beefeater ; Raw Evidence/FlockSafety/dev_app_flocksafety_com/ prod-beefeater - Burp XML wire records for Finding 3: anonymous GETs to Beefeater /api/v1/token/esri and /token/google returning HTTP 200 with tokens; no cookie/authorization.
L40	Superseded earlier detailed run; the full per-origin paired study records are retained by the researcher offline for authorized review and are not shipped in this package. - The granular per-origin records (synthetic origins, gates, blocks, selected and attempted routes, blocked-camera observations, outcome records, seeds, and summary hashes) come from an earlier method run. They were removed from the shipped package because they were superseded by the V7 run and contain exact per-origin routes near the installations. The canonical V7 route-coverage estimates and their SHA-256 summary bindings are in L41 and control any transcription conflict.
L41	Complete V7 snapshot and staged cohort reachability-v7-audit-92bd2e6a45c3a7c6 (index SHA-256 3d0755cb6fcc7dd165c6b9dd53ade8bfe5402773231904ea3807d1f17dc3b96b); primary conditional H0 and robust H0/H1/H2 results, methodology, frame accounting, split uncertainty, QA flags and warnings, hashes, and annexes. Canonical source: the hash-bound V7 snapshot at ../Supporting Tools and Docs/project_support/planning_and_qa/reachability_v7_audit_development_snapshot.json .

Per-site records

The V7 result for this installation - primary conditional H0 and robust H0/H1/H2 outcomes, frame accounting, uncertainty intervals, QA flags, seeds, and SHA-256 summary bindings - is recorded in the hash-bound V7 snapshot [L41]. The large per-origin staging artifacts (route geometry, frame classification, review packets) are not shipped in this package; the full records are retained by the researcher offline for authorized review [L40].