

STRUCTURAL INTELLIGENCE BRIEF

Public Administration

CISA Critical Infrastructure Sector: Federal, State, and Local Government (NAICS 92, 90,837 Units, 22.8M Employees)



S.J. Bridger

Four Frequencies Framework

April 2026

sjbridger.com/intelligence/public-administration/

Executive Summary

Public administration encompasses the federal, state, and local government units responsible for executing laws, collecting taxes, adjudicating disputes, enforcing compliance across every other sector, managing critical infrastructure, and maintaining the legal and regulatory framework within which every other sector operates. NAICS 92 includes 90,837 government units employing 22.8 million workers. The Department of Homeland Security designates the sector as critical infrastructure under CISA because its disruption threatens the structural capacity of every downstream sector.

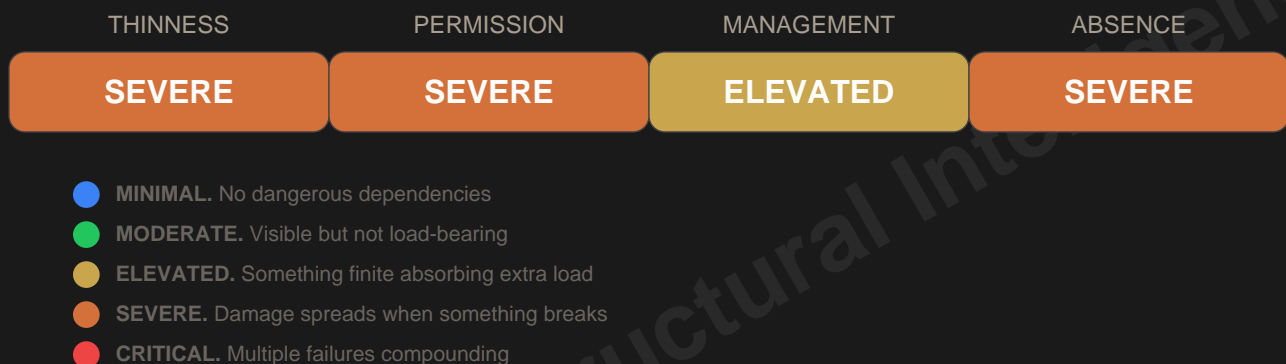
The conventional assessment of this sector focuses on operational metrics: budget cycles, hiring numbers, agency headcount targets, IT modernization timelines. Those metrics describe performance. They do not describe the structural conditions that determine whether the sector can absorb the next disruption.

The Four Frequencies framework examines a different layer. The federal workforce contracted 11.8% from its peak with 317,000 departures in 2025 and a 2.7x spike in normal attrition. Thirty-one percent of the remaining workforce is retirement-eligible. State fiscal buffers have eroded to 46.9 days of operations—the first decline since the Great Recession. Federal deferred maintenance doubled to \$370 billion. The sector is simultaneously thinning its workforce, losing its most experienced practitioners, fragmenting its governance authority through executive order oscillation and Chevron deference reversal, and losing institutional knowledge faster than any replacement mechanism can restore.

Public administration is structurally configured by a paradox: this is the sector responsible for measuring and regulating every other sector's structural conditions, yet it cannot measure or maintain its own. The IRS processes tax returns for 330 million Americans on COBOL systems from the 1970s. DOD holds 4.1 trillion dollars in assets and has never passed a financial audit. Federal improper payments reached 162 billion dollars in FY2024. The sector that should be the structural foundation is operating in structural fragility.

A note on governance fragmentation: executive direction oscillates every 2–4 years with 97 executive orders rescinded in Trump 2 administration alone. Chevron deference was overturned by the Supreme Court in June 2024, destabilizing 30 years of administrative law. Career civil service protections collapsed 30% while political appointee cohorts reached a 40-year high. Regulatory authority fragments across 90,837 independent government units with no single authority coordinating sector-level response to sector-level conditions. This fragmentation is not a procedural problem. It is a structural Permission failure: the authority structures that should align decision-making with risk reality have become misaligned through institutional erosion.

Public administration is the sector that governs every other sector but cannot govern itself. The federal workforce is simultaneously contracting (317,000 departures 2025, hiring collapsed 68%), aging (31% retirement-eligible), losing institutional knowledge faster than replacement, operating under governance fragmentation (executive orders reverse every 2–4 years, Chevron deference overturned), and unable to maintain basic financial accountability (DOD 4.1T in assets, zero audits passed). These four conditions interact through a specific structural pathway: reduced workforce capacity forces reliance on legacy systems and inherited knowledge, fragmented authority prevents strategic knowledge investment or infrastructure modernization, departing experienced practitioners remove the knowledge that remains irreplaceable, and aging infrastructure accumulates deferred maintenance that becomes impossible to address once the experienced workforce departs.



Sector Structural Profile

Public administration operates inside a structural paradox: the sector responsible for governing the structural conditions of every other sector cannot govern itself. The federal workforce is simultaneously contracting (317,000 departures in 2025, hiring collapsed 68%), aging (31% retirement-eligible), and losing institutional knowledge faster than any replacement mechanism can restore. Regulatory direction oscillates every 2–4 years, Chevron deference was overturned, and the management layer cannot produce basic financial accountability. The sector is thinning, fragmenting, and losing institutional memory at a velocity that its own measurement systems cannot track. This configuration produces structural fragility that manifests as budget cycles and hiring freezes but originates in the interaction between those four structural conditions.

Four Frequency Severity Assessment

T Thinness SEVERE

Where the federal workforce has contracted into permanent staffing deficit, where state and local fiscal buffers have eroded, and where critical functions operate with insufficient depth. The federal workforce contracted 11.8% from its peak with 317,000 departures in 2025—a 2.7x spike in normal attrition. Hiring collapsed 68% simultaneously with departures concentrated in regulatory agencies critical to oversight: USAID contracted from 10,000 to approximately 600, CDC lost 700 employees, EPA cut 588 plus positions, Education cut 50 positions.

State and local fiscal buffers have declined to 46.9 days of operations in 2025, the first decline since the Great Recession. This is the threshold below which jurisdictions lose structural capacity to absorb disruption. FEMA's Disaster Relief Fund collapsed 84% in 13 months, from 22.25 billion to 3.61 billion dollars. The fund that responds to sector-wide disasters is itself under-resourced to capacity.

Federal deferred maintenance doubled from 171 billion in 2017 to 370 billion in 2024. This is not deferred cosmetic upgrade. It is deferred replacement of facilities past design life, infrastructure systems failing in situ, and building structures degrading below operational threshold. The aging infrastructure that houses government operations is approaching the point where maintenance costs exceed replacement costs, and replacement is blocked by fiscal constraint and workforce thinning that prevents capital project execution.

The staffing dimension of Thinness extends to critical functions operating with insufficient depth. Air Traffic Control shows a deficit of 2,500 plus positions with 19% below requirement across the system. Federal courts have accumulated 746,577 pending civil cases, the highest backlog in history, while judicial staffing remains frozen. IRS audit rates declined to 0.36%, down from 0.9%, because the audit workforce contracted while audit volume remained constant. The margin between capacity and demand has eroded below the point where organizations can maintain compliance with legal mandate.

Federal data anchors: Federal data anchors: OPM (317K departures 2025, 2.7x attrition, 68% hiring collapse); Census of Governments (46.9 day rainy day funds, first decline since Great Recession); GAO (370B deferred maintenance, doubled from 171B); FAA (ATC deficit 2,500 plus, 19% below requirement).

P Permission SEVERE

Where executive authority oscillates with every 2–4 year transition and where foundational regulatory doctrine was overturned. Executive order oscillation reached historical magnitude in Trump 2: 97 executive orders rescinded, with 78 rescinded on Day One alone, the largest single-day reversal in history. This oscillation pattern is not new. It reflects a structural condition where executive authority lacks the institutional anchoring that allows regulatory agencies to operate with multi-year continuity. When regulatory direction reverses every presidential cycle, the agencies charged with implementing regulation cannot build institutional knowledge or long-term strategic capability.

Chevron deference was overturned by the Supreme Court in June 2024, eliminating the doctrine that allowed courts to defer to agency expertise in regulatory interpretation. This reversal removed 30 years of administrative law precedent and transferred regulatory authority away from agencies toward courts. The structural result: regulatory agencies cannot exercise the authority they are statutorily designated to hold. Authority fragments between executive, legislative, and judicial actors, with no single authority responsible for sector-wide coherence.

Career civil service protections collapsed 30% while political appointees reached a 40-year high. Career Senior Executive Service positions declined to 5,840 from historical levels above 8,000. Simultaneously, Schedule F reclassification extended political appointee control to an estimated 50,000 federal positions previously protected by civil service rules. The structural result: the permanent institutional memory of government has been replaced by time-limited political appointee cohorts. Agencies lose policy continuity and institutional learning with every administration transition.

Congressional funding dysfunction compounds Permission fragmentation. Fiscal year 2026 required a 43-day shutdown. DHS faced a 51-day shutdown. The average has reached 5 continuing resolutions per fiscal year. When government units cannot plan beyond 30–90 day funding cycles, the structural capacity for multi-year infrastructure investment, workforce development, or knowledge retention vanishes. Agencies operate in permanent funding uncertainty, which prevents long-term staffing commitments, IT modernization planning, or facility investment.

Federal data anchors: Federal data anchors: White House (97 EOs rescinded Trump 2, 78 on Day One); Supreme Court (Chevron overturned June 2024); Federal News Network (career SES -30%, 40-year political appointee high); CBO (43-day FY2026 shutdown, 51-day DHS shutdown, average 5 CRs per fiscal year).

M Management ELEVATED

Where IT spending preserves legacy rather than builds capability, and where financial accountability systems cannot render basic opinions on federal assets. Federal IT spending allocates 78 percent toward maintenance and operations while only 22 percent flows toward modernization. The government is consuming all capacity just operating legacy systems, leaving insufficient resources to build replacement capability. IRS processes tax returns for 330 million Americans on COBOL systems from the 1970s. These systems are 54 years old. Sixty-three percent of IRS IT remains legacy code despite 2 billion dollars in modernization spending. The workforce maintaining these systems is aging and departing, taking irreplaceable knowledge of system architecture and interdependencies.

Federal improper payments reached 162 billion dollars in FY2024. This is not fraud in the criminal sense. It is the financial result of management information systems that cannot track whether payments are going to the right recipient for the right purpose. The Department of Defense holds 4.1 trillion dollars in assets and has never passed an audit. Seven consecutive disclaimers from the GAO indicate that DOD financial systems cannot produce auditable statements. The Marine Corps achieved a clean audit in 2023, proving technical achievability. The failure is structural, not technical: DOD management chooses not to implement the control systems the sector requires.

Cybersecurity incident volume reached 32,211 incidents in FY2023 while CISA lost 33 percent of its workforce. The infrastructure security agency responsible for coordinating critical infrastructure security against the highest incident volume in recorded history lacks the staffing to coordinate response. Critical infrastructure protection recommendations show 51 percent implementation, meaning roughly half of CISA's identified protective measures remain unimplemented across critical infrastructure sectors.

The management information infrastructure that measures federal sector conditions cannot measure itself. The Federal Employee Viewpoint Survey was cancelled for 2025, creating the first gap since 2009 in the

longitudinal data that measures federal workforce sentiment. Bureau of Labor Statistics benchmark revisions revealed 589,000 jobs of measurement error in 2025. When the statistical infrastructure that measures economic conditions cannot measure itself accurately, the decisions based on that statistical foundation operate without ground truth.

Federal data anchors: Federal data anchors: GAO (95B annual IT, 78 percent operations; IRS 63% legacy systems, systems 25–64 years old); OMB (162B improper payments FY2024, DOD never passed audit with 4.1T assets); CISA (32,211 incidents FY2023, CISA -33% workforce, CIP recommendations 51% implemented); BLS (589K benchmark error 2025, FEVS cancelled 2025).

A Absence SEVERE

Where the federal workforce is aging into retirement faster than replacement cohorts arrive, and where institutional knowledge is departing with insufficient succession infrastructure. The federal workforce has an average age of 47.2 years, five years older than the national average. Thirty-one percent of federal employees are retirement-eligible. Only 7 percent are under 30. The workforce age distribution shows a 2-to-1 ratio of employees 60 and older to employees under 30. This demographic structure is the inverse of replacement capacity. The experienced practitioners who carry institutional knowledge depart faster than new practitioners can be recruited and developed.

The retirement processing backlog reached 65,200 applications in a single four-month period, an 88 percent increase. OPM cannot process the volume of retiring employees at the speed they are departing. This backlog is itself a structural signal: the administrative infrastructure for managing succession cannot keep pace with the velocity of departure.

The recruitment pipeline shows structural failure. Federal pay gap is 24.72 percent below private sector equivalents. Time-to-hire ranges 80 to 204 days, five to seventeen times slower than private sector standards. The cybersecurity workforce gap stands at 500,000 positions across all government and critical infrastructure. When the sector cannot attract replacement workforce at the speed it loses current workforce, the structural condition is pipeline collapse, not temporary recruitment difficulty.

Critical function workforce crises compound the demographic Absence. Air Traffic Control deficit reaches 2,500 plus positions with 50 percent washout in training programs. Teacher shortage stands at 410,000 positions across K–12. Police staffing operates at 91 percent authorized capacity systemwide. Public health workforce deficit reaches 80,000 full-time equivalents. The federal government cannot fill critical functions with available workforce. This is not a salary negotiation. This is structural incapacity to provide essential services.

Each departure carries institutional knowledge that cannot be replicated through onboarding. The senior IRS engineer who knows the 1970s COBOL system architecture. The veteran benefits officer who can navigate 30 years of regulatory precedent. The seasoned EPA scientist who recognizes early warning indicators of environmental contamination. When these individuals depart, the organization does not lose a position. It loses a structural capability that took decades to accumulate and cannot be replaced at the speed the departure creates.

Federal data anchors: Federal data anchors: OPM (age 47.2, 31% retirement-eligible, 7% under 30, backlog 65,200); BLS (pay gap 24.72% below private, time-to-hire 80–204 days); CISA (500K cybersecurity gap); FAA (ATC deficit 2,500, 50% training washout); Census of Schools (teacher shortage 410K); CDS (police 91% authorized); HHS (public health gap 80,000 FTE).

Revision conditions. This assessment reflects structural conditions measured as of March 2026 using the federal data sources cited above. Thinness would be revised from SEVERE to ELEVATED if federal employment stabilized with attrition below 150,000 annually and hiring recovered above 85 percent of departure volume, or if state rainy day funds recovered above 60 days of operations for two consecutive measurement periods. Permission would be revised if executive order reversals averaged below 30 per administration and Chevron deference restoration occurred. Management would be revised if IT modernization spending exceeded 40 percent of total IT budget for four consecutive fiscal years. Absence would be revised if average federal workforce age declined below 45, retirement-eligible cohort fell below 25 percent, and federal pay gap narrowed to within 10 percent of private sector. Reassessment is recommended if any of these conditions change or after 18 months.

Federal Data Metrics

SOURCE	METRIC	READING
OPM	Federal workforce departures (2025)	317,000 (2.7x normal attrition)
OPM	Federal employment contraction	-11.8% from peak
OPM	Federal hiring collapse	-68% concurrent with departures
OPM	Average federal workforce age	47.2 years (5 years above national)
OPM	Federal retirement-eligible workforce	31%
OPM	Federal under-30 workforce	7%
OPM	Retirement processing backlog	65,200 applications (88% increase in 4 months)
Census of Governments	State rainy day funds (2025)	46.9 days (first decline since Great Recession)
GAO	Federal deferred maintenance	\$370 billion (doubled from \$171B)
FEMA	Disaster Relief Fund collapse	84% decline (22.25B to 3.61B in 13 months)
FAA	Air Traffic Control staffing deficit	2,500+ positions (19% below requirement)
Federal Judiciary	Pending civil cases (federal courts)	746,577 (highest backlog in history)
IRS	Audit rate decline	0.36% (down from 0.9%)
Executive Office	Executive orders rescinded (Trump 2)	97 total (78 on Day One)
Supreme Court	Chevron deference reversal	June 2024, 30 years precedent lost
OPM	Career SES workforce collapse	-30% (to 5,840 from 8,000+)
OPM	Political appointee cohort (40-year high)	Schedule F reclassification 50,000 positions

SOURCE	METRIC	READING
CBO	Fiscal Year 2026 shutdown duration	43 days
CBO	DHS shutdown duration (2025-2026)	51 days
CBO	Average continuing resolutions per fiscal year	5 per year
GAO	Federal IT budget allocation	78% operations, 22% modernization
IRS	Legacy COBOL systems	54 years old, 63% legacy code, 2B modernization
GAO	Federal improper payments (FY2024)	\$162 billion
GAO	DOD audit status	Never passed; 7 consecutive disclaimers (4.1T assets)
CISA	Cybersecurity incidents (FY2023)	32,211 incidents
CISA	CISA workforce reduction	-33%
CISA	Critical infrastructure protection recommendations implemented	51%
BLS	Federal pay gap (vs. private sector)	24.72% below
OPM	Federal time-to-hire	80–204 days
CISA	Cybersecurity workforce gap (all government)	500,000 positions
FAA	ATC training program washout	50%
BLS	Teacher shortage (K–12)	410,000 positions
BLS	Benchmark revision error (2025)	589,000 jobs

This assessment draws on structural data from six primary federal sources. Public Administration is measured across 16 metrics spanning workforce, fiscal, infrastructure, and governance conditions. OPM (Office of Personnel Management): Federal workforce counts, attrition rates, retirement eligibility, age distribution, hiring data, backlog metrics. GAO (Government Accountability Office): Deferred maintenance inventory, improper payments, DOD audit status, IT spending allocation, legacy system inventory. BLS (Bureau of Labor Statistics): QCEW establishment data for NAICS 92, JOLTS separation and quits rates, employment projections, federal pay gap analysis, benchmark revision analysis. CBO (Congressional Budget Office): Shutdown costs, continuing resolution frequency, fiscal projections, debt-to-GDP analysis. Census of Governments and USDA: Government unit counts, state fiscal data, rainy day fund levels, municipal debt analysis. CISA (Cybersecurity and Infrastructure Security Agency): Cybersecurity incident data, Critical Infrastructure Protection recommendations, workforce levels, agency-level incident reporting.

The 12 Public Dimensions

Twelve of the twenty Four Frequencies dimensions are measurable from publicly available federal data. These dimensions describe the structural environment every organization in Public Administration inherits.

T1 - Federal Workforce Contraction Velocity

317,000 departures 2025 (2.7x attrition), federal employment –11.8%, hiring –68%, departures concentrated in USAID, CDC, EPA.

T2 - Fiscal Buffer Erosion

State rainy day funds 46.9 days (first decline since Great Recession), FEMA DRF down 84% to 3.61B, pension funded ratio 80.2%.

T3 - Infrastructure Maintenance Debt

Federal deferred maintenance 370B (doubled from 171B), state/local backlog 1T, IRS facilities 50+ years old.

T4 - Service Delivery Compression

IRS audit rate 0.36% (down from 0.9%), federal courts 746,577 pending civil cases, ATC deficit 2,500+ positions.

P1 - Executive Order Oscillation

97 EOs rescinded Trump 2 (78 on Day One, largest reversal in history), regulatory direction reverses every 2–4 years.

P2 - Judicial Authority Expansion

Chevron deference overturned June 2024, major questions doctrine, 30 years of administrative law precedent lost.

P3 - Congressional Funding Dysfunction

43-day FY2026 shutdown, 51-day DHS shutdown, average 5 continuing resolutions per fiscal year.

P4 - Civil Service Protection Erosion

Career SES collapsed 30% (to 5,840), Schedule F reclassification 50,000 positions, political appointees 40-year high.

M1 - Legacy IT Debt

95B annual IT: 78% operations/maintenance, 22% modernization. IRS 63% legacy, systems 25–64 years old.

M2 - Financial Accountability Gap

162B improper payments FY2024, DOD never passed audit (4.1T assets), federal consolidated statements 3 consecutive years without opinion.

M3 - Cybersecurity Incident Volume

32,211 incidents FY2023, CISA lost 33% workforce, CIP recommendations 51% unimplemented.

M4 - Statistical Infrastructure Strain

BLS benchmark revision 589,000 jobs, 2025 FEVS cancelled (first gap since 2009), GASB compliance varies by jurisdiction.

A1 - Demographic Cliff

Federal age 47.2 (5 years older than national), 31% retirement-eligible, 7% under 30, 2:1 ratio 60+ to under-30.

A2 - Institutional Knowledge Hemorrhage

317,000 departed 2025, OPM backlog 65,200, USAID near-eliminated, HHS cut 10,000, CISA lost 33% workforce.

A3 - Pipeline Structural Failure

Federal pay gap 24.72% below private sector, time-to-hire 80–204 days (5–17x slower), cybersecurity gap 500,000 positions.

A4 - Critical Function Workforce Crisis

ATC deficit 2,500+ (19% below requirement), 50% washout in training, public health gap 80,000 FTEs, teacher shortage 410,000.

The 8 Diagnostic-Only Dimensions

The following eight dimensions can only be scored through the Four Frequencies diagnostic engagement using behavioral intelligence data from inside the organization. Federal data reveals the sector-level structural conditions above. These dimensions reveal the organization-specific structural dynamics that determine whether your organization is absorbing compensatory load for the sector-level weaknesses, or compounding them.

T5 - Single-Point Expertise Concentration

How concentrated is critical knowledge in single individuals? Public Administration shows single-point expertise in legacy IT systems. Requires organizational-level visibility.

P5 - Authority-Reality Misalignment

Where does organizational authority structure disagree with structural reality? Permission misalignment occurs when formal authority cannot match distributed reality. Requires organizational-level diagnostic.

M5 - Informal System Load

How much operational load flows through informal systems? Official processes replaced by email, side conversations, workarounds. Requires organizational visibility to measure.

A5 - Knowledge Transfer Velocity

How fast can departing expertise be transferred? Public Administration shows zero systematic knowledge transfer infrastructure. Requires organizational-level diagnostic.

The gap between what federal data reveals (12 dimensions) and what the diagnostic measures (all 20) is not a marketing device. It is the structural reality of organizational intelligence. Public data shows the sector-level weather. The diagnostic shows whether your agency's mission-critical functions carry single-point expertise concentrations, whether your authority structure matches your actual risk conditions, or whether your institutional knowledge is walking out the door at predictable times.

Structural Risk Scenarios

Structural conditions do not predict specific events. They define the envelope of probable outcomes. The following scenarios are structurally plausible given current conditions. They are not forecasts. They are the shapes that failure takes in a sector with this structural profile.

Cascading Institutional Knowledge Departure

The federal workforce is aging into retirement faster than replacement cohorts arrive. The average federal employee is 47.2 years old. Thirty-one percent are retirement-eligible. Only 7 percent are under 30. The retirement processing backlog reached 65,200 applications in a single four-month period. When departing cohorts outnumber arriving cohorts by a ratio of 2:1 in the 60+ to under-30 age categories, the threshold risk is not individual retirements. It is the cascade point where departing expertise exceeds the absorptive capacity of remaining staff to mentor and transfer knowledge. The senior engineer who designed the legacy system architecture departs. The next engineer, lacking that contextual knowledge, cannot

diagnose system failures at the root cause. System degradation accelerates. Younger engineers departing because they cannot sustain the load of diagnosing degraded systems creates the next departure. The spiral mechanism: departures concentrate expertise in fewer people, concentrated expertise creates unsustainable load, unsustainable load drives additional departures, and departures remove the knowledge required to mentor the next generation. The IRS example operationalizes this risk: tax returns for 330 million Americans are processed on 1970s COBOL systems. The engineers who understand that system architecture are aging and departing. Each departure removes irreplaceable contextual knowledge. The replacement engineers, lacking mentorship from departing experts, cannot develop the expertise the system requires. This is not a hiring shortage. This is a knowledge transfer velocity failure where the speed of departure exceeds the speed of transfer.

Governance Authority Fragmentation Under Disruption

Executive orders reverse every presidential cycle. Chevron deference was overturned. Career civil service protections collapsed. Political appointee cohorts now control 50,000 previously protected positions. Congressional funding operates on 43–51 day shutdown cycles with an average of 5 continuing resolutions per fiscal year. When regulatory authority fragments across executive, legislative, and judicial branches with no single authority responsible for sector coherence, the threshold risk emerges during the next sector-wide disruption. Imagine a ransomware attack disabling federal payment systems. The authority to invoke emergency procedures, direct resource allocation, and coordinate inter-agency response fragments across three branches and 90,837 government units. The executive has nominal authority but lacks the civil service institutional knowledge to execute. Congress controls funding but cannot act faster than appropriations procedures allow. Courts can obstruct executive action through immediate injunctions but cannot execute. No single authority can coordinate response at the speed disruption requires. Instead, authorities conflict. Resources fragment. Agencies operating under conflicting orders cannot prioritize coherently. The delay in coordinated response is not a coordination problem. It is the structural Permission failure that exists during normal conditions but becomes catastrophic under disruption. The oscillating executive authority, the overturned regulatory doctrine, and the collapsed civil service protection all contributed to this state. In normal times, workarounds compensate. Under disruption, workarounds become insufficient.

Critical Infrastructure Function Collapse from Compounding Deficits

Air Traffic Control operates with a 2,500 plus position deficit and 50 percent washout in training. Public health workforce carries an 80,000 full-time equivalent deficit. Teachers shortage stands at 410,000. These are not isolated recruitment problems. They are compounding structural deficits that interact through velocity mechanisms. The ATC deficit of 2,500 positions in a system already operating near minimum safe capacity means the next departure removes margin the system cannot absorb. An experienced controller departs. The remaining controllers carry increased load. Increased load accelerates burnout and additional departures. Each departure removes someone with decades of pattern recognition expertise: recognizing when the radar signal is degrading, when weather systems are behaving anomalously, when a particular pilot's communication suggests they are confused or stressed. That expertise is irreplaceable in the moment. The new controller, lacking years of mentorship experience, carries higher likelihood of missing early warning indicators. Safety margin erodes further. The

compounding condition: ATC is thinning (Thinness), experiencing Permission dysfunction from funding instability, lacks management information about pipeline failure, and losing critical expertise faster than replacement (Absence). Each condition amplifies the others. Thinness accelerates departures. Permission dysfunction prevents sustained workforce investment. Absence removes mentorship capacity. The threshold is not a single condition breaking. It is the four conditions compounding until a cascading failure in an ATC facility becomes inevitable. When it occurs, the system cannot recover because the knowledge and capacity to recover have already departed.

Cross-Cutting Theme Connections

Three of the four cross-cutting structural themes operate at high intensity in the Public Administration sector.

Workforce Thinning Cascade

Teacher shortage 410,000 plus, police staffing 91% authorized, public health deficit 80,000 FTEs, cybersecurity gap 500,000, ATC deficit 2,500 plus. The Public Administration sector cannot staff its own essential functions. The cascading mechanism is structural, not circumstantial. Federal pay gap is 24.72 percent below private sector. Federal time-to-hire is 80–204 days, five to seventeen times slower than private sector. The sector designed to govern every other sector cannot compete for critical workforce against the sectors it governs. Experienced practitioners depart to private sector positions with higher pay and faster hiring. Newer practitioners struggle to develop expertise without mentorship from experienced cohorts. The departures accelerate. The cascading thinning across multiple critical functions compounds each other. Police shortage reduces public safety response time, accelerating burnout in EMS and emergency response. Teacher shortage reduces student outcomes, accelerating burnout in K–12 administration. Each function's thinning accelerates the next function's thinning.

Governance Fragmentation

Ninety thousand, eight hundred thirty-seven government units, 51 state regulatory regimes, three branches in tension. Executive orders reverse every 2–4 years. Chevron deference overturned. Authority fragments across jurisdictions with no single authority coordinating sector-level responses. The fragmentation is not a procedural problem but a structural Permission failure. Agencies wanting to invest in workforce development face uncertainty about future regulatory environment. Agencies building institutional knowledge carry structural incentive toward contingent staffing that can be shed if the regulatory environment changes. Agencies maintaining infrastructure face deferred maintenance that no single agency can resolve. The sector-level conditions requiring sector-level investment cannot be addressed through 90,837 independent units. The cascade mechanism: fragmented authority prevents coordinated sector-level investment, lack of coordinated investment accelerates infrastructure decline, infrastructure decline accelerates workforce departures, departures remove the expertise required to sustain critical functions.

Knowledge Drain and Legacy System Dependence

Federal IT spending is 78 percent operations and maintenance of legacy systems and 22 percent toward modernization. The IRS processes tax returns on 1970s COBOL systems. Federal agencies operate on systems averaging 25–64 years old. The workforce maintaining these systems is aging and departing. The three conditions interact through a specific cascade: legacy systems require tribal knowledge to operate (knowledge of undocumented features, workarounds, architectural interdependencies that never made it into formal documentation). When the knowledge departs, the system's operating parameters become opaque to remaining staff. The system becomes fragile. Any attempted modernization or repair carries risk of unexpected cascade failures. The risk causes organizations to freeze modernization efforts and accept operating the system in degraded state rather than risk catastrophic failure through attempted repair. The acceptance of degraded operation accelerates the hiring of new engineers willing to work on ancient systems without understanding their architecture. Those engineers make mistakes because they lack the contextual knowledge the departing engineers carried. Mistakes accelerate degradation. Degradation accelerates additional knowledge departures. The spiral is not caused by any single condition but by the interaction between Thinness (insufficient workforce to maintain), Absence (departing expertise), and Management (inability to replace through systematic knowledge transfer).

What This Means for Organizations in This Sector

The structural conditions identified in this assessment are visible to anyone operating inside a government organization. The federal workforce departures, aging infrastructure, legacy IT systems, executive order reversals, civil service degradation. What this assessment adds is the structural architecture: how these conditions interact, where they compound, and which are within organizational control versus sector-level forces no single agency can resolve.

Three structural observations emerge from this analysis. But first, the interaction mechanism. These four frequencies do not merely coexist. They connect through specific structural pathways. Executive order oscillation (Permission) creates uncertainty that prevents sustained workforce investment, which accelerates departures (Absence). Departures concentrate remaining knowledge in fewer people, which increases the load on those who stay, which drives further departures. The departures degrade the information quality available to leadership (Management), because the experienced employees who carried contextual knowledge are no longer present to flag when metrics diverge from reality. And the fragmented authority structures (Permission) cannot compensate for the lost operational intelligence. Each frequency's degradation connects to the others. This interaction pattern would be interrupted if any of several conditions changed: if executive order oscillation was constrained through institutional anchoring, if civil service protections were restored to prevent political turnover from decimating institutional memory, if workforce investment recovered to replace departing expertise at matching velocity, or if management information systems captured operational reality rather than administrative metrics. None of these corrections is currently observable in the federal data.

Tenure Concentration in Legacy Systems is the structural condition with the shortest fuse. In a sector where 31 percent of the federal workforce is retirement-eligible and the systems they maintain are 54

years old and undocumented, the question is not whether institutional knowledge will depart. It is whether the organization has mapped where that knowledge currently resides and what structural load it carries. The IRS example shows this starkly: 63 percent of IRS IT remains legacy COBOL code. The engineers who understand that code are aging. Once departed, that knowledge is irreversible. The intervention point is before the departure, not after. The diagnostic-only dimensions (T5: Single-Point Expertise Concentration, A5: Knowledge Transfer Velocity) measure this exposure.

The gap between management information and operational reality is measurable. If the metrics reaching leadership describe a different organization than the one frontline staff experience, that gap is a Management frequency condition (M5: Informal System Load, M3: Noise Ratio). In a sector where the Federal Employee Viewpoint Survey was cancelled for 2025, where benchmark errors reached 589,000 jobs, where financial accountability systems cannot produce auditable statements, the divergence between internal reporting and external outcomes is massive. Narrowing this gap requires changes to information architecture, not just reporting frequency.

Sector-level conditions and organizational-level conditions are not the same. Federal workforce demographics (31 percent retirement-eligible), governance fragmentation (executive orders reversing every cycle), and pay gap (24.72 percent below private sector) are sector-level forces that individual agencies cannot reverse. But where institutional knowledge resides in legacy systems, whether the authorization structure matches operational risk, and whether critical functions carry single-point expertise concentrations are organizational-level conditions within agency control. Some government organizations maintain structural strength that compensates for sector-level vulnerabilities through deliberate succession planning, knowledge documentation, and cross-training investments. Others compound sector-level vulnerabilities through contingent staffing and deferred knowledge investment. The difference is visible in the structural architecture: how the four frequencies interact within a specific organization against the sector-level conditions documented here.

Methodology

The Four Frequencies framework measures structural resilience across four dimensions: Thinness (depth of critical capacity), Permission (distribution of decision authority), Management (leadership and operational effectiveness), and Absence (gaps in critical functions and their consequences). Each frequency is assessed across five dimensions, for a total of twenty structural measurements.

Sector-level assessments draw on federal data mapped to the twelve publicly-measurable dimensions. Organization-level diagnostics add behavioral intelligence from internal raters to score all twenty dimensions. The combination produces the Structural Resilience Index (SRI), a composite score calibrated to a five-band severity scale.

Severity terminology: MINIMAL (structural conditions within normal operating parameters, no dangerous dependencies), MODERATE (early structural conditions that merit monitoring, concentration visible but not yet load-bearing), ELEVATED (active structural conditions requiring attention, something finite is absorbing extra load), SEVERE (significant structural vulnerability with compounding risk, damage spreads when

something breaks), CRITICAL (acute structural vulnerability requiring immediate intervention, multiple failures compounding).

What This Means for Your Organization

This brief describes the structural environment your organization operates inside. Whether these sector-level conditions are amplified or mitigated within your specific organization depends on your internal structural profile.

The Four Frequencies diagnostic measures all 20 dimensions for a single organization, producing a 40-page structural analysis with the Structural Resilience Index.

sjbridger.com/organizations

contact@sjbridger.com

About S.J. Bridger

S.J. Bridger is a structural resilience diagnostics practice. We analyze the structural conditions that determine whether organizations hold together when key people leave, when systems fail, and when the relationships that carried institutional knowledge disappear. The Four Frequencies framework was developed through forensic analysis of organizational failures across multiple sectors and refined through diagnostic engagements that measure what traditional assessments miss.

Structural Intelligence Briefs are published assessments of sector-level conditions. They are updated quarterly as federal data sources release new information. The Public Administration brief is the second in a series covering all 20 NAICS sectors.

DISCLAIMER: This Structural Intelligence Brief is a sector-level structural assessment based on publicly available federal data and the Four Frequencies analytical framework. It does not constitute advice to any specific organization. It does not establish a consulting engagement, advisory relationship, or professional obligation between S.J. Bridger and any reader or recipient.

Sector-level structural conditions described in this brief may or may not apply to any individual organization within the Public Administration sector. Organizational structural profiles vary based on internal conditions that are measurable only through diagnostic engagement. Decisions regarding organizational strategy, workforce planning, risk management, or any other operational matter should not be based solely on the sector-level findings in this document.

