



A GOVERNING AND GOVERNMENT TECHNOLOGY GO-TO GUIDE



Reimagining Permitting and Licensing with AI:

A Blueprint for Cities & Counties

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Introduction

Permitting and licensing are more than administrative functions. They extend well beyond simple application submittals and approvals to include multi-department collaboration, complex regulatory requirements, technical reviews and inspections by various disciplines. Together, these activities shape how quickly housing gets built, businesses open, infrastructure moves forward and local government captures new revenue.

For cities and counties competing for investment and talent, complex permitting and licensing processes can make communities harder to build in; harder to do business with; and less attractive to developers, employers, residents and families.

- Onerous permitting requirements can jeopardize **housing affordability**¹ and cause municipalities to lose out on new investment opportunities, such as manufacturing plants that bring jobs, mixed-use development projects that can offset or lower taxes, and large residential build-outs (like subdivisions and apartments) that are less expensive than one-off single-family home construction.
- Meanwhile, **homeowners** trying to complete projects as simple as remodeling a kitchen or adding an accessory dwelling unit often encounter long wait times and unpredictable approvals. These delays discourage home repairs that may be necessary for safe living conditions, slow down improvements that increase home values, and drive up construction costs.

- **Small businesses** generate a significant share of local tax revenue and economic activity, employing nearly half of the American workforce and representing 43.5% of America's GDP.² Yet they often face the same costly delays and regulatory hurdles as larger companies.

"The biggest impacts of maintaining legacy permitting and licensing processes is slower economic development and businesses moving operations to more business-friendly cities or counties," says Simon Threlfall, group vice president of emerging markets at Oracle.

Modern platforms that leverage technologies like cloud and embedded AI can make a meaningful and measurable difference for local governments and the constituents they serve. By simplifying regulatory complexity, improving collaboration and making processes more transparent, these systems can help reposition permitting and licensing as strategic levers for service improvement and responsible economic growth.

"Modernizing these processes is about balancing safety — making sure buildings are built safely and up to code — while stimulating and fostering growth," says Threlfall.

Here's how cities and counties can modernize permitting and licensing with AI-powered tools, transforming a core regulatory function from a source of friction into a driver of community growth.

A Fragmented, Frustrating Process

In many cities and counties, permitting and licensing processes are still shaped by outdated systems and workflows that create staff inefficiencies, limit transparency and make critical data harder to access.

“One of the biggest things preventing cities and counties from moving forward is the combination of legacy products and heavily customized manual workflows,” says John Sasson, an area vice president at Oracle who leads the company’s Permitting and Licensing team. “Over time, that creates an environment where organizations get stuck — trapped in inefficient processes or locked into antiquated, overly complex vendor customizations.”

Legacy systems don’t just slow down permitting processes. They make it harder for cities and counties to handle new use cases, such as short-term rentals, cannabis businesses, solar installations and other evolving business models.

“In too many agencies, their software is dependent on technical expertise, such as coding, programming and scripting, so the technology can’t keep pace with change,” adds Eric Gsellmeier, the business lead for Oracle Permitting and Licensing.

For decades, these processes have operated essentially as black boxes. Residents and businesses often don’t know their application status or how long approvals will take. That lack of visibility can be frustrating, particularly as people have become accustomed to the seamless digital experiences offered by retailers, airlines and other service providers. Whether tracking a package, checking a bank account or scheduling an appointment, customers now expect easy-to-use online services, real-time updates and clear communication. Increasingly, they bring those same expectations to their interactions with local government, seeking greater transparency, convenience and insight into the status of their requests and applications.

“People want that same level of service from government,” Gsellmeier says. “They want to know exactly what is required, how much it’ll cost, how long approvals will take — and they want continuous updates along the way. The onus is on government to fulfill that level of service.”

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The Business Case for Modernizing with AI

Modernizing permitting directly affects some of the outcomes that matter most to city and county officials: housing supply and affordability, new business tax revenue, economic growth and public confidence in local government.

Faster, more affordable new development. Developers factor processing time, transparency and ease of approvals into their location and investment decisions. Permitting and licensing delays also increase carrying costs and construction overhead, which developers often pass on to renters, homeowners or customers in the form of higher costs.

“Businesses, developers and investors are all looking at the ease of navigating regulations for their projects, whether it’s a factory or a mixed-use development,” Gsellmeier says.

Better processes also reduce red tape and help developers build safe, suitable housing in less time. Streamlined zoning reviews, plan checks, inspections and interdepartmental approvals can increase local housing stock and improve affordability.

Enhanced productivity with AI. Modern, AI-enabled permitting and licensing systems improve productivity for budget- and resource-strapped government agencies, allowing staff to shift time from manual, rote tasks to more impactful work and higher-value services. For example, AI can automatically review permit applications for completeness, flag missing documentation and route applications to the appropriate departments, reducing administrative burdens and minimizing delays. With greater visibility into operational data, agencies can also reduce risks, improve compliance and ensure they gain agility without undermining building or construction safety.

“AI is going to shrink the timeline for regulatory submissions, reviews and approvals,” Threlfall says. “That will allow agencies to enable more development for communities while using their existing workforce.”

Smarter planning. Modernization equips leaders with better data to make forward-looking decisions. By analyzing permitting, licensing and inspection data, AI-powered tools can help agencies identify development trends, forecast future demand and uncover process bottlenecks. For example, if permit activity shows a surge in multifamily housing projects in a particular area, planners can use those insights to anticipate future needs for infrastructure, transportation and public services. Agencies can also use operational data to better allocate staff resources, shorten approval times and continually refine permitting and licensing workflows.

In turn, more transparent, responsive service strengthens public trust and reduces friction for the people and organizations trying to move projects forward.

Disaster recovery. Sunsetting slow, manual permitting processes can help communities rebuild more quickly after natural disasters. Digitizing these workflows enables staff to manage increased application volumes while minimizing delays for displaced residents and businesses who want to get back into their homes or resume operations. Following a flood, wildfire or hurricane, AI can help agencies rapidly triage permit applications, prioritize critical repairs and identify projects that meet predefined rebuilding criteria, enabling displaced residents and businesses to return more quickly.



Modern Permitting: Core Capabilities Cities and Counties Need

To enhance permitting and licensing, cities and counties can't take a piecemeal, siloed approach to modernization. They need a connected, intelligent foundation — powered by AI — that improves service delivery, gives stakeholders timely information and supports economic development.

Unified cloud platform

A unified cloud platform makes data easily accessible to both customers and staff and provides a comprehensive solution for a local government's regulatory needs. It incorporates planning and zoning, code enforcement, permits and inspections, business licensing, and registration tools that align with existing business rules and governance — reducing manual processing and improving compliance.

Threlfall says agencies need one platform that doesn't require manual workarounds, so they can effectively connect and act on data across the permitting and licensing lifecycle. When data resides in separate systems, it can be difficult to identify bottlenecks, track application progress or understand broader development trends. A unified platform gives staff and leaders a complete view of each transaction while also revealing trends across permits, inspections and licensing activity. This helps agencies identify delays, forecast demand and make more informed decisions about staffing, development and service delivery.

"Having a single, cloud-integrated solution allows automation and ensures workflows are moving quickly from step to step," Threlfall says. "Being in one system allows you to figure out exactly where the transaction is in its lifecycle."

Embedded AI

Agencies benefit most from modern permitting and licensing systems where AI is not bolted on as a separate feature, but is embedded directly into the system of record. Modern permitting systems embedded with AI will understand context, coordinate decisions and drive outcomes. AI changes what's possible and how systems scale the outcome of work.

The benefit of embedded AI agents, agent teams and workflow agents is significant. AI ensures applications are submitted accurately, staff assignments are automated, plans are checked against codes, and inspections are routed and summarized. With each step of the process, AI supports human in-the-loop oversight. The outcome is faster turnaround, which saves time and improves service. AI can connect data, infrastructure and applications so agencies can automate more of the end-to-end permitting and licensing lifecycle.

AI will not solve permitting challenges on its own. Higher-risk approvals still require human expertise, and agencies need clear governance, clean data and well-defined review thresholds before they expand automation. The strongest approach is to use AI where it reduces routine work and improves consistency, while keeping people responsible for judgment, accountability and exceptions.

Modern permitting systems with embedded AI will foster operational intelligence because AI can understand context, reason across workflows, determine next best steps and increasingly help run an organization's operations.



With AI, permitting and licensing platforms move from systems of record to “systems of outcome” — a shift that’s crucial for governments to boost their financial resilience and service capacity.

“Automating these processes with AI saves time, improves services and builds trust,” Sasson says. With AI, he adds, permitting and licensing platforms move from systems of record to “systems of outcome” — a shift that’s crucial for governments to boost their financial resilience and service capacity.

Here’s what this looks like in practice:

➤ **Embedded AI assistants for every role.** Planners, plan reviewers, permit technicians, inspectors and code officers can benefit from AI agents that handle routine tasks for them.

For example, employees can get automated case summaries, inspection results and status updates. Reporting and analytics capabilities help managers address bottlenecks, workloads, revenue and performance in real time.

➤ **AI-enabled plan review and application completeness checks.** City and county staff spend too much time reviewing applications for completeness and going back and forth with applicants to correct errors. AI eliminates most of that administrative burden by checking proposed plans against local code and facilitating a readiness check for application completeness before a user ever submits their documentation.

For example, automated plan reviews make it easier for cities and counties to integrate solar and renewable energy infrastructure. Pre-submittal code checks identify

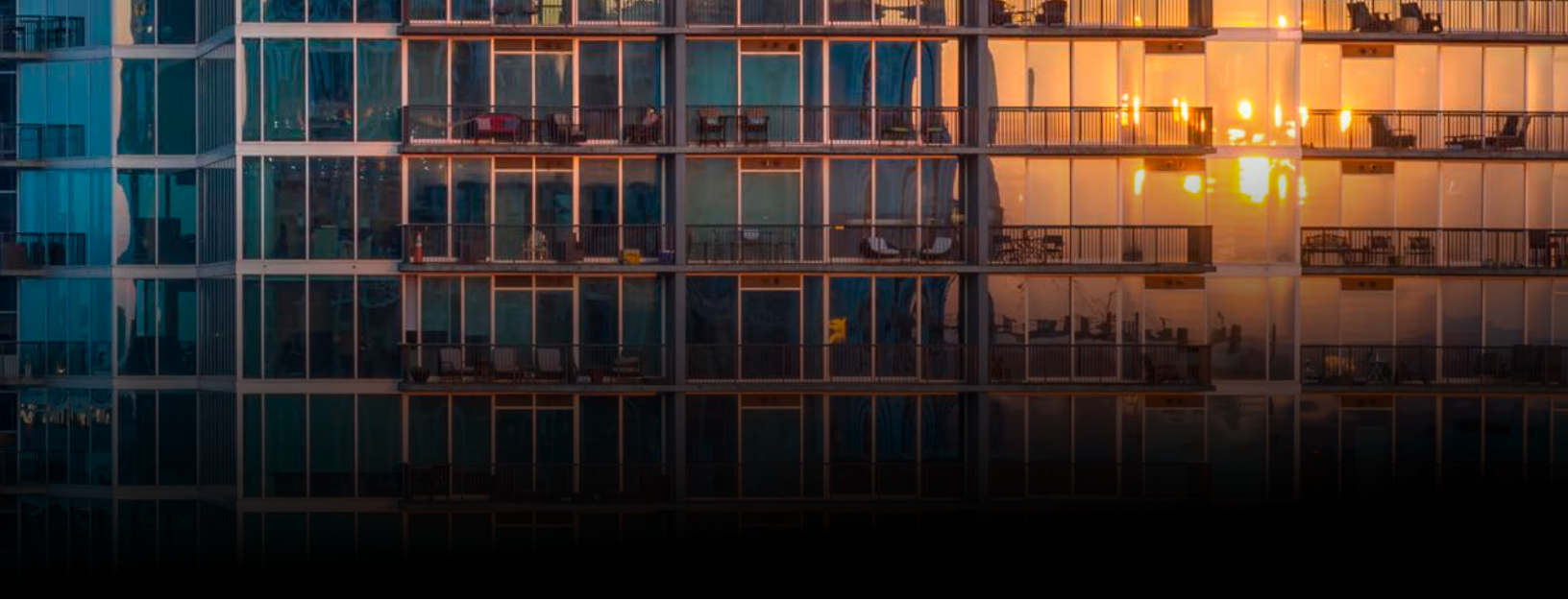
application errors early, accelerating the permitting process to help communities achieve their clean energy goals. Better permitting can also help cities build out electric vehicle charging infrastructure by coordinating reviews across utilities, planning, fire, engineering and transportation departments to streamline approvals for new EV charging stations.

“AI makes sure your customers get it right the first time, meaning your staff only receives quality submissions,” Gsellmeier says.

➤ **Automated approval workflows.** An AI-powered platform streamlines approvals while always prioritizing human judgment. An AI agent can fully automate the process for simple permit types and provide process feedback, leaving staff to validate its recommendations and handle more complex transactions that require their institutional knowledge.

Agents can automatically assign a case to an inspector, seamlessly moving the permitting process through subsequent steps with human intervention only where it’s needed. Generative AI — which creates new content based on inputs such as structured and unstructured data, notes, emails and images — can write communications, comments and results.

These capabilities reposition employees from content authors to reviewers. They also save staff time, reduce avoidable rework and speed local development.



Guided self-service

Permitting and licensing departments often spend significant time responding to routine questions.

Chatbots that enable self-service are valuable for reducing staff time on these tasks. A chatbot can pull from local planning code and internal policies to answer user questions in a fraction of the time it would take a staff member.

“You can engage in natural language with the chatbot and ask, ‘Please tell me what the zoning requirements are for a cannabis store that I want to open at this address, and then tell me what the permit requirements are,’” Threlfall says.

Self-service tools ultimately help permitting and licensing departments do more with the resources they have, while making their processes more transparent and giving residents, business owners and developers timely information.

Flexible automation

A modern permitting and licensing platform enables flexible automation, from human-in-the-loop review to full automation for lower-risk, routine transactions.

Licensing automation, for example, could involve automating everything from origination and amendments to renewals, and only incorporating human reviewers when there are exceptions or missing information that requires staff review.

Fully automated processes could include calculating fees or estimates, so applicants have a better idea of their costs, or incorporating compliance requirements into the application form, so residents, business owners and developers are informed early about what documentation they’ll need and

Self-service tools help permitting and licensing departments do more with the resources they have.

when. Agencies can also fully automate status updates and communications based on specific steps in the permitting and licensing lifecycle.

Comprehensive security

A modern permitting and licensing system uses a single security model, which the embedded AI references every time it calls up and deploys data.

The system runs on a secure database, so data doesn’t have to be moved across different cloud environments, since this increases the risk of leakage and can create challenges with tracking and auditing.

The platform should have embedded role-based permissions, ensuring employees across departments involved in permitting and licensing have access to the information they need at all times.

These are just a few more reasons why agencies may consider a single-vendor stack of technology when modernizing. Many legacy vendors have built their permitting and licensing solutions on premises and rely on third-party cloud providers to scale their functionality. A single-vendor stack of technology, however, offers a unified foundation that strengthens security governance, improves performance and mitigates third-party cloud infrastructure costs.



A Roadmap for Modern Permitting

As cities and counties modernize permitting and licensing, these priorities can help them move forward in a practical, manageable way:

Identify existing bottlenecks

Start by understanding current pain points across the permitting and licensing lifecycle.

These could include long application review and approval times, high application incompletion rates, inspection backlogs, or high call center volumes from residents and businesses seeking status updates. Agencies can use these issues to frame their modernization approach and define success metrics.

Modernize incrementally

Prioritize high-volume, lower-risk processes and use cases for modernization.

For example, agencies can start by modernizing the process for routine permit types or business licenses, such as water heater replacements, business license renewals or temporary event licenses.

They can execute short four- to six-week pilots and then use successive sprints to gradually scale to other processes. This approach will help them quickly learn, adapt and improve.

Develop cross-functional governance

Engage IT, planning, inspections, code enforcement, finance, HR, legal, economic development, and the mayor's or county executive's office early in the modernization process. This will build buy-in and ensure AI-driven workflows improve existing processes rather than simply digitizing old ones.

Include the right people

Agencies should consider the needs of developers, contractors and businesses as part of their system and process redesign.

Gather input from these groups early on and review operational data and feedback about their permitting and licensing experience. This approach will help agencies ensure the changes they implement deliver immediate benefits for these stakeholders.

Clean and integrate data

AI models rely on accurate, high-quality data to deliver the best results. Data must be clean, shareable and integrated across departmental lines. Connecting permitting and licensing data with planning, finance, code enforcement and other back-office systems creates a more complete picture of agency operations, helping leaders make better decisions, streamline workflows and reduce redundant work. It also enables staff to track projects more effectively as they move through the regulatory process, from initial application through inspections, approvals and ongoing compliance.

“At Oracle, we configure and deliver transaction types over a sprint, converting data not just at the end when everything’s locked down, but periodically throughout the lifecycle of an implementation,” Sasson says. “That way, you test, massage and transform data throughout the lifecycle of the implementation.”

This iterative approach helps agencies identify data quality issues early, establish consistent data standards and ensure information flows seamlessly across systems before the platform goes live.

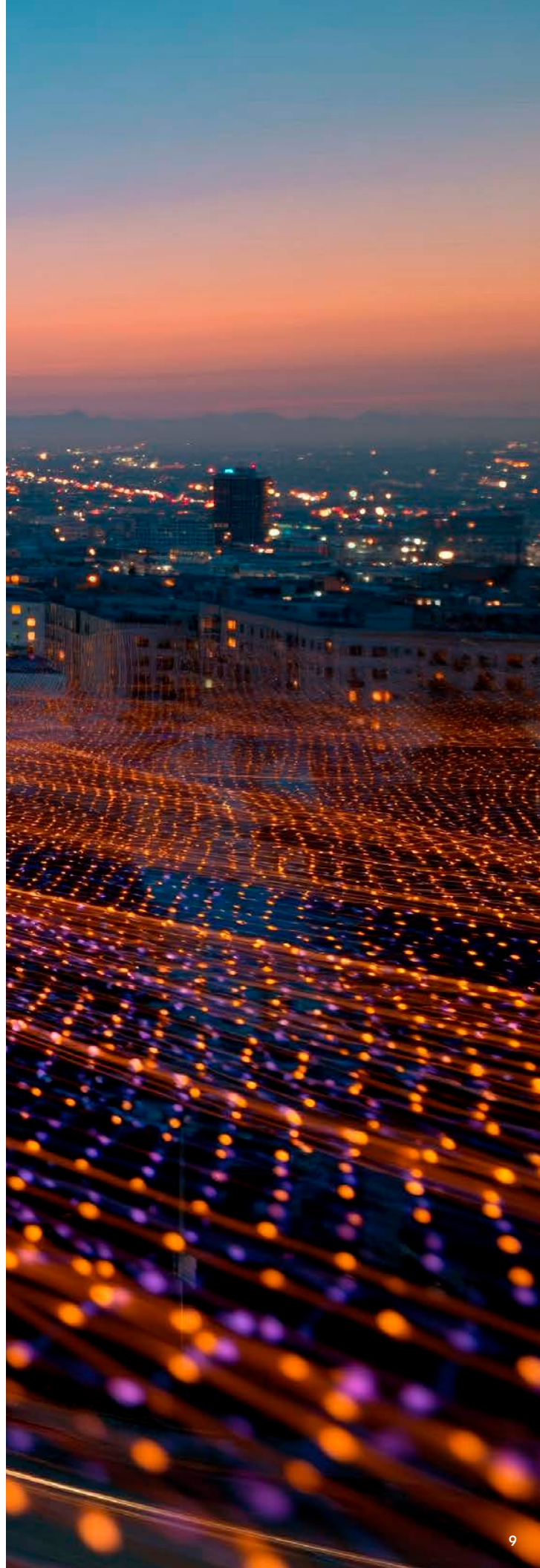
Identify and track KPIs

Measure outcomes, such as approval times, inspection turnaround and staff time saved, to document impact and make the case for continued investment in modernization.

Be a good storyteller

Communicate wins publicly, early and often. Sharing success stories can bolster your community’s reputation as a collaborative partner for residents undertaking renovations and as a great destination for businesses and developers. Highlight progress on reducing the time it takes to obtain a permit, and share testimonials from small business owners and homeowners that humanize the impact of the changes you’ve implemented.

Sharing success stories bolsters your community’s reputation as a good partner for residents and businesses.





CASE STUDY

Miami: Reducing Permitting and Licensing Bottlenecks

For the city of Miami, modernizing permitting and licensing is the best way to improve service delivery and minimize the hassles residents and businesses currently experience.

Miami's booming population puts additional demand on the city's housing and business infrastructure. But fragmented systems, custom-developed solutions and outdated permitting processes make it harder for developers to get started. Long delays and unnecessary complexity are far too common.

To address these issues, Miami plans to consolidate eight existing permitting and licensing tools and move to a single, integrated suite of AI-powered cloud applications.

"Accelerating permitting with the latest technologies can save residents time, money and frustration," said Miami Mayor Eileen Higgins.³

This shift will allow the city to automate its permitting workflows, minimize technology debt, and reduce approval and cycle times. It will also increase Miami's agility as it tackles evolving regulatory and economic development needs — making the city a more welcoming place to do business and a more attractive place for future investment.

Miami's booming population puts additional demand on the city's housing and business infrastructure.



Permitting and Licensing as a Competitive Advantage

Permitting and licensing shape how residents, businesses and developers experience local government. They influence whether a new business opens quickly, whether housing gets built, whether communities recover after disasters and whether investors see a city or county as a place where projects can move.

For too long, many legacy systems have turned those functions into barriers — slowing projects, frustrating applicants and consuming staff time with manual processes that add little value.

Modern permitting and licensing platforms give cities and counties an opportunity to change that dynamic. AI-enabled automation, unified cloud platforms and guided self-service tools can reduce delays, improve transparency and help agencies operate with greater speed and consistency.

The larger shift is not simply technical. It is a move toward a more responsive model of local government — one

that adapts to changing regulations, rising demand and evolving community needs without sacrificing safety, accountability or trust.

Communities that modernize successfully will not just process permits faster. They will create a stronger environment for housing development, entrepreneurship, infrastructure investment and long-term economic growth.

“That entire development lifecycle — through digital workflows, real-time visibility, automating approvals and streamlining the coordination process across different divisions — is going to allow cities and counties to be much more competitive in attracting businesses,” Sasson says. “It allows them to reduce those turnaround times, improve consistency and create a more business-friendly environment that supports growth, investment, and attracts and retains talent.”

1. <https://bidenwhitehouse.archives.gov/cea/written-materials/2024/08/13/reforming-permitting-requirements-to-lower-the-cost-of-building-new-housing-and-increase-housing-affordability>
2. <https://www.uschamber.com/small-business/small-business-data-center>
3. <https://www.oracle.com/news/announcement/city-of-miami-modernizes-regulatory-services-and-accelerates-ai-driven-innovation-with-oracle-2026-03-12/>

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