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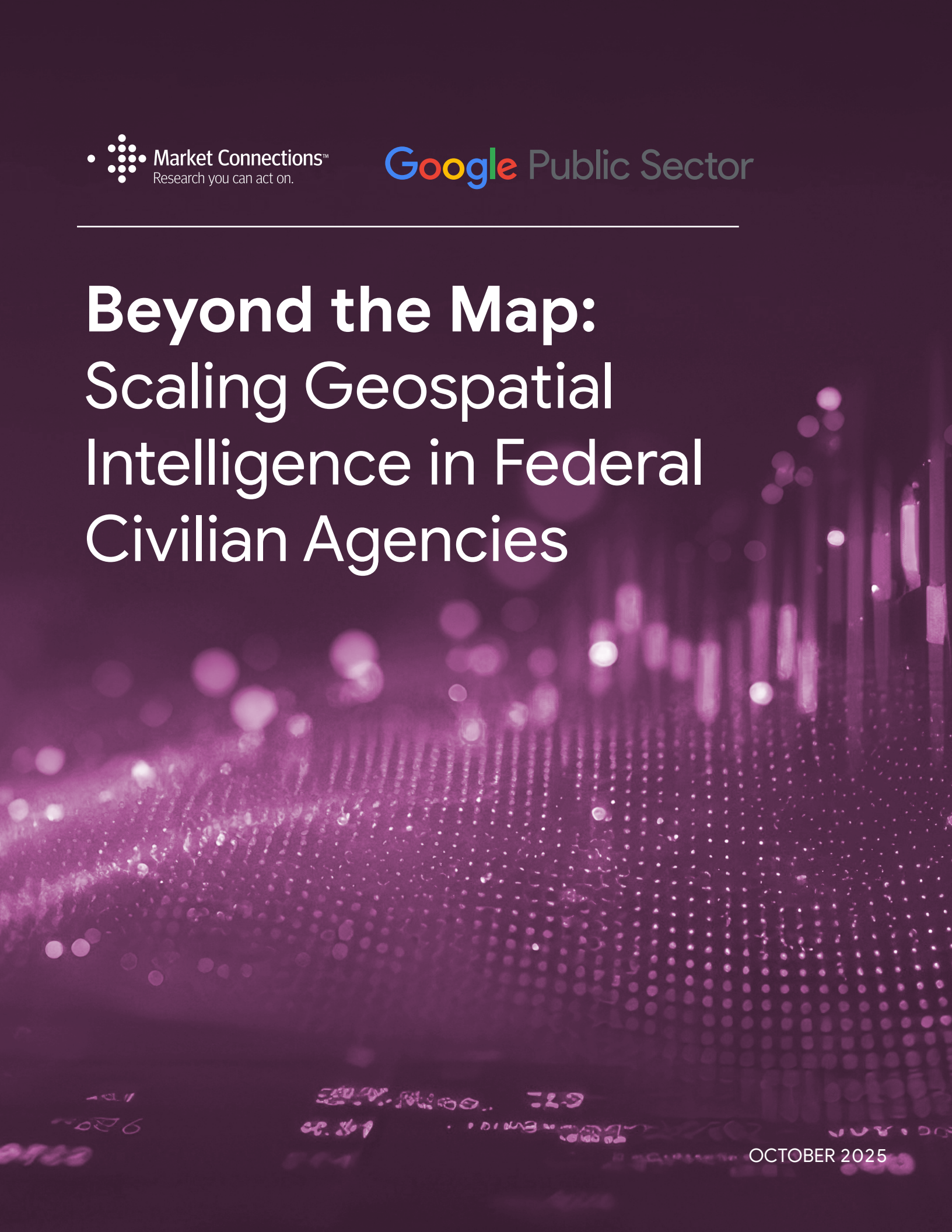
Google Public Sector

Beyond the Map: Scaling Geospatial Intelligence in Federal Civilian Agencies



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INTRODUCTION

Federal civilian agencies are operating at a critical inflection point. The public expects faster, smarter, and more transparent services, while agencies face pressure to deliver under tightening budgets and growing mission demands. From disaster response to infrastructure modernization, leaders are discovering that geospatial intelligence is not just a technology investment—it is a fundamental enabler of 21st-century governance.

Yet despite its importance, adoption remains limited. Only 17% of federal civilian agencies report that their geospatial data is fully integrated across systems. This lack of integration reduces agencies' ability to make decisions with speed, coordinate across jurisdictions, and anticipate emerging risks. It also means that many agencies are falling behind the private sector, where advanced geospatial platforms are fueling innovation in logistics, transportation, and environmental monitoring.

This paper examines the state of geospatial intelligence in federal civilian agencies, identifies barriers to adoption, and outlines actionable strategies to help leaders close the gap.

Photo source: VideoFlow via Adobe Stock.

METHODOLOGY

Market Connections and Google partnered to design an online survey of 400 federal, state, and local government employees, fielded in May 2025. 152 of these respondents are federal civilian employees, split between operational and mission-focused responsibilities.

GEOSPATIAL INTELLIGENCE: A MISSION IMPERATIVE

THE STRATEGIC IMPORTANCE OF GEOSPATIAL DATA

The survey confirms what many leaders already suspect: geospatial capabilities are now mission-critical. Forty-three percent of federal civilian respondents rank geospatial data as "critical" or "very important" to their missions, while 44% identify the implementation of a comprehensive geospatial platform as essential for improving efficiency.

This recognition reflects a broader trend across government: leaders are increasingly aware that traditional data systems, focused as they are on transactions, cases, or documents, cannot capture the dynamic realities of mission operations. Geospatial platforms provide a unifying layer of insight, enabling leaders to understand not just what is happening, but where and why. For agencies charged with managing dispersed assets, populations, and environmental factors, this shift is transformative.

BENEFITS DRIVING AGENCY DEMAND

The survey also points to the tangible benefits motivating agency investment. Sixty-three percent of respondents cite improved decision-making as the most valuable outcome of geospatial tools. This reflects a shift toward evidence-based governance, where leaders increasingly rely on real-time data visualization to guide complex choices.

Fifty-one percent of respondents identify enhanced collaboration as another major driver, highlighting the ability of shared geospatial platforms to reduce duplication and align cross-agency operations. Similarly, 45% of federal civilian leaders report valuing the potential time savings as a top benefit of GIS tools, recognizing the potential for improved efficiency and streamlined workflows. Federal civilian respondents are also the most likely to see matching commercial-grade geospatial capabilities (e.g., SpaceX/Tesla-level mapping) as "very important" or "critical." This expectation underscores the risk that agencies face if they lag behind the private sector: when citizens interact daily with highly advanced mapping and logistics applications, experiencing outdated or inefficient government systems can diminish their trust in those government services.

HIGH IMPACT USE CASES

- **Emergency Response (Top Sectoral Benefit):** Real-time geospatial tools enable coordinated disaster response and resource allocation. All agency types rank emergency response as the #1 mission area benefiting from geospatial capabilities.
- **Environmental Monitoring:** Supports agencies like NOAA in tracking climate change, land use, and environmental hazards.
- **Urban Planning and Infrastructure:** Geospatial analytics inform modernization efforts and resilience planning.
- **Logistics and Resource Management:** Spatial data enhances efficiency for asset management and inter-agency coordination.

THE STATE OF GEOSPATIAL ADOPTION

However, while awareness of geospatial's value is growing, actual adoption remains fragmented. Only 17% of federal civilian agencies report that their geospatial data is fully integrated across systems, creating operational silos that limit the visibility of decision-makers. This lack of integration hampers mission outcomes, especially in cross-jurisdictional contexts like disaster response or infrastructure planning.

Most agencies fall into a middle ground: 57% use geospatial tools to a moderate extent, but only 17% report extensive use. This partial adoption suggests that agencies understand the promise of geospatial intelligence but lack the capacity, resources, or leadership engagement to scale usage effectively.
The challenge is not one of awareness. Nearly half of respondents describe themselves as knowing "quite a bit" about geospatial data, and 5% identify as experts. This suggests a strong baseline of knowledge within agencies. However, 56% of leaders cite staff training as the largest barrier to adoption, pointing to a structural gap in workforce development. Without trained staff to interpret and apply geospatial data, agencies risk underutilizing even the best tools.

Budget constraints represent another significant barrier; forty-seven percent of respondents identify funding as the top obstacle. With increased budget scrutiny and cost-cutting measures in civilian agencies, investments in new platforms and access to advanced analytic tools can be delayed.

THE UNTAPPED POTENTIAL OF AI/ML IN GEOSPATIAL INTELLIGENCE

Artificial intelligence and machine learning represent the next evolution of geospatial intelligence, offering agencies the ability to scale insights far beyond what traditional analysis allows. Today, only 39% of federal civilian agencies expect to fully integrate AI/ML into their geospatial platforms. While lower than their counterparts in defense (44%) and state and local government (45%), this reflects an early stage of adoption—and a significant opportunity for growth.

The potential applications are wide-ranging. AI/ML can automate the analysis of massive geospatial datasets, allowing agencies to track changes in land use, monitor natural resources, or identify emerging risks with speed and accuracy. Predictive modeling can help anticipate the impacts of disasters, forecast infrastructure needs, or project public health trends before they escalate into crises. Logistics and field operations also stand to benefit from real-time AI-enabled spatial analytics, helping leaders deploy resources more efficiently and adapt quickly to changing conditions.

Photo source: InfiniteFlow via Adobe Stock.

Rather than viewing AI/ML as a distant or experimental technology, federal civilian agencies can treat it as a natural extension of their existing geospatial capabilities. By weaving AI-driven insights into core mission workflows, leaders can enhance operational awareness, improve resilience, and drive more proactive, data-informed decision-making.

SCALING GEOSPATIAL INTELLIGENCE FOR FEDERAL CIVILIAN MISSIONS

The path forward requires clear action. Agencies already recognize the value of geospatial intelligence, but the gaps remain: fragmented systems, budget constraints, and a lack of trained personnel are holding back transformative outcomes.

To overcome these barriers, agencies must reframe geospatial technology not as an isolated IT investment, but as a strategic mission enabler. That means budgeting for geospatial capabilities as part of modernization plans, building secure and interoperable platforms that enable cross-agency collaboration, and investing in workforce training to ensure tools are used to their fullest potential.

The integration of AI/ML should also be treated as a priority rather than an afterthought. By embedding predictive and automated analytics into geospatial workflows, agencies can shift from reactive to proactive governance—anticipating needs, managing risks, and delivering better outcomes for citizens.

Ultimately, scaling geospatial intelligence is about more than technology. It is about equipping civilian agencies with the tools to govern more effectively in a rapidly changing world.

CALL TO ACTION FOR FEDERAL CIVILIAN AGENCIES

PRIORITIZE GEOSPATIAL IN BUDGETING:
Make geospatial technology funding a core part of agency modernization plans.

INVEST IN WORKFORCE DEVELOPMENT:
Build training programs that close the 56% skills gap and prepare teams for AI-enabled geospatial tools.

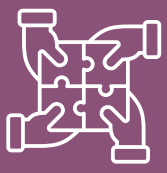
CHAMPION LEADERSHIP ENGAGEMENT:
Equip executives with clear ROI metrics and mission-aligned success stories to drive prioritization.

ADOPT OPEN, INTEROPERABLE PLATFORMS:
Break down silos and ensure geospatial data can flow seamlessly across systems and agencies.

ACCELERATE AI/ML INTEGRATION:
Move beyond basic mapping to predictive, automated, and real-time analytics.

CONCLUSION

Federal civilian agencies recognize the promise of geospatial intelligence, but adoption has not kept pace with mission demands. Closing the geospatial gap will require more than incremental upgrades—it demands a shift in how leaders view, fund, and scale these capabilities. By treating geospatial intelligence as a strategic priority, agencies can move from fragmented adoption to truly integrated systems that strengthen collaboration, improve preparedness, and deliver measurable impact for the public.



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