Infrastructure Doesn't Have A Data Problem. It Has An Intelligence Problem.

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Infrastructure projects now generate more data than at any point in the industry's history: mobile inspection tools, digital plan submissions, GPS-enabled equipment, drones. The jobsite technology stack has expanded dramatically in the past five years.

The industry has historically treated that growth as a threat. More data meant more noise, more storage, more places for information to get lost between planning, estimating, bidding, and construction.

The threat was real. The fix agencies reached for wasn't quite right.

FMI Corporation's research found that 95% of the data captured across construction and engineering goes unused. Autodesk and FMI put a more recent number on what that costs: $1.85 trillion in 2020 alone, which is more than the entire Infrastructure Investment and Jobs Act (IIJA) by roughly $650 billion. Those figures are real. What's changed is what it takes to fix the core issue of data usage.

For years, unused data meant disconnected data, trapped in whichever system created it, unreadable anywhere else. The industry's answer was to connect everything: one pipeline, one source of truth, every phase of a project talking to every other phase. Planning feeding estimating. Estimating feeding bidding. Bidding feeding the next planning cycle. That answer was correct. It was also, for most agencies, a multi-year IT project few could actually finish.



I spent five years running exactly that kind of project, at a company competing for a share of a $2.2 billion infrastructure market. The strategy meant pulling five acquired businesses, five different tech stacks, five different data models, and five different institutional habits into a single connected platform. Getting to that connected environment was the right goal. It was also the hardest, slowest, most expensive part of the job, and most agencies don't have five years or that kind of budget to spend chasing it.

AI changes what reaching that goal actually requires.

Modern AI tools can read data in whatever condition they find it: unstructured field notes, scanned plans, bid histories sitting in three systems that have never spoken to each other. Unstructured data used to be treated as unusable until someone forced it into a clean, structured format first. AI can

now extract the same intelligence from it directly with no reformatting project required, no waiting for every system to be physically merged before the insight becomes available. Processing power and data location, once real constraints on getting to that unified view, aren't the barrier they used to be. The destination hasn't changed. The cost of the trip has.

That doesn't mean the trip is automatic. AI without domain fluency just processes faster. It doesn't know that a bid 40% below the engineer's estimate on a corridor project is a red flag, not good fortune. It doesn't know why an inspector's note reading "material substitution, unapproved" matters more than 10 pages of routine daily logs around it. That judgment comes from people who have estimated, bid, and inspected, paired with a toolset built for the domain, not a general-purpose one bolted on afterward.

Infotech's work on AASHTOWare Project across state DOTs exists because of that pairing: it only creates value when built by people who understand how a letting behaves, not just how a schema gets normalized. Connectivity is still the goal. AI is what makes reaching it possible without the years-long integration project it used to demand. Domain expertise is what turns that effort into a decision worth trusting.

A REGULATORY SIGNAL WORTH PAYING ATTENTION TO

In February, 2025, the U.S. DOT Office of Inspector General (OIG) released Report EC2025019, finding significant indications of potential complementary bidding — a collusion pattern where firms agree in advance who wins a contract while the others submit bids just high enough to preserve the appearance of competition — across bid records from six state DOTs. The estimated cost impact: $1.19 billion in flagged contracts over the eight-year period examined.

We work inside the systems that hold this exact kind of bid data every day, across dozens of state DOTs. The pattern OIG found isn't hiding in some inaccessible archive. It's sitting on jobsites the agencies already populate every time they run a letting, evidence that the barrier was never the data's existence, but the work of pulling a unified, comparable view out of it.

The Federal Highway Administration (FHWA) partially concurred, agreeing with the goal, disputing the machine-learning methodology. OIG considers the recommendation open and unresolved.

Whatever FHWA ultimately decides, the underlying finding is the one worth sitting with: an outside audit surfaced a pattern that six state DOTs' own bid data could have surfaced internally, years earlier, if anyone had the tools and the domain knowledge pointed at it. For construction managers, this is both a compliance signal and a competitive one.

THE ACCOUNTABILITY ARGUMENT

For public agencies, this extends past efficiency into governance. ASCE's 2025 Infrastructure Report Card raised the nation's overall grade to C, the highest since the report card began in 1998. It also projects a $3.7 trillion investment gap, up from $2.59 trillion four years earlier. With IIJA authorizations expiring in 2026, agencies face growing pressure to show that current investment is delivering measurable results.

Those proof points are no longer optional. Funding requests backed by measurable cost trends and documented outcomes carry weight that anecdotal precedent doesn't. In an industry where every public dollar draws scrutiny, the ability to show, with evidence, how a decision was made and what it delivered has moved from advantage to requirement.

WHERE THIS ACTUALLY GOES

The future of infrastructure delivery is still a connected one. What's changed is how agencies get there. The ones still budgeting for a multi-year system-unification project are solving a problem AI has already made cheaper to solve. Agencies pairing AI with people who know how a corridor bid actually behaves, how a change order actually starts, and what a defensible cost trend looks like versus noise reach the same destination faster, with the data they already have.

Infrastructure doesn't have a data problem. It has an intelligence problem. Getting to intelligence used to mean connecting everything first. Now it means knowing what to build, and what to ask, once you can already see across it.

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About the Author

Shelly Nooner is president at Infotech, the official contractor for AASHTOWare Project™ software development and a provider of digital infrastructure for planning, bidding, construction management, and inspection across the public sector. She leads Infotech's product strategy under the company's Unified Civil Intelligence philosophy, connecting data and workflows so contractors, suppliers, vendors, DOTs, and local agencies can reduce risk and work more efficiently. Nooner spent 25 years at Trimble before joining Infotech in January 2025 and was named to Women We Admire's "Top 50 Women Chief Product Officers of 2026."

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