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A HIGH BURDEN

THE GROWING COST OF PERMITTING
COMPLIANCE IN ARIZONA'S HOME
IMPROVEMENT MARKET

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ABOUT THE AUTHORS



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ABOUT COMMON SENSE INSTITUTE

Common Sense Institute is a non-partisan research organization dedicated to the protection and promotion of Arizona's economy. CSI is at the forefront of important discussions concerning the future of free enterprise and aims to have an impact on the issues that matter most to Arizonans. CSI's mission is to examine the fiscal impacts of policies, initiatives, and proposed laws so that Arizonans are educated and informed on issues impacting their lives. CSI employs rigorous research techniques and dynamic modeling to evaluate the potential impact of these measures on the Arizona economy and individual opportunity.

TEAMS & FELLOWS STATEMENT

CSI is committed to independent, in-depth research that examines the impacts of policies, initiatives, and proposed laws so that Arizonans are educated and informed on issues impacting their lives. CSI's commitment to institutional independence is rooted in the individual independence of our researchers, economists, and fellows. At the core of CSI's mission is a belief in the power of the free enterprise system. Our work explores ideas that protect and promote jobs and the economy, and the CSI team and fellows take part in this pursuit with academic freedom. Our team's work is informed by data-driven research and evidence. The views and opinions of fellows do not reflect the institutional views of CSI. CSI operates independently of any political party and does not take positions.

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INTRODUCTION

Residential construction, the professional trades, and building improvements are essential components not just of Arizona's housing market, but also its broader economic performance.ⁱ Whether replacing a roof, installing a new HVAC system, upgrading electrical panels, or adding rooftop solar, homeowners and contractors can't just build – they must interact with local regulators. This permitting system exists to ensure compliance with building codes and maintain construction quality standards. Especially given safety and reliability concerns, this system has value, but the structure, efficiency, and cost of permitting processes can also influence project timelines, costs of homeownership, contractor productivity, and the affordability of housing.ⁱⁱ

Unlike most states, Arizona's building regulatory environment is decentralized. **There is no statewide standardization of building codes or permit processing requirements. Instead, the state has 106 building-regulating and permit-issuing jurisdictions, each maintaining its own building codes, permitting procedures, staffing models, fee schedules, and approval timelines.**ⁱⁱⁱ Most of these jurisdictions (69) are tiny – covering fewer than 9,000 people on average, and collectively regulating just 8.1% of the *entire* Arizona population. As a result, homeowners performing identical residential improvements may face materially different regulatory requirements, fees, and approval times depending solely on geographic location – and the process can be especially opaque in many rural jurisdictions.

This decentralization produces variation in what types of work require permits in the first place. CSI estimates that slightly more than half of Arizona residents must obtain permits for “routine” (e.g., without major structural modification) residential projects such as HVAC replacements, roofing, or water heater upgrades, while the rest can perform these activities without a permit. These inconsistencies raise important questions about regulatory and administrative efficiency and whether permitting requirements are calibrated to risk in a realistic manner across jurisdictions.

To bring transparency to the consequences of this system, Common Sense Institute (CSI) reviewed approximately 2.8 million building permit record summaries across 29 jurisdictions, representing nearly three-quarters of Arizona's population.^{iv} The scope of this review focused on typical residential improvement permits (excluding new construction and commercial permits) for common projects such as roofing, wall/fence construction, window and door replacement, electrical upgrades, rooftop solar and battery systems, HVAC systems, water heaters, and plumbing and gas line modification. These projects represent common, recurring investments in Arizona's housing stock and are particularly relevant to middle-income homeowners.

The data reveals substantial variation in permit approval times, costs, and total project durations across jurisdictions. On average, obtaining a permit adds approximately 23 days to residential project completion times in Arizona. Approval timelines alone vary widely: in the fastest quartile of jurisdictions, permits were approved in roughly five calendar days, on average, while in the slowest quartile approval took more than 16 days. For identical or substantially similar projects, homeowners experience materially different timelines.^v

On average, obtaining a permit adds approximately 23 days to residential project completion times in Arizona.

Importantly, permitting timelines correlate strongly with total project completion times. Across 21 jurisdictions and all available permit types for 2023, each additional day of permitting time was associated with approximately four additional days of project time at the jurisdictional level. A 10% reduction in approval time was associated with a 6% reduction in overall project time, holding other factors about the job constant. These findings suggest that administrative efficiency in permitting translates into tangible improvements in construction productivity and homeowner experience.

Beyond raw totals, the variation in performance across the state is striking. Among roughly 100,000 reviewed permits completed in the past three years, approximately half were issued within four days or less, while 10% required more than a month for approval, and the slowest 1% were not approved until after 134 days. Typical permitted residential improvement projects took approximately 73 days to complete, but this ranged from less than 40 days in the fastest jurisdictions to more than 107 days in the slowest. These differences reflect the consequences of Arizona's decentralized regulatory system.

Jurisdiction size appears to matter. Larger cities and towns with populations of more than 50,000 approve permits in approximately 12 days on average, compared to more than 15 days in smaller jurisdictions. While three days may appear modest, the documented relationship between approval time and total project duration implies that even small administrative delays can compound into meaningful extensions of overall project timelines.

Modernization examples also demonstrate the benefits of reform. In 2011, Phoenix implemented a pilot self-certification program for qualifying permit applications. Since then, at least seven cities in Maricopa and Pima counties have adopted similar programs. For projects likely eligible for self-certification (typically larger commercial work), average project durations declined by approximately 40 days following adoption—about a 13% reduction in expected total project time. Contemporary reporting suggests that affected approval times alone were reduced by four to six months, in many cases to as little as 24 hours.

The jurisdictional differences extend beyond timing. Permit fees vary meaningfully across the state. In half of the jurisdictions studied, typical residential improvement permits cost \$300 or less. However, in the most expensive quartile of cities, towns, and counties, homeowners paid more than \$600 per permit during the 2022–24 period. For smaller-scale improvement projects, permit fees alone can represent a significant share of total project cost, particularly when combined with extended approval delays.

Taken together, these findings highlight a central theme: Arizona's decentralized permitting framework produces substantial variation in regulatory burdens, approval times, fees, and overall homeowner experiences. In the absence of statewide standards or consistent administrative benchmarks, outcomes differ meaningfully across jurisdictions, even for routine, low-risk residential projects. Given the continuing challenge affordability presents in Arizona, understanding how local building regulations affect the cost of most people's largest investment and largest monthly expense – housing – is critical.

This paper examines the structure, variation, and measurable economic implications of Arizona's residential permitting systems. By analyzing large-scale permit-level data and comparing jurisdictional practices, the study evaluates whether differences in approval efficiency translate into measurable differences in project duration. It further explores the implications of administrative reform efforts, such as self-certification programs, for improving construction productivity and reducing delays. Ultimately, the goal is to provide policymakers, local governments, contractors, and homeowners with an empirical assessment of how permitting

Arizona's decentralized permitting framework produces substantial variation in regulatory burdens, approval times, fees, and overall homeowner experiences. In the absence of statewide standards or consistent administrative benchmarks, outcomes differ meaningfully across jurisdictions, even for routine, low-risk residential projects.

KEY FINDINGS

- Arizona's permitting system is highly fragmented: 106 local jurisdictions set their own codes, processes, fees, and timelines, with no statewide standard. Most of these jurisdictions are very small, which adds to inconsistency and administrative complexity.
- Even routine home improvement work is not regulated consistently. CSI estimates that roughly half of Arizonans need permits for common projects such as HVAC, roof, or water-heater replacement, while many others can do similar work without a permit depending on location.
- For permitted residential improvement projects, delays are substantial and uneven. CSI found that obtaining a permit adds about 23 days to project completion time on average; the fastest quartile of jurisdictions approves permits in about 5 days, while the slowest takes more than 16 days.
- The spread in outcomes is wide. Among roughly 100,000 recently completed permits, about half were issued in four days or less, but 10% took more than a month and the slowest 1% took more than 134 days. Total project times ranged from under 40 days in the fastest jurisdictions to more than 107 days in the slowest.
- Permit delays materially slow construction. Across 21 jurisdictions in 2023, each additional day of permitting time was associated with about four additional days of total project time. Faster approval appears to translate into faster project completion.
- Reform appears to help. In jurisdictions using SolarAPP+, average solar permit approval times were about 6 days versus 17 days elsewhere, and total project times were about 35 days versus 65 days. CSI also estimates that self-certification reduced affected project times by about 40 days, or 13%.
- CSI found no evidence that streamlining reforms reduce local planning-office budgets or staffing. In most jurisdictions reviewed, both budgets and employment rose after reforms such as self-certification or app-based permitting.

BACKGROUND

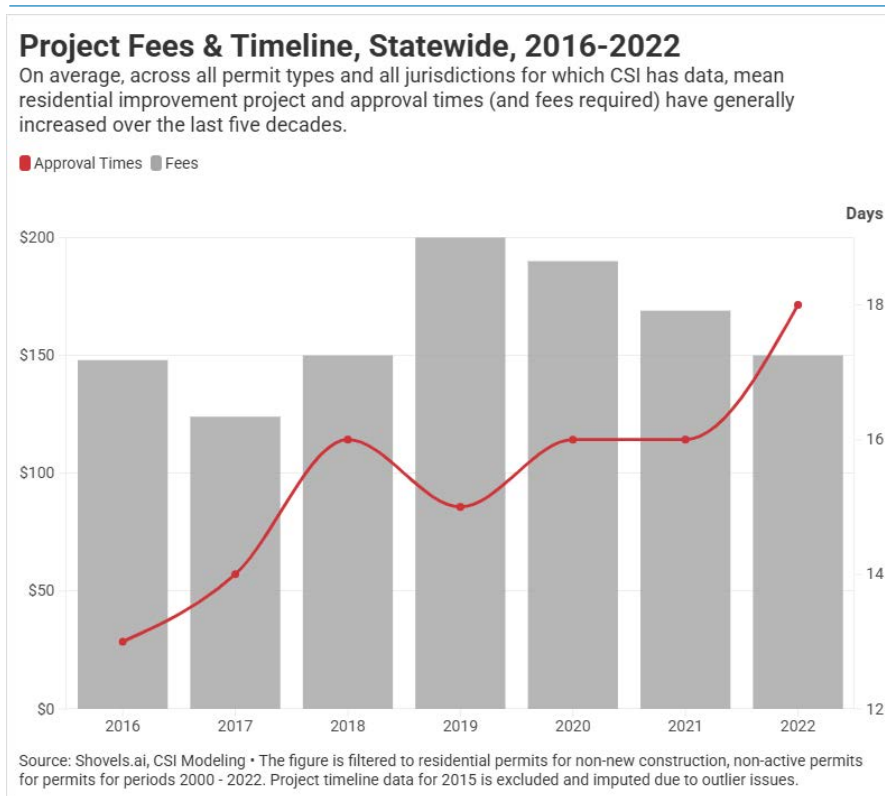
It is more difficult than ever to afford a home, and once in, it is also often more expensive than ever to maintain it. Homebuilding has slowed^{vi}, there is a shortage of skilled tradesmen^{vii}, and the cost of building new or improving existing housing remains near all-time highs^{viii}. Affordability is tied to many factors, but one contributor is clear, significant, and under the immediate control of state and local policymakers: local building regulations. The public interacts with them mostly via building permits.

While permitting systems ostensibly exist to ensure compliance with building codes and protect public safety, they also represent an administrative step that directly influences when projects can begin and how quickly they can be completed. Over time, as regulated scopes grow to encompass aesthetic and environmental concerns and processes lengthen or become more costly, they can shape contractor scheduling, what homeowners can do and at what cost, when workers get paid, and the pace at which improvements to housing stock occur.

In other words, local permitting timelines for residential construction and home improvement projects significantly impact the construction pipeline and regulatory landscape in Arizona.

Complicating things further, there are 106 separate permit-issuing jurisdictions in the state, each with their own rules and processes. And because of dense and overlapping regional boundaries, many contractors have to deal with dozens of permit offices to operate in their local service areas.

FIGURE 1.



This decentralized structure means that identical residential projects—such as replacing a roof, installing a water heater, or upgrading an HVAC system—often face very different permitting requirements depending solely on geographic location. Even whether an activity requires a permit in the first place depends on where a person resides.

Over time, the number of days required to obtain approvals—and the costs associated with those approvals—have increased, and today there are wide variations across jurisdictions.

The same permit for a comparable scope of work can be significantly more expensive, and take significantly longer to receive, based purely on where one happens to apply.

Each of these differences have practical implications for contractors and homeowners alike. Residential improvement projects often involve relatively standardized work that can be completed quickly once construction begins. However, the time required to obtain approval may exceed the time needed to perform the actual work, and variations in technical requirements can create uncertainty for contractors depending on the home's address. As approval timelines lengthen, projects may be delayed before construction even starts, potentially increasing financing costs, disrupting contractor scheduling, and

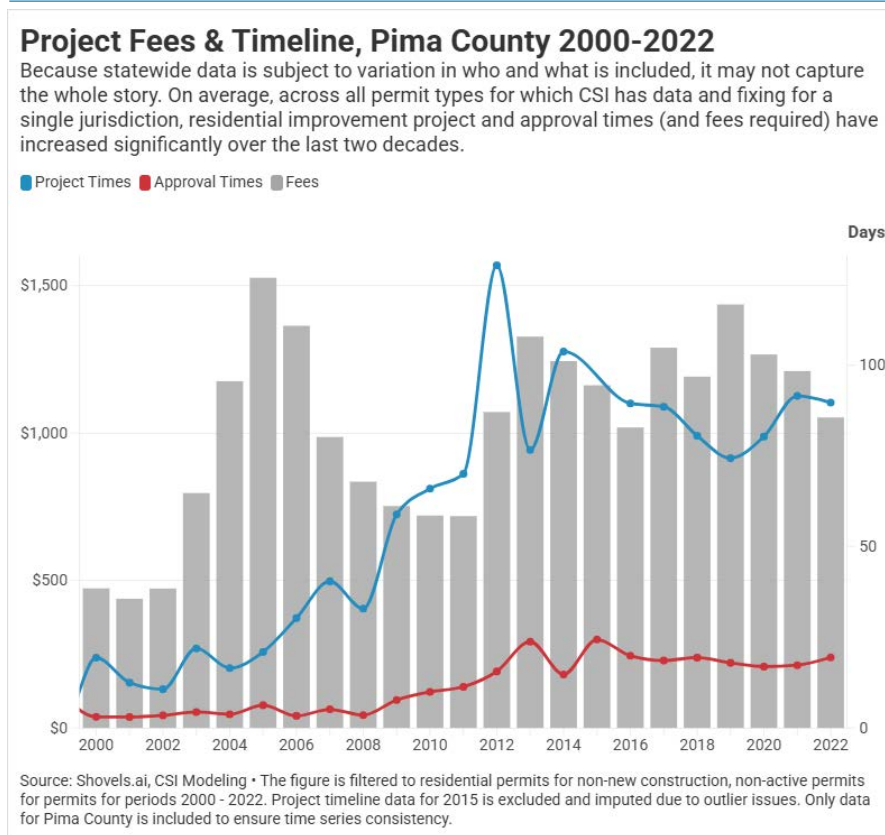
extending the time homeowners must wait for necessary repairs or upgrades. Over time, administrative delays can compound across thousands of projects statewide, affecting overall construction production, productivity and the efficiency of the residential improvement market.

“Code cycles can vary a lot as well. For example, one jurisdiction [we work in] is using 2011-era electrical codes; my most current is using 2023.”

— Arizona home improvement contractor

This vast difference in permitting requirements also raises another question: is the red tape in slower jurisdictions necessary? Some jurisdictions require permits for routine residential improvements such as HVAC replacements or roofing work, for example, while others allow similar work to proceed without a permit. These differences suggest that

FIGURE 2.



local governments have made different judgments about the risks associated with common construction activities and the appropriate level of regulatory oversight.

The answer to that question has implications not only for individual projects, but for the state's economy in general. Residential construction and home improvement activity represent important components of Arizona's broader economic activity, supporting contractors, electricians, plumbers, roofers, and other skilled trades. When approval timelines lengthen, the delay can also postpone employment, material purchases, and the economic activity associated with construction work. Conversely, jurisdictions that streamline their permitting processes may enable projects to move forward more quickly, supporting local economic activity while maintaining building safety standards and promoting housing affordability.

Housing affordability enters this discussion because new construction and housing improvements both require interaction with local permitting systems. When permitting timelines or fees increase, they may contribute to higher project costs and slower delivery of housing supply. Although housing affordability is influenced by many factors—including land availability, financing conditions, and construction costs—administrative processes such as permitting represent one area where policy choices can influence timelines and costs. Understanding how permitting timelines vary across jurisdictions is therefore an important step in evaluating how regulatory practices interact with housing supply and improvement activity statewide.

This study examines the structure and variation of residential permitting processes across Arizona jurisdictions. By analyzing permit-level data on approval times, fees, and project completion timelines, the paper evaluates how administrative processes differ across jurisdictions and how those differences translate into measurable differences in project duration. In doing so, the analysis aims to provide policymakers, local governments, contractors, and homeowners with a clearer understanding of how permitting systems operate in practice and where opportunities may exist to improve administrative efficiency while maintaining safety and code compliance.

What is Permitting and Has Arizona's Process of Building Kept Pace?

The history of permitting has its roots in its cousin—zoning and land use regulation. Zoning defines the allowed use of land (e.g., residential, commercial, industrial), including:

- Goals (neighborhood character and incompatible uses),
- Rules (setbacks, height, building size, and parking requirements), and
- Process (review by zoning administrators and/or special use permits).

Zoning and land use regulation activity are rooted in early territorial and local government authority when cities and towns in the state were given authority to regulate land use and construction for public safety. For instance, Phoenix began formulating a specific General Plan and zone ordinance in 1928 and implemented its first zoning ordinance in 1930 after the state legislature passed Arizona's first Zoning Enabling Act in 1925.^{ix} At the time, zoning was considered "the cornerstone for effective city planning."^x The City Planning Commission also began investigating land use regulation through

the use of police power.^{xi} Spearheading the permitting and zoning movement was a retired cement products manufacturer, William G. Hartranft, chairman of the Phoenix Planning Commission. At the time, the thinking behind zoning and land use regulation was that “[Z]oning laws were necessary if Phoenix were to compete with the west coast cities.” ... At the end of 1926 there were 47 cities in California that had enacted zoning ordinances and by comparison, there is only one town zoned in Arizona—Chandler. Phoenix was

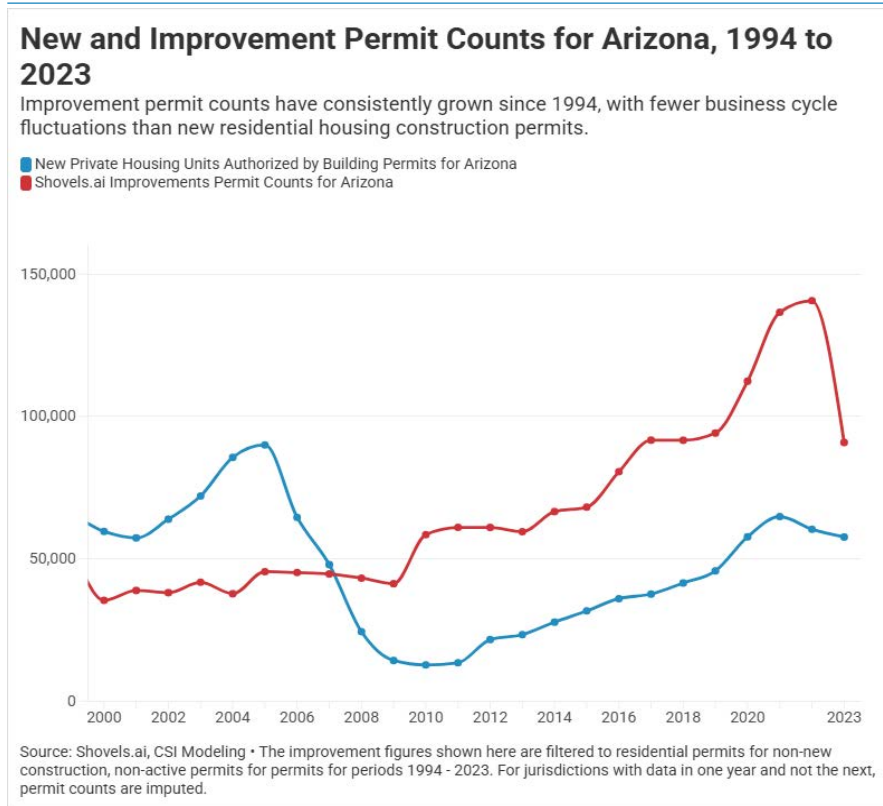
competing with California for the same class of citizens as settlers, and must zone in order to get them. Unlike Arizona, California was quick to recognize the value of zoning as a drawing card for east coast investors and settlers who desired beautiful surrounding and orderly growth to protect their investments. California is many laps ahead. ... Until we zone, we are heavily handicapped.”^{xii}

Closely connected to zoning and land use is permitting—the topic of this paper. Permitting typically follows zoning in the sequence of events since zoning is required first to confirm the project is allowed. Permitting ensures construction is structurally sound and complies with building codes. Permitting includes:

- Conformance with technical requirements
- Approval process, which is:
 - (a) Plan review/permitting; and
 - Inspection.

As with zoning, permitting in Arizona emerged gradually from local governments’ police-power authority to protect health and safety. Cities such as Phoenix adopted building ordinances and inspection practices before Arizona developed explicit modern planning authority. Over time, the system expanded to include zoning, subdivision review, statewide contractor licensing (1931), and explicit municipal planning authority (1973).^{xiii}

FIGURE 3.



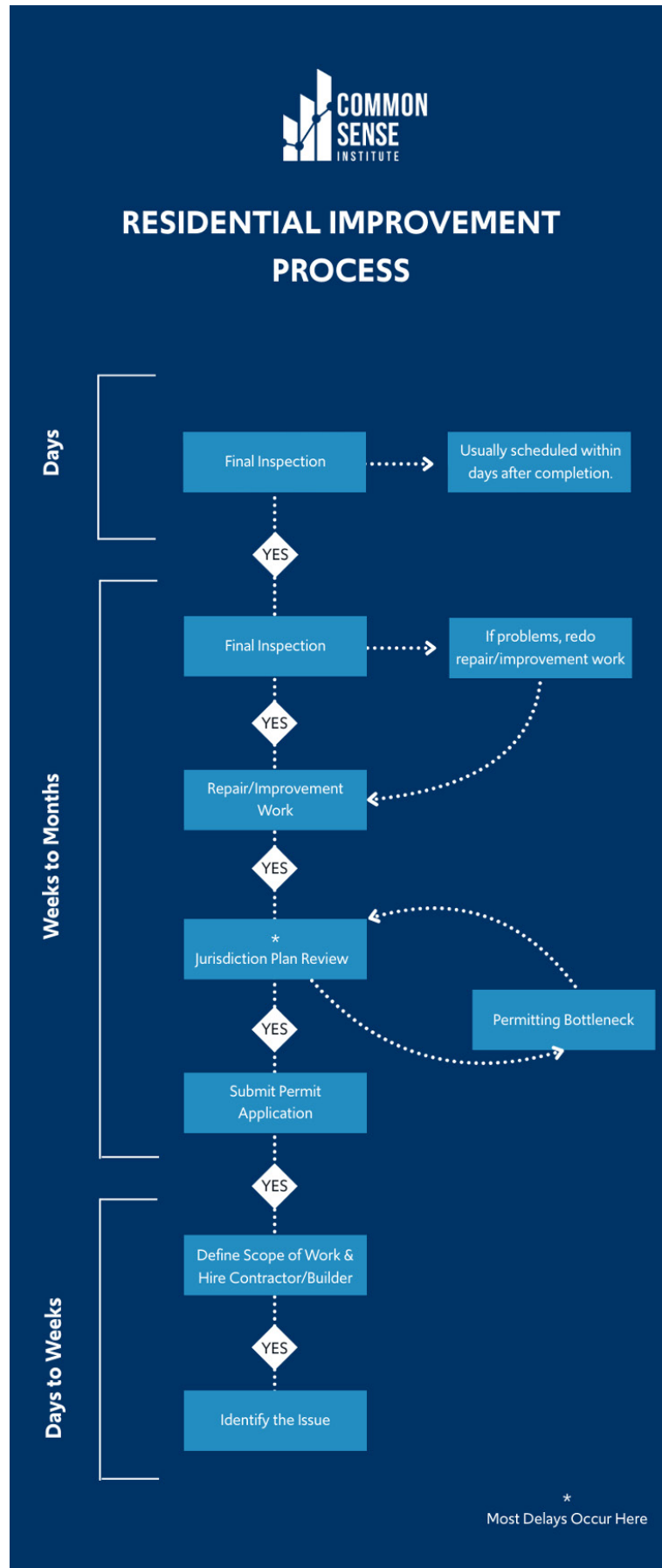
THE PERMITTING PROCESS

Across the United States, construction activity on private property, whether building a new home or modifying an existing one, typically requires approval from local government through a permitting process.

For new construction, builders design the housing units and submit plans for review before construction can begin. Existing homeowners must also obtain permits for many types of projects, such as additions, structural modifications, electrical or plumbing work, or other significant improvements to their property. Local governments review these proposed designs or changes to ensure they comply with applicable building codes and safety standards.

This process often requires detailed plan submissions and reviews by multiple departments. In some cases, local officials must sign off on design elements or proposed changes before work can proceed, which can involve costly delays as applicants revise plans or respond to comments from reviewers. Once plans are approved, and after any required fees are paid, the builder or homeowner can obtain permission to begin construction through the issuance of a building permit.

However, a building permit typically only authorizes the start of work. Throughout the construction process, additional approvals are required in the form of inspections to verify that work complies with applicable codes. For new homes, the project must ultimately receive a certificate of occupancy, which is the final confirmation from the local government that the structure meets building requirements and can legally be inhabited.



In Arizona alone, there are 91 cities and towns and 15 county governments, each responsible for managing these permitting processes within their jurisdictions. While these jurisdictions share many common elements, often using versions of the same model building codes, each also has its own procedures, requirements, timelines, and administrative practices. In significant part, these differences reflect local policy preferences regarding growth, development, and land use.

Unsurprisingly, navigating this complex system can be time-consuming. According to the Home Builders Association of Central Arizona, the process of moving from initial concept to completed housing in the Phoenix metropolitan area can now take four or five years. While residential improvement projects are typically smaller in scale, they are still subject to many of the same procedural requirements and reviews.

PLAN REVIEW

Before construction work can begin, applicants typically submit plans describing the proposed project. For homeowners and contractors, this might include architectural drawings for an addition, structural details for removing a wall, or diagrams showing electrical or plumbing modifications. Builders developing new homes submit much more extensive sets of construction plans.

Local government staff review these materials to verify compliance with building codes and other applicable regulations. Reviewers may request revisions or additional information if plans appear incomplete or inconsistent with local requirements. Because codes and local standards can involve technical or subjective interpretations, particularly when design or aesthetic considerations are involved, this back-and-forth between applicants and reviewers can take significant time.

To reduce the risk of delays later in the process, applicants often consult informally with local permitting staff before submitting final plans. While these discussions can help clarify expectations, they can also add additional steps and uncertainty to the approval process.

PERMIT ISSUANCE AND INSPECTIONS

Once plans are approved, the local government issues a building permit authorizing work to begin. For many residential projects, the time between submission of a complete application and permit issuance can be relatively short. According to available data, the average time between application and permit issuance in Arizona was roughly 40 days in recent years.

However, the permit issuance date marks only the beginning of the regulatory process. During construction, applicants must schedule and pass a series of inspections at various stages of the project, for example after foundation work, framing, electrical installation, or plumbing installation. If an inspection fails, corrections must be made and the work must be re-inspected before the project can proceed.

Each of these interactions with the permitting authority adds time and cost to the overall construction process. These costs are often less visible than the initial permit review period but can accumulate over the life of a project.

“There seem to be a lot more inspectors available than there are plan reviewers, and everyone seems to accept plan-review delays as a normal part of the process.”

– Arizona home improvement contractor

UNPREDICTABILITY OF PERMITTING REQUIREMENTS IN ARIZONA

The unpredictability of permitting requirements in Arizona poses challenges for builders, businesses, investors, and homeowners alike. Navigating the landscape of local regulations alone—not to mention potential state and federal regulations in some cases—present increased costs and uncertainties. This uncertainty not only affects project timelines and budgets, it can lead to missing housing stock, which can affect affordability and homeownership rates.

Arizona has 106 building-regulating and permit-issuing jurisdictions. Of these, 69 are very small, meaning they each cover less than 0.5% of the state's population. All jurisdictions maintain their own buildings codes, processing times, and applicable fees. There is no statewide standard for building codes and regulations.

Unpredictability is not just geographic; it extends across time as well. For example, according to a residential solar installer interviewed by CSI, the permitting process for solar installations has evolved significantly over the past two decades. While a notable positive change has been the digitization and automation of permit submission systems, which has reduced the need for in-person visits to permit offices and streamlined some aspects of the process, notable issues remain. Permitting timelines still fluctuate depending on demand and administrative capacity, and jurisdictions grow or shrink their regulatory capacity all the time. For example, the interviewees noted that during the housing construction boom around 2021, Tucson experienced multi-month backlogs in permit processing. Similar surges occurred when developers rushed to complete projects before federal solar tax credit deadlines in 2025. Staffing and agency productivity does not always keep pace; for example, closing in-person offices and remote regulatory work during the pandemic slowed many routine processes across Arizona.

Building codes themselves also evolve, and jurisdictions adopt new code versions at different rates. In southern Arizona, some jurisdictions still use electrical codes from the mid-2010s while others have adopted more recent standards. Individuals interviewed by CSI emphasized that newer codes are not necessarily more restrictive; sometimes they permit newer technologies that reduce installation costs. Still, these changes create varying complexity, uncertainty, and compliance issues that installers are obligated to keep up with.

In short, variations differ based on what is permitted, how activity is permitted, the fees to get a permit, and the time it takes to get permit approval. These aspects are discussed in the following sections.

Variations in What is Permitted

CSI reviewed the permitting requirements across the 106 permitting jurisdictions and found significant variations on what gets permitted. Figure 4 shows the results of our analysis. Overall, there is wide variation in what is permitted regardless of whether the measure is the share of jurisdictions likely requiring a permit or the share of the population likely requiring a permit.

Residential Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit
Door/Window Replacement	4.7%	6.0%
Electric Meter/Panel	100.0%	100.0%
Electrical Vehicle Charger	100.0%	100.0%
General Plumbing	100.0%	100.0%
General Residential Electricity	100.0%	100.0%
Heat Pump / HVAC Repair/Replace	90.6%	55.2%
Natural Gas Installation/Modification	100.0%	100.0%
Residential Energy Storage	100.0%	100.0%
Residential Roof Replacement	92.5%	57.6%
Residential Rooftop Solar	98.1%	89.4%
Residential Wall/Fence	19.8%	45.4%
Water Heater Replacement	91.5%	54.1%

All jurisdictions require permits for six types of projects: residential energy storage, electric meter/panel, general residential electricity, electrical vehicle charger, general plumbing, and natural gas installation/modification. There is less congruence for the other two groups of economic activity. Most jurisdictions regulate activity for four types of permits: residential rooftop solar, heat pump/HVAC repair and replacement, residential roof replacement, and water heater replacement. Lastly, a minority of jurisdictions regulate activity through permitting residential walls/fences and door/window replacement (see Figure 5).

FIGURE 5.

All jurisdictions regulate activity through permitting	Most jurisdictions regulate activity through permitting	Some jurisdictions regulate activity through permitting
Residential Energy Storage	Residential Rooftop Solar	Residential Wall/Fence
Electric Meter/Panel	Heat Pump / HVAC Repair/Replacement	Door/Window Replacement
General Residential Electricity	Residential Roof Replacement	
Electrical Vehicle Charger	Water Heater Replacement	
General Plumbing		
Natural Gas Installation/Modification		

This wide variation begs the question: is it possible to generalize permitting requirements across jurisdictions for standardized tasks? We think so.

Variations in How Building Activity is Permitted

In addition to variations in what gets permitted, jurisdictions make a choice in how building activity is permitted. For instance, Phoenix routes its permitting through its Planning and Development Department and SHAPE PHX portal, while Scottsdale employs its own planning and permitting system and reviews plans across disciplines such as planning, building, engineering, stormwater, and fire. Meanwhile, Pima County requires electronic submittals through its own permits platform.^{xiv, xv, xvi, xvii, xviii, xix}

The following table provides a comparison of these three entities as examples of how building activity is permitted across the state. Recognizing the differences apparent across just three jurisdictions makes it easier to understand the monetary and time costs associated with having 106 permitting jurisdictions.

FIGURE 6.

Jurisdiction	Main Permitting Page	Portal / System	How the Process is Framed	Important Differences
City of Phoenix	https://www.phoenix.gov/business/construction-permits-planning.html	SHAPE PHX (https://www.phoenix.gov/administration/departments/pdd.html)	Permitting administered through the Planning and Development Department with online applications, plan review, fees, and inspections managed through SHAPE PHX.	More segmented process with separate pathways for residential, commercial/multifamily, and site-development review.
City of Scottsdale	https://www.scottsdaleaz.gov/planning-development/permit-services	Planning and Permitting Portal / SPUR (https://www.scottsdaleaz.gov/planning-development/planning-and-permitting-portal)	Unified planning-and-permitting portal where projects undergo plan review for compliance with city codes across multiple departments.	Explicit multi-discipline review (Planning, Building, Engineering, Stormwater, Fire) prior to permit issuance.
Pima County	https://www.pima.gov/1141/Online-Building-Permits	Permit Gateway (https://permits.pima.gov/acaprod/)	County development-services process with digital submittal, review, fee payment, and inspections managed through the Permit Gateway.	Clear separation between building permits and broader site-development or commercial development approvals.

CSI's discussions with tradesmen and contractors working in Arizona confirm both the variation and complexity induced by the state's fractured permitting systems. These individuals said administrative complexity across jurisdictions is one of the most significant drivers of their compliance costs. Because each jurisdiction may have different documentation requirements, code interpretations, and equipment specifications, they must maintain detailed internal records describing the permitting requirements for each location in which they operate.

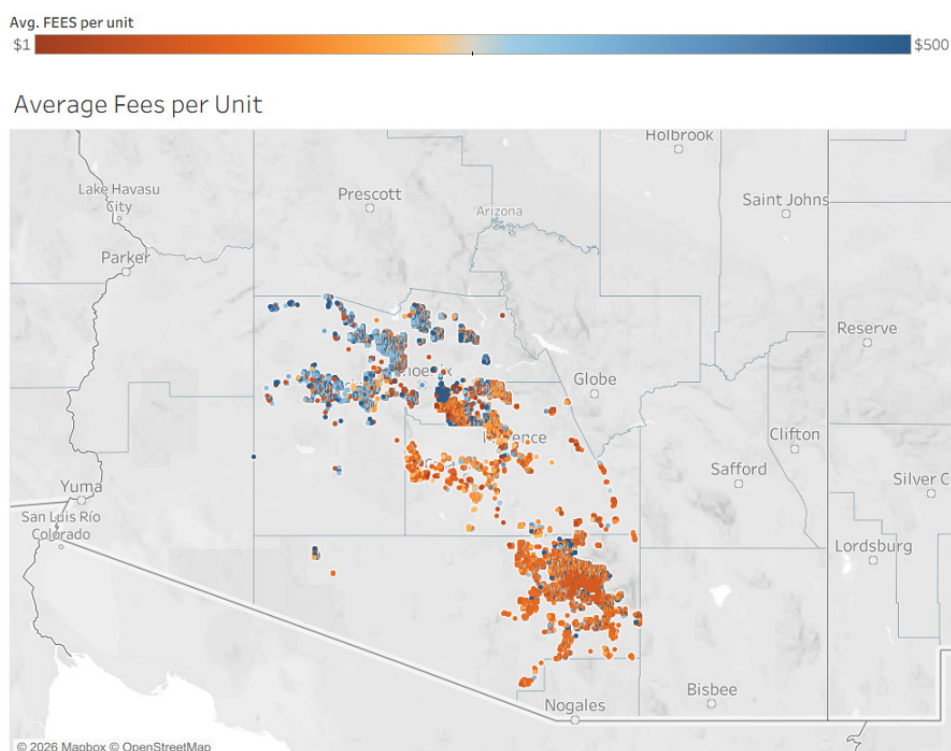
This fragmentation creates additional costs in several ways. Installers must customize plan sets and engineering drawings for each jurisdiction, maintain separate inventories of equipment that satisfy local code requirements, and devote staff time to monitoring regulatory changes. According to the interviewees, maintaining jurisdiction-specific compliance information and adapting project plans accordingly represents a substantial ongoing administrative burden.

The interviewees also noted that permitting offices do not always communicate regulatory changes clearly to contractors. In some cases, installers only learn that a requirement has changed after their permit application is rejected. At that point, contractors must determine what requirement changed, revise their plans, and resubmit the application, further extending project timelines and increasing administrative costs.

Variations in Permit Fees

Each jurisdiction also makes a choice regarding the fees it will require from builders and homeowners in order to get approval for their building project. Figure 7 has that view. Overall, fees are generally higher as one gets closer to the Phoenix, although, as shown in the map, fees vary widely.

FIGURE 7.



Variations in Time to Get a Permit

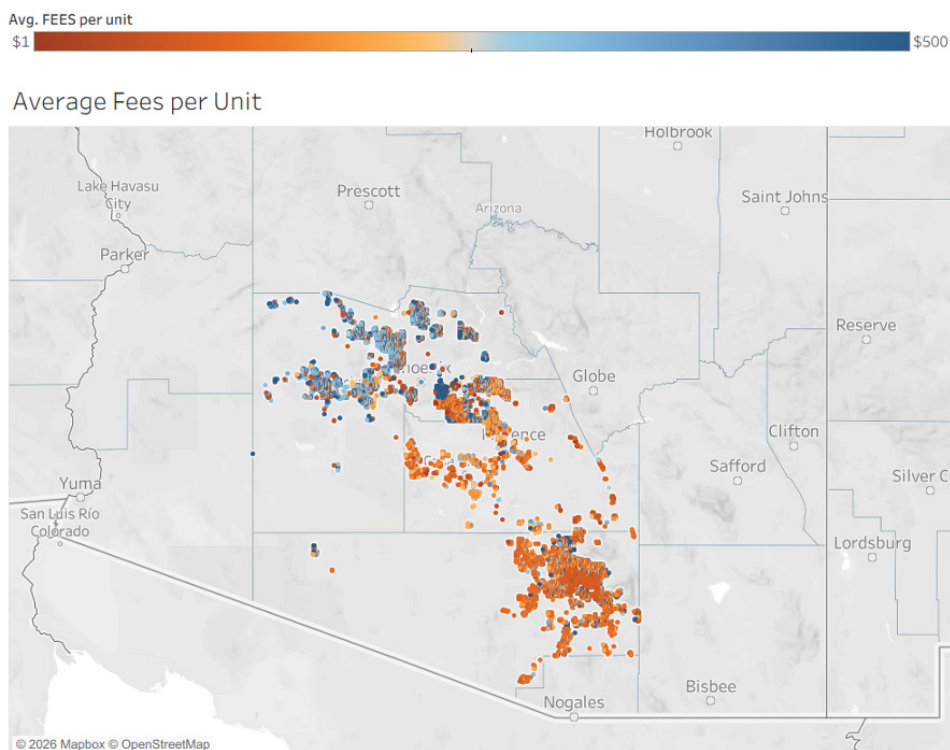
Figure 8 provides a geographic view of the amount of time it took to get a permit across locations.

Approval time data was confirmed by discussions with contractors working in various residential trades and across Arizona. All consistently revealed substantial variation in permitting requirements and review timelines across the jurisdictions they work in, even within the same region or metro area. For example, all jurisdictions in which the interviewed firms operate require permits for solar installations and related electrical work, but the process and timeline for obtaining those permits differed significantly, even though the installations were quite similar.

In some jurisdictions, particularly larger municipalities such as Tucson, Pima County, and Oro Valley, installers may submit permit applications through the automated SolarApp+ platform, which can issue permits instantly. In contrast, some smaller or rural jurisdictions may take up to a month to review and approve permit applications. The interviewees described the permitting environment across Arizona as highly inconsistent, noting that developers must tailor each permit submission to the specific expectations of each jurisdiction.

Certain jurisdictions also impose additional technical requirements. For example, both Santa Cruz County and Sahuarita require structural engineering analysis and stamped drawings for rooftop solar installations, which add both time and direct costs to projects. These additional requirements are not universal across the region, further contributing to fragmentation in compliance processes.

FIGURE 8.



A REVIEW OF SPECIFIC IMPROVEMENT PROJECTS ACROSS ARIZONA

CSI identified 12 categories/subcategories of permitted activity across the 106 jurisdictions to gauge who permits/exempts the activity, how long it takes to get a permit and complete a permitted project, and how much it costs to get a permit (fees). The rest of this section presents this information.

Door/Window Replacement

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
Door/Window Replacement	4.7%	6.0%	9.8	23.1	\$110	\$488

Door and window replacement permits regulate modifications to exterior openings in residential structures. These improvements can affect structural integrity, energy efficiency, and building energy performance. However, only about 5% of jurisdictions require permits for door or window replacements, representing roughly 6% of the state's population.

Because relatively few jurisdictions require these permits, approval timelines vary considerably. Where permits are required, approvals typically occur relatively quickly because the work is generally straightforward and often follows prescriptive building code standards. In the Shovels.ai data reviewed by CSI, the faster permitting jurisdictions (25th percentile) took about 10 days to approve a permit, while the slower moving jurisdictions take about 23 days (75th percentile).

Permit fees for door and window permits vary widely across jurisdictions but are often comparable to those for exterior wall permits. In some jurisdictions, fees can exceed \$110 (25th percentile) even for relatively simple replacement projects, while on the higher end (75th percentile), fees can reach \$488 per unit.

Electric Meter/Panel

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
Electric Meter/Panel	100.0%	100.0%	7.0	18.9	\$103	\$245

Electric meter or service panel upgrades involve replacing or modifying the main electrical distribution panel serving a home. These upgrades are often necessary when homes install solar systems, EV chargers, or other high-load electrical equipment. Because service panels connect directly to utility infrastructure, all jurisdictions in Arizona require permits for these upgrades.

Approval timelines for panel upgrades vary depending on the complexity of the work and coordination with electric utilities. In many jurisdictions, approvals occur within one week (seven days is the 25th percentile) to a little over two weeks (19 days is the 75th percentile), although projects requiring additional review may take longer. Jurisdictions with standardized electrical review processes typically process these permits more quickly.

Permit fees for panel upgrades typically range from \$103 (25th percentile) to \$245 (75th percentile), depending on the scope of electrical work involved. Additional costs may arise if electrical engineering documentation or utility coordination is required. Variation across jurisdictions largely reflects differences in local fee schedules.

Electrical Vehicle Charger

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
Electrical Vehicle Charger	100.0%	100.0%	5.9	23.3	\$93	\$176

Residential electric vehicle (EV) charger installations involve adding a dedicated electrical circuit and charging equipment to support electric vehicles. Because these systems interact with a home's electrical service panel and involve substantial electrical loads, all Arizona jurisdictions require permits for EV charger installations.

Approval timelines for EV charger permits are generally similar to those for other electrical permits. Many jurisdictions treat EV charger installations as routine electrical work, which allows relatively quick approvals. However, where service panel upgrades or additional electrical infrastructure are required,

review times may be longer. Jurisdictions with streamlined online permitting systems typically process these permits more quickly than those relying on manual review processes. Overall, CSI's analysis of the Shovels.ai data gave a typical range of between approximately six days (25th percentile) for the quicker jurisdictions to 23 days (75th percentile) for the longer jurisdictions.

Permit fees for EV charger installations generally fall within the \$93 (25th percentile) to \$176 (75th percentile) range, depending on whether the project involves additional electrical upgrades. Some jurisdictions also assess inspection fees as part of the permit process. Overall, while EV charger permitting costs are relatively modest, the variation in fees across jurisdictions remains significant.

General Plumbing

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
General Plumbing	100.0%	100.0%	3.7	14.8	\$104	\$630

General plumbing permits cover modifications to residential plumbing systems, including installation of new fixtures, piping modifications, and water supply improvements. Because plumbing systems interact with potable water and sanitation infrastructure, all Arizona jurisdictions require permits for general plumbing work.

Approval timelines for plumbing permits are generally moderate compared with other residential permits. Many jurisdictions allow routine plumbing permits to be issued relatively quickly, often within a few days (about four days for the quicker jurisdictions (25th percentile)) to roughly two weeks (15 days for the 75th percentile). However, jurisdictions that require more detailed plan review may take longer to process plumbing permits.

Permit fees for plumbing work typically fall within the \$104 (25th percentile) to \$630 (75th percentile) range depending on project scope. Although these fees are relatively modest, the variation across jurisdictions again reflects differences in local administrative fee structures rather than differences in project complexity.

General Residential Electricity

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
General Residential Electricity	100.0%	100.0%	6.9	27.2	\$122	\$312

General residential electrical permits cover a wide range of electrical improvements within homes, including new circuits, wiring modifications, and electrical equipment upgrades. These permits ensure compliance with electrical codes designed to prevent fire hazards and ensure safe operation of residential electrical systems. Across Arizona, all jurisdictions require permits for general residential electrical work, making this one of the most consistently regulated categories of residential improvement.

Approval timelines for general electrical permits are generally shorter than those for more complex projects because many jurisdictions allow over-the-counter or simplified review for routine electrical work. In the Shovels.ai dataset used by CSI, approval times for these permits are often between roughly seven days (25th percentile) to 27 days (75th percentile). Larger jurisdictions with more automated permitting systems tend to approve electrical permits more quickly than smaller jurisdictions that rely on manual plan review processes.

Permit fees for general electrical work are typically modest relative to other residential permits. Across jurisdictions, fees often fall within the \$122 (25th percentile) to \$312 (75th percentile) range, although more complex electrical upgrades may involve higher fees. As with other permit types, the variation across jurisdictions reflects differences in fee schedules rather than differences in project scope.

Heat Pump/HVAC Repair/Replace

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
Heat Pump / HVAC Repair/ Replace	90.6%	55.2%	6.4	17.7	\$126	\$298

HVAC permits regulate the installation, replacement, or repair of heating, ventilation, and air-conditioning systems. These systems are essential for habitability, particularly in Arizona's extreme heat. Approximately 91 % of jurisdictions require permits for HVAC replacements, although those jurisdictions represent only about 55% of the state's population, indicating that some larger jurisdictions exempt certain like-for-like replacements.

Approval timelines for HVAC permits vary depending on jurisdictional policies. Many jurisdictions allow expedited approval for like-for-like replacements, particularly where systems must be replaced urgently due to failure. However, some jurisdictions require more extensive plan review, which can lengthen approval times to two weeks or more (the 75th percentile of jurisdictions is about 18 days).

Permit fees for HVAC permits typically range from \$126 (25th percentile) to \$298 (75th percentile), depending on system size. In some jurisdictions, fees are calculated based on equipment capacity or project valuation, which can increase costs for larger systems.

Natural Gas Installation/Modification

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
Natural Gas Installation/Modification	100.0%	100.0%	6.4	12.3	\$107	\$288

Natural gas installation or modification permits regulate work involving gas lines, connections to appliances, or extensions of gas service within residential properties. Because natural gas systems present safety risks if improperly installed, all Arizona jurisdictions require permits for gas line installations or modifications.

Approval timelines for gas permits are typically similar to those for plumbing permits because the systems are closely related. Routine permits can often be issued within several days (six days is the 25th percentile for faster permit issuing jurisdictions) to approximately two weeks (12 days is the 75th percentile for slower moving jurisdictions), although complex projects may require additional review.

Permit fees for natural gas installations generally range from \$126 (25th percentile) to \$250 (75th percentile), depending on the complexity of the work involved. As with other permit types, fee variation across jurisdictions often reflects differences in local fee schedules rather than differences in technical requirements.

Residential Battery/Energy Storage

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
Residential Energy Storage	100.0%	100.0%	3.9	24.1	\$134	\$340

Residential energy storage systems store electricity generated from rooftop solar panels or the grid for later use, potentially improving household resilience and energy management. In Arizona, all jurisdictions require permits for residential energy storage installations, reflecting the systems' interaction

with electrical infrastructure and fire safety standards. Permitting typically involves review of electrical diagrams, equipment specifications, and compliance with fire and building codes governing battery placement and ventilation.

Approval timelines for battery systems mirror those for solar installations because the projects are typically one permit. In jurisdictions that utilize automated systems such as SolarAPP+, approvals occur instantly. In jurisdictions relying on manual review processes, approval timelines are typically longer and may extend to several weeks. Interviews with installers indicate that inconsistent interpretation of evolving fire and electrical codes can also contribute to variation in approval timelines across jurisdictions. Overall, the typical approval time ranges from about four days (25th percentile) to 24 days (75th percentile).

Permit fees for residential battery installations are typically comparable to those for rooftop solar projects. Direct permit fees generally range from roughly \$134 (25th percentile) to \$300 (75th percentile), depending on system size. In some jurisdictions, additional review by fire departments or, in uncommon situations, structural engineers may increase costs. Because battery installations remain a relatively new technology, some jurisdictions impose additional documentation requirements that increase administrative costs for installers.

Residential Roof Replacement

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
Residential Roof Replacement	92.5%	57.6%	5.5	25.5	\$257	\$495

Residential roof replacement involves the replacement of a residential property's roof. Across Arizona, 93% of jurisdictions require a permit, representing about 58% of the state's population.

Approval timelines for residential rooftop replacement range from six days to 26 days. Permit fees for the work typically range between \$257 (25th percentile) and \$495 (75th percentile).

Residential Rooftop Solar

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
Residential Rooftop Solar	98.1%	89.4%	7.0	27.1	\$108	\$321

Residential rooftop solar installations involve the placement of photovoltaic (PV) panels on residential structures to generate electricity, often paired with electrical interconnection upgrades or battery storage systems. Across Arizona, permitting requirements vary widely, while the requirement for a permit is near

universal: approximately 98% of jurisdictions representing about 89% of the state's population require permits for these installations. Only a small number of jurisdictions exempt certain small-scale systems or simplified installations. Because solar systems interact with electrical infrastructure and building structures, most jurisdictions require plan review and inspection prior to system energization.

Approval timelines for residential solar permits vary widely across jurisdictions, typically in the range from seven days to 27 days. In jurisdictions using the SolarAPP+ automated permitting platform, approvals occur instantly. Shovels.ai's permitting data indicates that jurisdictions utilizing SolarAPP+ average approximately six days for permit approval and about 35 days for total project completion, compared with roughly 17 days for approval and 65 days for project completion in jurisdictions that rely on traditional manual review processes.^{xx} These differences highlight how administrative practices, rather than project complexity, often explain variation in permitting timelines for otherwise standardized installations.

Permit fees for rooftop solar installations also vary significantly. Direct permit fees typically range from approximately \$108 (25th percentile) to \$321 (75th percentile) per installation per unit . Additional costs may arise where jurisdictions require structural engineering reviews or stamped drawings, which can add \$300–\$500 in engineering fees. These additional requirements are not consistent across jurisdictions, meaning identical installations may face substantially different regulatory costs depending solely on geographic location.

Residential Wall/Fence

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
Water Heater Replacement	91.5%	54.1%	3.7	18.5	\$106	\$141

Residential wall and fence permits regulate the construction or replacement of perimeter walls and fencing structures on residential properties. These structures may affect property boundaries, safety, and neighborhood design standards. Across Arizona, only about 20% of jurisdictions require permits for residential wall or fence construction, although those jurisdictions represent roughly 45% of the state's population.

Approval timelines for wall and fence permits are often shorter than those for structural building projects because these improvements often involve relatively simple construction methods. In the fastest processing jurisdictions, permits can be issued within 10 days (25th percentile), while the less efficient districts can take three weeks (23 days is the 75th percentile of jurisdictions), although projects involving height variances or property boundary issues may require additional review.

Permit fees for wall and fence construction vary widely. The Shovels.ai data employed by CSI suggest that fees for these permits can range from \$97 (25th percentile) to \$378 (75th percentile) or more in some jurisdictions, making them among the more expensive residential improvement permits relative to the perceived simplicity of the work involved.

Water Heater Replacement

Permit Activity	Share of Jurisdictions Likely Requiring a Permit	Share of Population Likely Requiring a Permit	25th Percentile in Time to Get a Permit (Days)	75th Percentile in Time to Get a Permit (Days)	25th Percentile in Cost to Get a Permit (Fee per Unit)	75th Percentile in Cost to Get a Permit (Fee per Unit)
Water Heater Replacement	91.5%	54.1%	3.7	18.5	\$106	\$141

Water heater replacement permits regulate the installation of new residential water heating systems. Because water heaters interact with plumbing, gas, and electrical systems, approximately 92% of jurisdictions require permits for water heater replacements, covering about 54% of Arizona's population.

Approval timelines for water heater permits are generally short because these replacements can be urgent household repairs. Many jurisdictions issue permits within a few days (four days is the 25th percentile of jurisdictions), and some allow same-day or over-the-counter approvals for straightforward replacements. Slower moving jurisdictions may approval a water heater permit in approximately 19 days (75th percentile).

Permit fees for water heater installations are typically among the lowest residential permits. In some jurisdictions, fees can be as low as approximately \$106, although fees can reach \$141 or more.

THE ECONOMIC COSTS OF PERMITTING REQUIREMENTS IN TIME & MONEY

Project Times

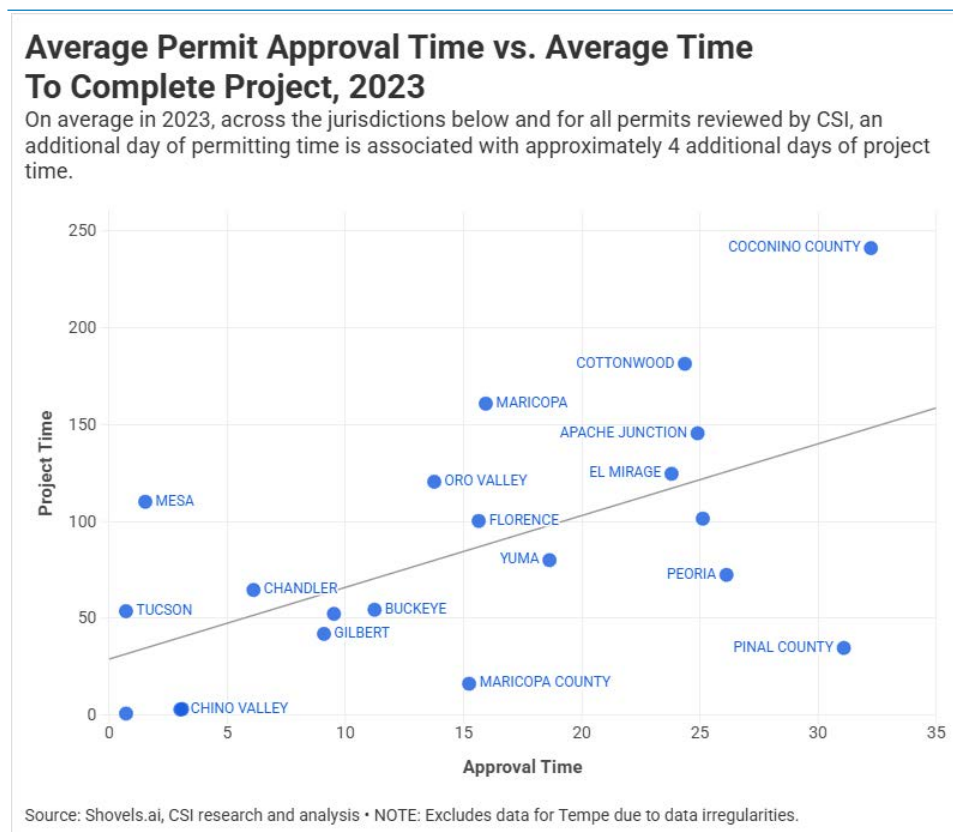
This section looks at the difference between approval time for a project and total project time to determine how much delays in approvals affect the length of a project.

The following Figure 9 has the answer. Shown on the x-axis (horizontal axis) is the average approval time across all projects for the jurisdictions in the dataset. Shown on the y-axis (vertical axis) is the average project time for the same jurisdictions/projects. The gray diagonal line is the correlation between the two. Notice that it is upward sloping—meaning that an additional day of approval time adds additional time to the project time. How much time? Looking at the middle part of the graph for approval time—from 15 days to 20 days—it is clear an approval time of 15 days is associated with approximately 80 days of project time. If we now move to 20 days of approval time and find the corresponding project time value, the corresponding project time value is a little over 100 days. The calculation is therefore:

$$\text{Additional Days of Project Time from an Additional Day of Approval Time} = \frac{(100 - 80)}{(20 - 15)} = 4 \text{ days.}$$

Essentially, these findings indicate that an additional day of approval time equates to four additional days of project time, confirming what CSI's interviewees told us many times: Delays in the plan review stage of permitting were ... the primary bottleneck in the approval process.^{xxi}

FIGURE 9.



Economic Costs

Permit fees vary widely and can be substantial, ranging from \$43 for a water heater permit to over \$300 for typical wall and exterior opening permits. But the direct costs of permits in terms of filing fees are only part of the cost of compliance.

Permitting and regulatory approval processes play a sometimes outsized role in shaping the cost, timing, and feasibility of construction and infrastructure projects. Indeed, academic and policy research suggests that complex or inefficient permitting requirements can substantially increase overall project costs. These costs arise not only through direct regulatory compliance expenditures, but also through delays, administrative uncertainty, and fragmented approval processes across multiple jurisdictions.

One of the most detailed empirical analyses of permitting costs comes from research conducted by the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) that examined residential solar photovoltaic (PV) installations across U.S. municipalities. This study found jurisdictions with streamlined permitting processes can reduce residential PV installation prices by approximately \$0.27–\$0.77 per watt, representing roughly 4%–12% of median installation costs in California.^{xxii} The authors also found that streamlined permitting practices were associated with reductions in development timelines of approximately 24 days on average, or roughly 25% of the median development time.

These findings illustrate how regulatory fragmentation across jurisdictions can create meaningful cost differences even for relatively standardized technologies.

Related research published in *Energy Policy* further quantifies the impact of regulatory variation on project costs. Using regression analysis and two alternative measures of regulatory efficiency, researchers estimated that local permitting procedure differences alone can generate solar price differences of approximately \$0.18 per watt. When broader regulatory requirements such as zoning approvals, inspections, and administrative procedures were considered, price differences increased to between \$0.64 and \$0.93 per watt.^{xxiii}

These findings suggest that regulatory streamlining has the potential to meaningfully reduce soft costs in distributed energy markets and improve project economics for renewable energy investments.

Housing economics literature provides additional evidence that permitting and regulatory approvals contribute substantially to development costs. More recent macroeconomic research by Hsieh and Moretti (2019) provided broader evidence of the economic consequences of land-use and development regulation. Their study estimated that restrictive housing supply regulations, including zoning and permitting constraints, in high-productivity metropolitan areas significantly reduce aggregate economic output by limiting housing supply and constraining labor mobility. The authors estimated that these regulatory constraints reduce U.S. GDP by several percentage points by preventing workers from relocating to more productive regions.^{xxiv} Although their analysis focused primarily on land-use restrictions, permitting delays and regulatory approval processes represent key mechanisms through which development constraints operate.

Several studies specifically examine how permitting timelines and regulatory uncertainty affect development costs. These costs include interest payments on financing, property taxes, and

administrative expenses associated with maintaining development plans during the approval process. Longer permitting timelines therefore increase total project costs even when direct regulatory fees are relatively modest.^{xxv, xxvi, xxvii, xxviii}

These findings are, of course, not new. Older research produced similar results. Mayo and Sheppard (2001) found that regulatory approval processes can add between 10 and 30% to housing development costs in some metropolitan markets.^{xxix} Their analysis highlights how sequential approval requirements—such as zoning approvals, design review boards, environmental assessments, and building permits—can significantly lengthen development timelines. Each stage of review introduces additional uncertainty and potential delays, which increase financing costs and project risk. Quigley and Raphael (2005) also found regulatory approval processes have a strong influence on housing supply elasticity.^{xxx} In metropolitan areas with more complex approval systems, new housing construction responds more slowly to increases in demand, contributing to higher housing prices and reduced affordability. These findings suggest that regulatory complexity not only affects individual project costs but also has broader implications for housing market outcomes.

Across sectors, academic research consistently identifies several mechanisms through which permitting requirements increase project costs. First, direct regulatory compliance costs—including permit fees, documentation requirements, and engineering reviews—add to total project expenditures. Second, permitting delays increase financing costs because developers must carry land acquisition and pre-development expenses for longer periods before construction begins. Third, regulatory uncertainty increases project risk, which can raise required rates of return or discourage investment altogether. Finally, variation in permitting practices across jurisdictions can prevent developers from realizing economies of scale when undertaking projects in multiple locations.^{xxxii, xxxiii}

These consequences are felt by the home improvement contractors CSI interviewed. According to one rooftop solar and battery storage contractor in southern Arizona, permit fees alone typically range from \$75 to \$250 per project, depending on the jurisdiction. In addition, installers must devote staff time to preparing application materials, engineering drawings, and other documentation required for plan review. The interviewee estimated that the internal labor and administrative costs associated with preparing permit submissions typically added up to \$400 per project in customer contract costs. Where structural engineering review is required, an additional cost can range from \$300 to \$500, largely reflecting fees paid to licensed engineers to review project plans and provide the required professional stamp. Tellingly, whether such a stamp is required often varies in jurisdiction, not project. Indeed, identical projects in the same region with the same structural details can be hundreds of dollars cheaper to do depending purely on whether the regulating jurisdiction requires engineering drawings. Considered together, these compliance-related expenses can add several hundred dollars to the cost of a typical residential solar installation.

Other contractors have confirmed similar phenomena throughout residential single-trade projects.

Arizona contractors consistently suggested that automating processes, introducing technology and/or third-party solutions into the traditional city permit office model, and standardizing codes, definitions, and practices could substantially alleviate many of these issues even while retaining the underlying requirements and the life/safety standards.

SolarAPP+ is a telling example. The adoption of SolarAPP+ in southern Arizona accelerated during the COVID-19 pandemic when permitting offices faced large backlogs and limited in-person operations. According to both evidence in the permitting data and discussion with impacted installers, rapid adoption in southern Arizona encouraged by Pima County has contributed to improvements in the process for getting residential solar projects done.

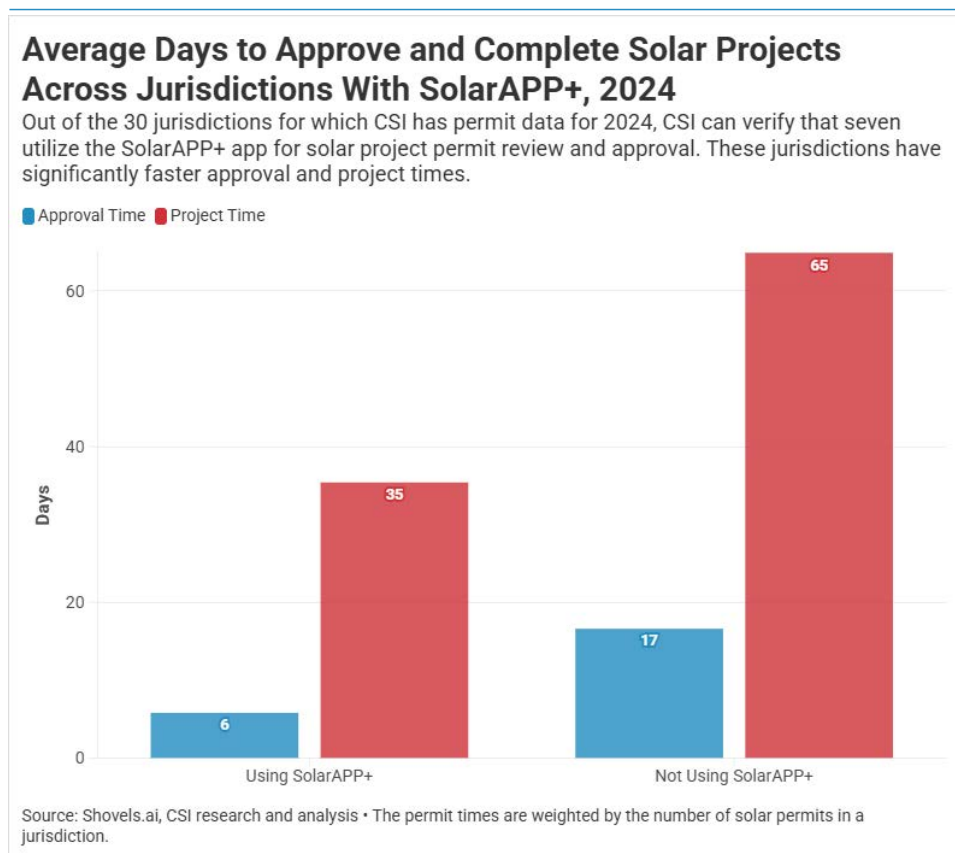
SOLARAPP+ AS A MODEL

Solar projects tend to be standard. As such, they represent a feasible permit type to test the impact of streamlining the process of permitting. CSI found seven jurisdictions that use a software program known as SolarAPP+. SolarAPP+ is an automated permitting software for photovoltaic, solar plus battery storage, main panel upgrades when tied to solar installation, and main break derates when tied to a solar installation. It was developed through a collaboration involving the U.S. Department of Energy's Solar Energy Technologies Office, NREL, code officials, and industry participants to address one of the biggest soft-cost problems in rooftop solar: local permitting delays and inconsistency. The seven jurisdictions that use this platform are: Cottonwood, Goodyear, unincorporated areas of Maricopa County, Oro Valley, Phoenix, Pima County, and Tucson.^{xxxiv, xxxv}

How long does permitting take for jurisdictions using SolarAPP+ compared with other jurisdictions?

Figure 10 provides the answer. For jurisdictions using SolarAPP+, which offers instantaneous approval for projects that go through, the average approval time was six days, and the average project time was 35 days. By contrast, for jurisdictions not using SolarAPP+, the average approval time is 17 days, and the average project time is 65 days.¹

FIGURE 10.



³ Most projects using SolarAPP+ go through instantaneously, although some projects do not go through.

ESTIMATING THE VALUE OF IMPROVEMENT

Again, there is substantial variation across Arizona jurisdictions' current permit practices. Many municipal and county governments have adopted more efficient regulatory regimes. To assess the value those choices create, CSI exploits this variation between places across four common administrative practice over the roughly 30 cities, towns, and counties for which detailed permit data was available: pre-approved standard plans, over-the-counter review, online submission, and expedited review. Jurisdictions using at least one of these tools generally had shorter approval and project times. **“Permit-friendly” jurisdictions – defined here to be those that adopted *all* of these practices, in some form and based on a review of publicly-available permit office processes – approved regulated projects three to five days faster than those that weren't, on average.**

These results are summarized in Figure 11, above. For additional technical details see Appendix A.

CSI also reviewed the effects of self-certification, a reform first adopted in Phoenix in 2011 and later expanded to several other Arizona jurisdictions. Unlike the administrative practices above, self-certification is more selectively used by permit offices – it typically doesn't include the kinds of single-trade improvement projects discussed throughout this report. In Phoenix, for example, self-certification is limited to certain larger commercial new construction projects. Still, the results are confirmatory: efforts to streamline existing processes (without changing regulated standards) can produce meaningful results, without compromising safety or design quality.

Under self-certification, applicants for certain qualifying projects attest that their plans comply with applicable codes, allowing permits to be issued without the same level of staff review. Using commercial and other permit data for projects most likely to be affected by these programs in Arizona, CSI estimates that self-certification reduced average project times by about 40 days – *or roughly 13% of expected total project time.*

Contemporary reporting in Phoenix from the time of policy adoption suggests a much larger reduction in some cases, of up to six months.

The Low Public Cost of Reform

A common concern is that streamlining permitting could reduce local government staffing, budgets, or fee revenue. CSI found no evidence of that in the jurisdictions reviewed. Comparing planning and development departments before and after adoption of self-certification, CSI found that employment and budgets generally increased in the years following reform. Six of the seven jurisdictions reviewed saw growth in both staffing and budgets; the one exception appears to reflect broader departmental reorganization rather than the reform itself. Additional detail is provided in Appendix A.

Based on both the permit data and the budget and staffing review, CSI finds little reason to expect that common process reforms—such as online submission, over-the-counter review, expedited review, or self-certification—would materially reduce local government capacity.

THE BOTTOM LINE

Arizona's permitting regime is a product of an earlier era, when the state was smaller, less concentrated, and technical processes were done by hand and on paper. Today, this system is a relic; 106 permit-issuing jurisdictions play by their own rules, and there is no consistency or predictability—a problem that significantly raises costs for builders and homeowners.

Permitting can have its place – when well-designed and consistently enforced, it can protect public safety and ensure construction meets minimum standards. But it is a dubious proposition today that more permissive jurisdictions are any less safe or reliable. This research demonstrates that policymakers could make simple changes that would reduce permitting burdens without endangering standards or safety. These changes also should not negatively impact our local governments.

On its own, easing permitting for single trade residential projects would not resolve but should be a meaningful step towards addressing the state's ongoing affordability crisis.

APPENDIX A

The following table is a comparison of the FTE counts and budgets for seven jurisdictions with self-certification. The information is reported on a “Prior to Self-Certification” and “Post Self-Certification” basis.

Entity	Date of Self-Certification Adoption	Prior to Self-Certification	Post Self-Certification	Sources
City of Surprise	2017/2018	Community Development Department	Community Development Department	FY 2015: https://content.civicplus.com/api/assets/az-surprise/20274f55-d853-4a0a-88cb-ace-1ccfd3407?cache=1800
		FY 2015	FY 2020	FY 2020: https://content.civicplus.com/api/assets/az-surprise/44629fd7-b120-4ea4-8c70-2fef2656d66c?-cache=1800
		FTE: 43	FTE: 43	
		Budget: \$5.2 million	Budget: \$12.8 million	
Phoenix	CY 2010	Community Planning & Development Department	Community Planning & Development Department	https://www.phoenix.gov/administration/departments/budget/documents-reports/budget-library.html
		2010	2015	
		FTE: 202	FTE: 304.8	2020: https://www.tucsonaz.gov/files/sharedassets/public/v/1/bsd/documents/finance-documents/cot-2024-annual-comprehensive-financial-report.pdf
		Budget: \$29.4 million	Budget: \$46.3 million	2024: https://www.tucsonaz.gov/files/sharedassets/public/v/1/bsd/documents/finance-documents/budget-book-2025/715.-pdsd.pdf
Tucson	2020	Planning & Development Services	Planning & Development Services	
		FY 2019	FY 2024	
		FTE: 55	FTE: 95	
		Budget: \$6.3 million	Budget: \$13 million	

Entity	Date of Self-Certification Adoption	Prior to Self-Certification	Post Self-Certification	Sources
Peoria	Late 2014/early 2015	Development & Engineering Department	Development & Engineering Department	2014: https://www.peoriaaz.gov/home/showpublisheddocument/758/636298568163600000
		FY 2014	FY 2019	2019: https://www.peoriaaz.gov/home/showpublisheddocument/21024/637267755061700000
		FTE: 54.75	FTE: 66.75	
		Budget: \$6.1 million	Budget: \$8.0 million	
Mesa	2015	Development & Sustainability Department	Development Department	2014: https://apps.mesaaz.gov/meetingarchive/archiveddocuments/Resolutions/RES%2010293.13.pdf
		FY 2014	FY 2019	2019: https://openbudget.mesaaz.gov/#/year/2026/operating/0/department_name?vis=lineChart
		FTE:	FTE: 84.5	
		Budget: \$11.3 million	Budget: \$10.2 million	
		FY 2013 Budget: \$8.1 million		
Gilbert	Formal self-certification around 2021; potentially something as early as 2012	Planning Services Department	Planning Services Department	2020: https://www.gilbertaz.gov/home/showpublisheddocument/33460/636957593488470000
		FY 2020	FY 2025	2025: https://www.gilbertaz.gov/home/showpublisheddocument/49235/638531997854900000
		FTE: 13	FTE: 14	
		Budget: \$10.9 million	Budget: \$13.4 million	
Chandler	Self-certification approximately 2016	Transportation & Development Services Department	Transportation & Development Services Department	https://www.chandleraz.gov/sites/default/files/City-of-Chandler-Annual-Comprehensive-Financial-Report-20-21-Dec-2021.pdf
		FY 2016	FY 2021	Note: The city reorganized its transportation and development services departments in 2019; the 2021 FTE count is the sum of that year's development services and streets utilities counts.
		FTE: 150	FTE: 155	
		Budget: \$25.5 million	Budget: \$58.9 million	

REFERENCES

- i. Federal Reserve Bank of St. Louis, "Private Employment: Arizona," FRED Economic Data, accessed March 12, 2026, <https://fred.stlouisfed.org/series/AZBPPRIV>
- ii. Joseph Gyourko and Raven Molloy, "Regulation and Housing Supply," in *Handbook of Regional and Urban Economics*, vol. 5B (Amsterdam: Elsevier, 2015).
- iii. Common Sense Institute, CSI Research (Arizona: Common Sense Institute).
- iv. Shovels.ai, "Shovels.ai," accessed March 12, 2026, <https://www.shovels.ai/>
- v. Common Sense Institute, analysis of Shovels.ai permitting data.
- vi. Giulia Carbonaro, "U.S. Housing Market Sees Slowdown in New Building Projects," *Newsweek*, accessed March 12, 2026.
- vii. Talia Milgrom-Elcott, "Skilled Trade Instructor Shortage Hits 26 States as Local Demand for Workers Surges," accessed March 12, 2026.
- viii. Kevin Ryan, "Why It's an Exciting, Uncertain Time in Home Improvement," accessed March 12, 2026.
- ix. National Park Service, "Historic Asset Documentation," accessed March 12, 2026, <https://npgallery.nps.gov/GetAsset/0b480a0d-6f5d-47f7-b4e4-efcc726dd9e9>
- x. National Park Service, "Historic Asset Documentation," accessed March 12, 2026, <https://npgallery.nps.gov/GetAsset/0b480a0d-6f5d-47f7-b4e4-efcc726dd9e9>
- xi. National Park Service, "Historic Asset Documentation," accessed March 12, 2026, <https://npgallery.nps.gov/GetAsset/0b480a0d-6f5d-47f7-b4e4-efcc726dd9e9>
- xii. City of Benson, Arizona, *Planning and Zoning Commission Handbook*, accessed March 12, 2026, https://webgen1files1.revize.com/cityofbenzonaz/Document%20Center/Government/Boards%20%26%20Commissions/Planning%20%26%20Zoning%20Commission/pzhandbook_email.pdf
- xiii. City of Phoenix, "Construction Permits and Planning," accessed March 12, 2026, <https://www.phoenix.gov/business/construction-permits-planning.html>
- xiv. City of Phoenix Planning and Development Department, "ShapePHX," accessed March 12, 2026, <https://www.phoenix.gov/administration/departments/pdd/tools-resources/shape-phx.html>
- xv. City of Phoenix Planning and Development Department, "Planning and Development Department," accessed March 12, 2026, <https://www.phoenix.gov/administration/departments/pdd.html>
- xvi. City of Scottsdale, "Permit Services," accessed March 12, 2026, <https://www.scottsdaleaz.gov/planning-development/permit-services>
- xvii. Pima County, Arizona, "Online Building Permits," accessed March 12, 2026, <https://www.pima.gov/1141/Online-Building-Permits>
- xviii. Pima County, Arizona, "Building and Site Development," accessed March 12, 2026, <https://www.pima.gov/992/Building-Site-Development>
- xix. *Shovels.ai*, accessed April 9, 2026, <https://www.shovels.ai/>
- xx. Common Sense Institute (CSI), qualitative interviews with builders and installers regarding the approval and permitting process, conducted by the authors, 2026.
- xxi. Hoen, Ben, et al. 2015. Exploring the Impact of Permitting and Local Regulatory Processes on Residential Solar Prices in the United States. National Renewable Energy Laboratory.
- xxii. Hoen, Ben, Joachim Seel, Galen Barbose, and Ryan Wiser. 2015. "Exploring the Impact of Permitting and Local Regulatory Processes on Residential Solar Prices in the United States." *Energy Policy* 78: 102–112. <https://doi.org/10.1016/j.enpol.2014.12.020>
- xxiii. Hsieh, Chang-Tai, and Enrico Moretti. 2019. "Housing Constraints and Spatial Misallocation." *American Economic Journal: Macroeconomics* 11 (2): 1–39.
- xxiv. Gabriel, Stuart, Edward Glaeser, and Joseph Gyourko. 2024. [UCLA working paper on approval times and housing development in Los Angeles]. UCLA Anderson School of Management.
- xxv. Longoria, Genaro, Muireann Lynch, Niall Farrell, and John Curtis. 2024. "The Impact of Extended Decision Times in Planning and Regulatory Processes for Energy Infrastructure." *Utilities Policy* 91: 101824.
- xxvi. Liscow, Zachary. 2025. "The Law and Economics of Permitting." *Journal of Economic Perspectives* 39, no. 1.
- xxvii. Bennon, Michael, Daniel De La Hormaza, and R. Richard Geddes. 2024. "A Hazard Analysis of Federal Permitting under the National Environmental Policy Act of 1970." *Journal of Regulatory Economics*.
- xxviii. Mayo, Stephen K., and Stephen M. Sheppard. 2001. "Housing Supply and the Effects of Regulation." *Journal of Housing Economics* 10 (2): 179–203.
- xxix. Quigley, John M., and Steven Raphael. 2005. "Regulation and the High Cost of Housing in California." *American Economic Review Papers & Proceedings* 95 (2): 323–328.
- xxx. Liscow, Zachary. 2025. "The Law and Economics of Permitting." *Journal of Economic Perspectives* 39, no. 1: 151–176.
- xxxi. Longoria, Genaro, Muireann Lynch, Niall Farrell, and John Curtis. 2024. "The Impact of Extended Decision Times in Planning and Regulatory Processes for Energy Infrastructure." *Utilities Policy* 90: 101824.
- xxxii. Bennon, Michael, and J. Paul Wilson. 2024. "A Hazard Analysis of Federal Permitting under the National Environmental Policy Act of 1970." *Journal of Regulatory Economics*.
- xxxiii. Maricopa County, Arizona, "Residential Solar Permits," accessed March 12, 2026, <https://www.maricopa.gov/6714/Residential-Solar-Permits>
- xxxiv. City of Phoenix Planning and Development Department, "SolarAPP+ Photovoltaic Plan Review," accessed March 12, 2026, <https://www.phoenix.gov/administration/departments/pdd/residential-building/resident-plan-reviews/solarapp-photovoltaic.html>