FMI Consulting

Private Equity Sector Brief

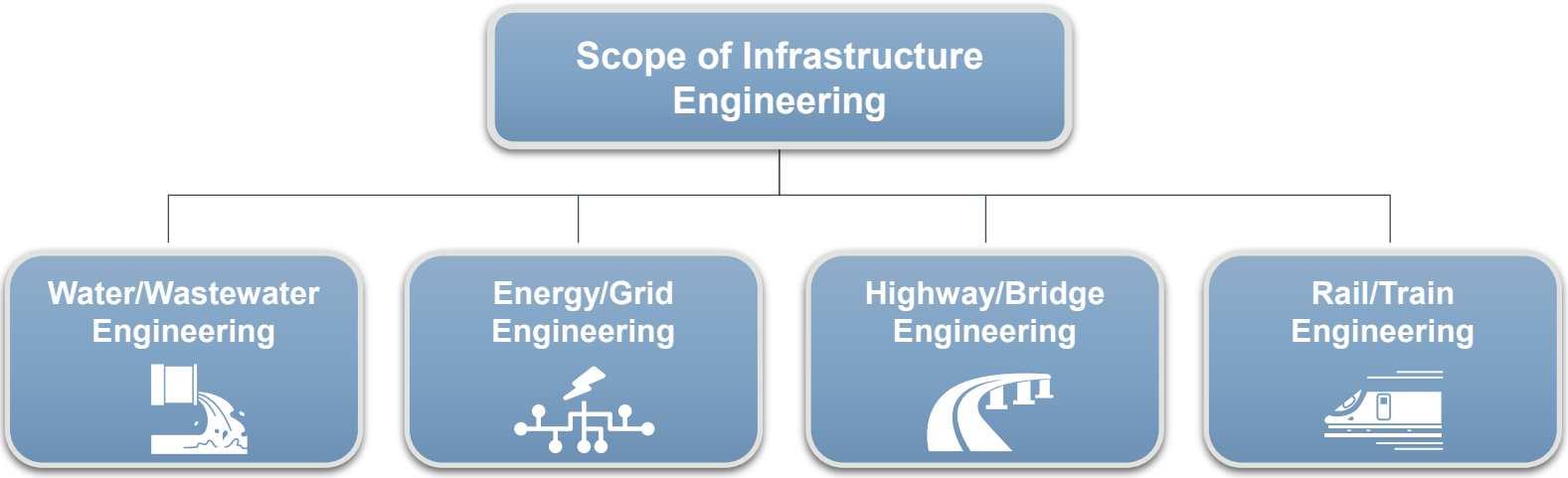
Infrastructure Engineering

December 2025

Executive Summary: Infrastructure Engineering

Scope Overview

Infrastructure engineering is a broad category referring to the planning, analysis, design, permitting, environmental review, and construction engineering and inspection (CEI) of nonbuilding structures. The intended purpose of this paper is to cover four subcategories of infrastructure engineering that have attractive growth drivers, funding sources and market demand for critical engineering services.



Planning, permitting and design of potable water, wastewater and stormwater systems; treatment, conveyance, storage and regulatory compliance.

Example projects:
Water treatment plants/wastewater treatment plant upgrades, per- and polyfluoroalkyl substances (PFAS) testing, flood resilience planning

Planning, design and review of transmission, substation and distribution engineering; interconnections, grid hardening and integration of new loads.

Example projects:
Microgrids, undergrounding and wildfire hardening, substation expansion

Planning, design and inspection of roadway corridors and structures, including geometrics and pavements, bridges and culverts, intelligent transportation systems (ITS).

Example projects:
Bridge inspections and rehabilitation and replacements, corridor widenings

Passenger and freight rail planning and design for track, signals, grade crossings, stations and electrification, with safety and capacity improvements.

Example projects:
Rail extension and rehabilitation, yard expansion, positive train control (PTC) and signal upgrades

Executive Summary: Infrastructure Engineering

This brief outlines the market opportunity, thematic drivers and an overview of market fragmentation within the infrastructure engineering market, with a focus on highway/bridge, rail/train, water/wastewater and energy/grid infrastructure engineering. It is intended to serve as a roadmap for private equity firms developing an investment thesis or targeting an acquisition in the space.

Strategic Case for Infrastructure Engineering

Federal and state infrastructure funding programs are driving increased investment in improvements and new projects, fueling investor interest in the U.S. infrastructure engineering market. The market remains highly fragmented and skewed toward smaller, regional providers, creating opportunities to consolidate specialists and capture a greater share of recurring public sector work.

Mandatory Repair and Upgrades

- Engineering scopes for public projects are expanding as public safety continues to drive more complex testing requirements, presenting opportunities that are unlikely to be deferred or canceled. Aging water, bridge, transit and grid assets must be inspected and upgraded, and factors such as mandatory inspections, reoccurring storm damage and legislative changes drive repeat work.

Regulatory Policy and Compliance Drive Investment

- Tougher standards, such as the National Bridge Inspection Standards, the U.S. Environmental Protection Agency's lead service line replacement rule and PFAS treatment requirements, expand the required scope for design, permitting and inspection. Providers with strong local and specialized knowledge are often preferred, as local regulations and permitting processes can differ significantly across the U.S.

Roll-Up Path to Scale

- Firms that pursue a roll-up strategy composed of specialized providers benefit from increased regional coverage, consolidated prequalified status across owners, improved staffing capacity, raising project win rates. Adding capabilities such as environmental/permitting broadens scope capacities and wallet share across key public agencies.

Investing In People as a Differentiator

- Shortages of licensed engineers, inspectors and experienced project managers constrain delivery, yet public agencies favor providers who can mobilize full teams on schedule. Platforms that build recruiting pipelines, training and pooled staffing win larger projects and secure premium work.

Market Size and Growth Potential

Infrastructure engineering demand is supported by resilient federal/state funding mechanisms, public safety mandates and aging assets, which can provide multiyear visibility into design, permitting and construction engineering and inspection work.

- Total market: $30.6 billion in anticipated spending for 2025; expected to surpass $39 billion by 2029 (6.5% compound annual growth rate (CAGR)).
- Segment outlook: Energy and grid lead growth; water/wastewater and highway/bridge remain large, resilient bases; rail/train benefits from transit and safety programs.
- Funding: Multiyear programs and tightening standards sustain recurring engineering demand.

Executive Summary: Infrastructure Engineering

Key Growth Drivers

A primary driver of growth is the modernization of aging public infrastructure and the need for resilience across water/wastewater, highways/bridges, rail/train and the electric grid. Multiyear federal and state programs convert these needs into predictable project pipelines, making engineering spend less cyclical compared to other industries.

The following examples highlight key macro-level drivers across major markets but are not exhaustive of state, local or owner-specific factors influencing demand.

- Inspections, rehabilitations and replacements are required to maintain public safety and service reliability. Increasing natural disasters also necessitates repair work.
- Lead service line replacement, PFAS treatment, National Bridge Inspection Standards (NBIS) and Combined Sewer Overflow (CSO) rules drive mandatory design and upgrades.
- The Infrastructure Investment and Jobs Act (IIJA), State Revolving Fund (SRF)/Water Infrastructure Finance and Innovation Act (WIFIA), Better Utilizing Investments to Leverage Development (BUILD) grant programs and other funding mechanisms provide multiyear budget support that smooths awards and backlog.
- Data centers' high, always-on loads are forcing utilities to expand transmission, build substations and reinforce distribution networks to meet rising interconnection demand.

Competitive Landscape and Acquisition Opportunity

- Infrastructure engineering is mostly executed at the local and regional levels, with a select group of national providers and platforms.
- Large infrastructure projects, such as Department of Transportation megaprojects, are likely to be awarded to national providers, but local and regional providers also participate as subconsultants on these projects, as well as prevail when it comes to smaller, recurring project work.
- **The infrastructure engineering market is projected to surpass $32 billion by 2029 and remains highly fragmented, with many specialized firms that present strong acquisition opportunities for buy-and-build platforms.**

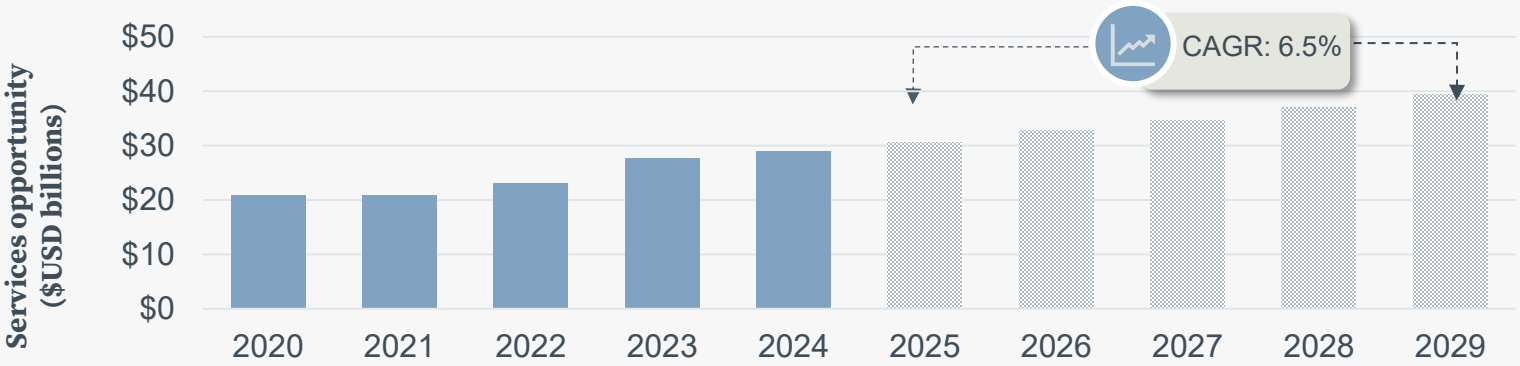
Market Size and Growth: Infrastructure Engineering

Total U.S. Infrastructure Engineering Market Demand

- The total addressable market for infrastructure engineering is expected to reach approximately $30.6 billion in 2025. By 2029, the market is expected to surpass $39 billion in annual spending, growing at a 6.5% CAGR.
- Engineering spending continues to grow as a share of total project spending fueled by regulatory driven inspection standards. In the public sector, the increased focus on public safety and greater reliance on outsourced, third-party firms presents growth opportunities throughout the coming years.

Underlying Market Growth Dynamics

U.S. Total Addressable Market Infrastructure Engineering[1]



Energy/Grid

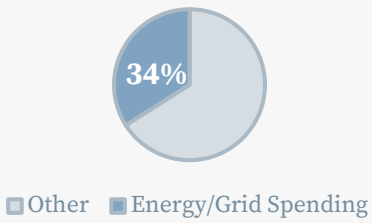
Cumulative 2025-29 Spending:

$59.9B

CAGR 2025-29:

7.8%

Percent of Infrastructure Engineering Spending[1]



Highway/Bridge

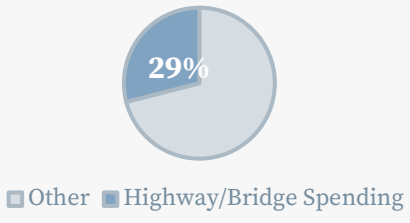
Cumulative 2025-29 Spending:

$51.4B

CAGR 2025-29:

4.8%

Percent of Infrastructure Engineering Spending[1]



Water/Wastewater

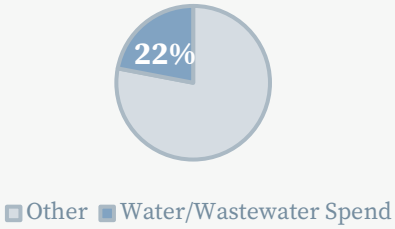
Cumulative 2025-29 Spending:

$37.6B

CAGR 2025-29:

4.9%

Percent of Infrastructure Engineering Spending[1]



Rail/Train

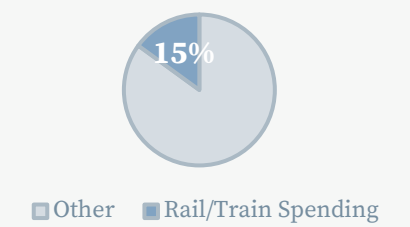
Cumulative 2025-29 Spending:

$25.5B

CAGR 2025-29:

6.9%

Percent of Infrastructure Engineering Spending[1]



1. Total addressable market consists of only relevant subsegments; excludes other nonbuilding engineering services.

Drivers of Infrastructure Engineering Growth

The infrastructure segment relies heavily on federal/state funding and regulation, which supports stable project opportunities for engineering providers. Despite ongoing investment, a significant funding gap remains, and public infrastructure will require major modernization efforts in the coming years. Infrastructure projects are critical to public safety and economic activity, and the substantial funding gap is expected to remain a key bipartisan focus for state and federal legislators.

Primary Drivers	
Aging Infrastructure	The U.S. will require significant investments over the next decade to modernize infrastructure. The ASCE estimates a **10-year funding gap of nearly $3.7 trillion**, up from nearly $2.6 trillion in 2021, providing opportunity for infrastructure engineering firms to support the imminent modernization needs.
Severe Weather Damage	**Nearly $275 billion in damages to infrastructure systems** have occurred in the last two years due to severe weather events. The total cost of damages attributed to natural disasters and severe weather continues to increase and could result in more emergency repair opportunities for engineering providers, particularly when public safety is impacted.
Regulation and Policy	Federal and state policies continue to drive replacement and renovation opportunities for infrastructure systems. **Regulations and environmental standards are often updated every few years**, requiring increased infrastructure engineering services to ensure systems comply with changes.

Water/Wastewater

- Many plants built after the 1972 Clean Water Act are now 40–50 years old, with only about 30% of capital needs currently funded, accelerating replacements and treatment plant upgrades.
- Regulatory pressure (including PFAS) is expanding testing, advanced treatment facilities and reuse projects.
- Flooding and storm surges are causing rising emergency repairs and resilience work, contributing to billions of dollars in recent weather-related damages.

Highway/Bridge

- More than 41,000 bridges are rated in poor condition, driving rehabilitation and replacement programs nationwide.
- The Federal Highway Administration estimates roughly $375 billion is needed over the next decade to lift key assets from poor to good condition.
- Severe weather is increasing pavement, drainage and slope-stability scopes as damage costs mount.
- Mandated inspections provide reoccurring project opportunities for an aging installed base and are likely to spur repair/rehabilitation projects.

Energy/Grid

- Data centers and electric vehicles are expected to add about 35 gigawatts of U.S. demand by 2030, requiring new substations and feeders.
- The U.S. is expected to add more than 28,000 miles of transmission in the next 10 years and could triple distribution transformers by 2050.
- Utilities are hardening networks against extreme weather through undergrounding, pole replacements and microgrids.

Rail/Train

- Passenger rail faces a funding gap of more than $150 billion over the next decade, pushing state-of-good-repair backlogs to the forefront.
- Pandemic-era ridership and revenue declines widened deferred maintenance, now requiring accelerated corridor and station upgrades.
- Safety, seismic and modernization requirements are increasing demand for structural modeling and system-integration engineering.

Funding and Regulation: Infrastructure Engineering

Regulation and public funding sustain strong growth

Federal programs such as IIJA, CWSRF and BUILD provide essential funding for U.S. infrastructure, often paired with state and local dollars to support modernization and development. With multiyear construction schedules and increasing emphasis on sustainability, environmental risk and public safety, these funding mechanisms will continue driving demand for engineering services in renovation and modernization projects over the next decade.

Funding Mechanisms

Infrastructure Investment and Jobs Act (IIJA)	• As of April 2025, the DOT had allocated 59% of available IIJA funding, with the remainder due before statutory deadlines. Funds must be allocated by fall 2026, likely fueling infrastructure construction over the next five to 10 years. Many IIJA programs lack sunset dates, sustaining funding tailwinds in areas such as water, wastewater and energy upgrades.
Clean Water State Revolving Fund/ Drinking Water Revolving Fund (CWSRF and DWRF)	• The CWSRF and DWSRF are EPA-capitalized, state-run programs providing low-interest loans and subsidies. CWSRF has funded more than $181 billion wastewater, stormwater and green-infrastructure projects since 1987, while the DWSRF has provided more than $57 billion since 1996 for drinking-water upgrades including treatment, distribution, storage and lead service line replacement projects.
Better Utilizing Investments to Leverage Development (BUILD)	• BUILD is a discretionary grant program for transportation infrastructure across the U.S., administered by the DOT. Previously called RAISE, the BUILD program has funded between $1 billion and $2 billion in infrastructure projects annually since 2020.
Other Funding Programs and Mechanisms	• Community Development Block Grant (CDBG) • Water Infrastructure Finance and Innovation Act (WIFIA) • Various state grant/funding programs

Regulatory Requirements and Standards

Nationwide Lead Pipe Replacement Requirement (2024)	• The EPA finalized regulation that requires cities and water systems to replace all lead service lines within 10 years, and to maintain lead levels below 10 parts per billion, a significant tightening from the previous 15 ppb limit. The new standard is poised to trigger significant infrastructure work, especially in older cities such as Houston or Philadelphia, that rely on legacy water lines, which can date back to the early 1900s.
National Bridge Inspection Standards (NBIS)	• The NBIS is a federal regulation governing the inspection, evaluation and reporting of all vehicular bridges on public roads in the U.S. Updated as needed, its 2022 revision expanded oversight beyond highways to all bridge types, encouraged the use of advanced inspection technologies and reinforced the requirement for inspections every 12 to 72 months (more often for poor-condition bridges). By broadening coverage and mandating frequent inspections the rule is a major driver of bridge repair and replacement projects as it uncovers previously unidentified needs.
Emerging Regulatory Focuses	• Cybersecurity for water systems • Energy/grid transition mandates • State and local regulatory standards

Long-term federal funding opportunities will continue to support the necessary modernization and development of infrastructure across the U.S. Sophisticated engineering services for various rail/train, highway/bridge, grid transition and water/wastewater improvements will likely see steady and strong opportunities as funding is deployed.

Federal regulations such as the NBIS and EPA's Nationwide Lead Pipe Rule are expanding oversight and compliance requirements, ensuring that aging infrastructure is systematically inspected, replaced or upgraded. The new and evolving mandates on water, energy and safety standards will keep driving infrastructure engineering demand well into the next decade.

Competitive Landscape: Infrastructure Engineering

Local/Specialized Knowledge in Demand

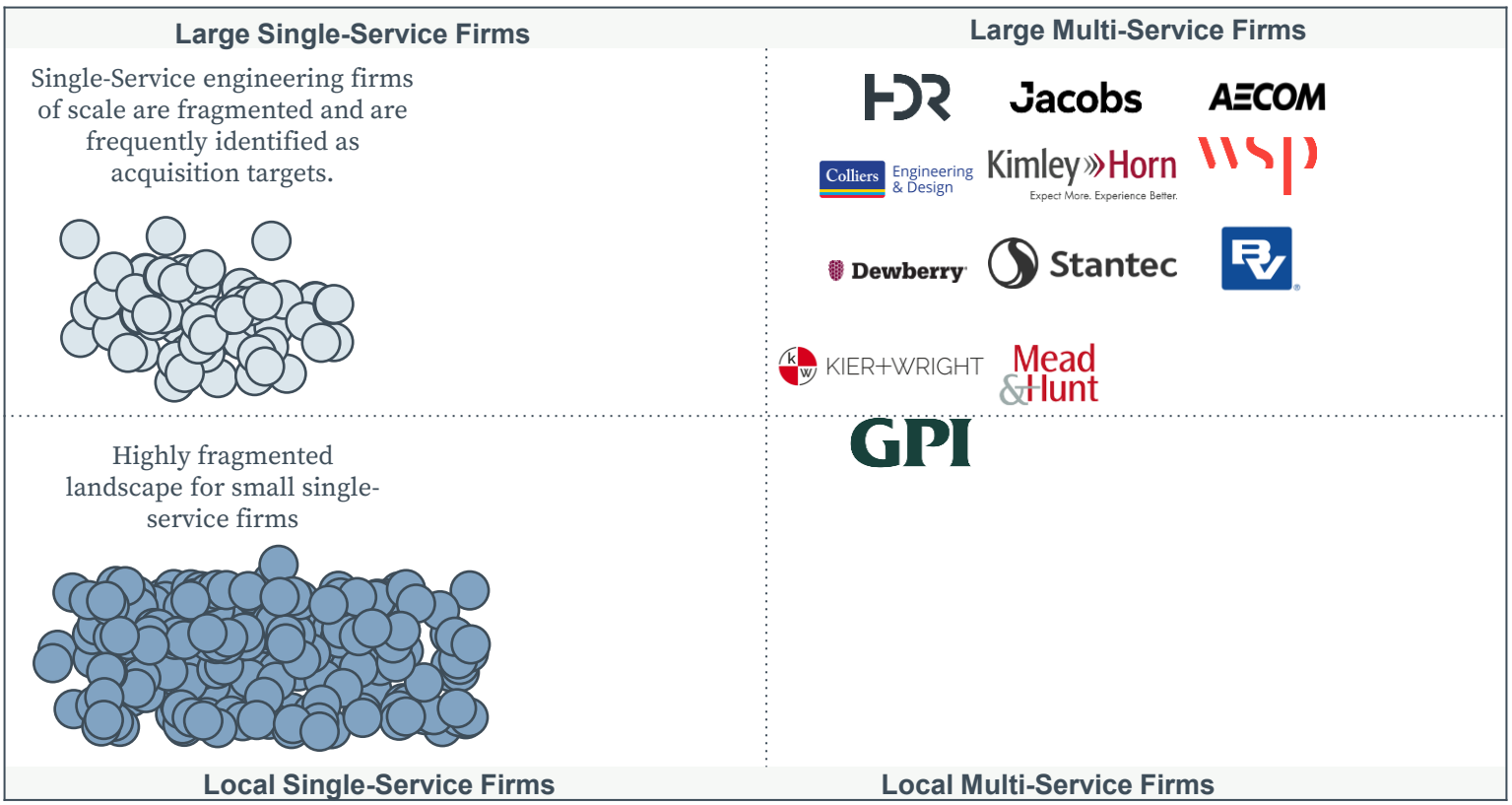
The infrastructure engineering landscape is heavily fragmented at the local and regional levels.

- Local and regional providers possess essential knowledge of local conditions and strong relationships with public/private decision makers, driving recurring small-scope awards.
- The U.S. has more than 50,000 infrastructure engineering firms. Large public projects are often primed by national providers, but delivery relies heavily on local offices and subconsultants to navigate permitting and regulations.

Opportunity for Platform Growth and Expansion

Regional and national providers can fuel growth opportunities through acquisition of single-service firms.

- Extensive expertise and experience in engineering fields is viewed as a crucial selection factor for public works projects. State agencies will often refer quality providers, making potential growth possible if quality local providers can expand resources, capacity and travel ranges.
- Successful local providers operate in a specific geography or offer a niche specialization and create trusted local relationships with stakeholders, benefitting firms in bidding processes.



Emerging Consolidation and Service Line Expansion Trends

- Private equity-backed platforms are accelerating roll-up activity across rail/train, water and utility engineering, targeting founder-led regional firms to achieve scale and multidisciplinary integration.
- Local firms with strong public-sector relationships are highly sought after for their recurring state and municipal contracts as these relationships are difficult to replicate at scale and add immediate value for acquirers.
- Engineering digitization and sustainability services including GIS-based asset management, resilience design and PFAS mitigation are emerging as high-value services that can expand project scopes and contract eligibility.

Example M&A Activity: Infrastructure Engineering

- Increased investor activity is targeting firms in transportation, water/wastewater and utility infrastructure design and program management as federal funding drives record project pipelines.
- Fragmented market dynamics present significant roll-up potential, with most operators remaining regional and founder-led despite national demand.
- Engineering capacity and workforce scale are key differentiators, as buyers seek firms with integrated planning, design and construction management capabilities.
- Private equity-backed platforms continue to pursue bolt-on acquisitions of specialized providers to grow service offerings and geographic reach while maintaining local and regional expertise.

Recent Transactions in the Infrastructure Engineering Landscape*

Firm	Acquirer	Year	Highway/ Bridge	Rail/Train	Energy/ Grid	Water/Wastewater	Services Offered
CHA	H.I.G. Capital	2024	✓		✓	✓	Full-service engineering/design and program management across utilities, transportation, water.
verdantas	Sterling Investment Partners	2024	✓		✓	✓	Environmental and infrastructure engineering across water, transportation, energy; consulting and permitting.
consor	New Mountain Capital	2024	✓	✓		✓	Transportation and water infrastructure planning, engineering design, structural assessment, program and construction management
DCCM	Court Square Capital Partners	2025	✓	✓		✓	Multidisciplinary public-sector infrastructure design, surveying, permitting and construction management
RailPros	Littlejohn & Co.	2025		✓			Rail safety management, engineering design, inspection, training, program management

* The table above depicts a small subset of example transactions within the infrastructure engineering landscape.

Case Study

PAPE-DAWSON ENGINEERS

In 2023, Palm Beach Capital partnered with Pape-Dawson Engineers, a leading Texas-based civil engineering firm specializing in land development, transportation, water resources, surveying, and environmental services. The partnership supports Pape-Dawson's expansion beyond Texas through a targeted buy-and-build strategy.

Highlighted Acquisitions:

GradyMinor (Florida, 2024): Adds municipal engineering, land planning and surveying expertise.

Maxwell-Reddick (Georgia, 2024): Establishes presence in Georgia with civil and hydrology services.

KSA Engineers (Texas, 2024): Expands municipal, aviation and architecture capabilities across the South.

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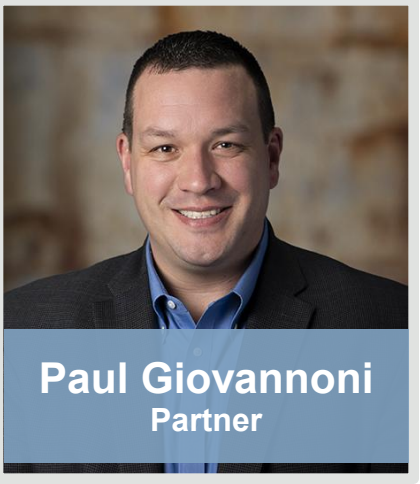

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