Material Dignity Implementation: The Coordination Architecture Connecting Structural Reform to Distributed Stewardship

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ABSTRACT

Chronic homelessness in the United States persists due to the absence of a specified coordination layer capable of making established institutional architectures operationally executable. This paper provides that layer by establishing the interface protocol between a federal master-tenant (the National Stability Utility) and private property hosts (stewards). This protocol governs assignment, verification, condition reporting, and vacancy management across a federally owned modular housing fleet. It defines the outcome measurement framework specifying the metric thresholds and tracking intervals required for authorized deployment scaling. The architecture orders an eight-step activation sequence constituting the causal chain from legal authorization through pilot deployment to national program. A comparative analysis across five international and domestic housing architectures grounds the institutional selection in evidence. The governance architecture encodes stabilization without control as a structural design constraint. The theoretical contribution is a new class of implementation science argument: coordinating macro-institutional reform with micro-operational distribution is the mechanism by which structural diagnosis becomes material relief at scale. This coordination remains a specifiable, sequenced, and measurable engineering problem.

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Contents

1. Glossary of Technical Terms

Accessory Dwelling Unit (ADU). A secondary residential structure built on the same lot as a primary residence. Typical conversions include a garage, a detached backyard cottage, or an above-garage unit. ADU-permissive zoning is the primary site eligibility criterion for ALMU placement in the Distributed Stewardship Network, because the land-use approval that enables an ADU also enables ALMU deployment without additional permitting.

Activation Sequence. The ordered series of legal authorizations, capital deployments, steward recruitments, and measurement milestones required to move material dignity infrastructure from documented blueprint to operational network.

Asset-Limited Modular Unit (ALMU). Factory-built, single-occupancy shelter structure (120–150 sq ft), federally owned, designed for deployment within residential neighborhoods at one unit per fifty homes. Federal ownership enables capital mobility: units relocate when stewards exit the program.

Auditable Infrastructure. Real-time sensor and verification network confirming unit conditions (smoke detection, plumbing function, structural integrity, utility service) and system-level outcome metrics, publicly accessible.

Buffer Stock. Surplus capacity maintained at levels exceeding immediate demand to absorb shocks without rationing. Applied to housing: the aggregate of deployable units the NSU holds available above current occupancy, preventing waitlist formation under demand spikes.

Community Land Trust (CLT). A nonprofit organizational model in which a community entity retains ownership of land in perpetuity while selling or leasing the structures on it, removing the land value from the resale price and preserving affordability across successive occupant generations without recurring public subsidy. CLTs address the supply-side affordability constraint at the neighborhood scale without requiring federal institutional authority.

Coordination Protocol. The operational interface specification between the NSU and the distributed steward network: unit assignment, occupancy verification, condition reporting cadence, vacancy notification, steward compliance monitoring, and capital redeployment authority.

Cybernetic Production. A continuous feedback loop in which real-time demand data triggers supply response before scarcity develops. This logic applies to food and clothing at industrial scale. The goal of the NSU is to extend it to shelter.

Data Desert. The documented absence of auditable outcome metrics in current homelessness expenditure. California's $24 billion in homelessness spending with no verifiable outcomes is the primary empirical reference (California State Auditor, 2024).

Dignity Barrier. The mechanical exclusion from economic and social participation caused by lack of access to hygiene infrastructure. Operates independently of housing status, motivation, or individual capacity (National Institutes of Health, 2024; Portland State University, 2024).

Distributed Stewardship Network (DSN). The operational architecture delivering ALMUs through property-owner stewards across stable residential neighborhoods, converting NIMBY to YIMBY through tax credits, ADU value appreciation, and federal liability coverage (Dear and Wolch, 1987; Jacobs, 1961; Texas Manufactured Housing Association, 2024).

Foundational Economy. The provision and regulation of everyday goods and services required for basic human functioning: housing, food, energy, care. The economic framework within which material dignity infrastructure operates (Foundational Economy Collective, 2018).

Higher Loss Absorbency (HLA). The discretionary income buffer maintained by middle-class households above survival costs. When structural decoupling of housing costs from median income exhausts this buffer, the system enters a brittle state (DiBella, 2026).

U.S. Department of Housing and Urban Development (HUD). The primary federal agency responsible for national housing policy, homelessness data collection through the Annual Homeless Assessment Report (AHAR), and administration of major federal rental assistance and community development programs.

Implementation Science. The study of methods for promoting systematic uptake of research findings into routine practice. Applied here: the specific coordination, measurement, and sequencing science required to activate architectures whose correctness is already established.

Material Dignity. The condition in which every individual has reliable access to the physiological prerequisites for economic participation: shelter, hygiene, nutrition. The shared target vocabulary of the prior papers in this series.

National Federation of Independent Business (NFIB). A small-business lobbying organization and named plaintiff in *NFIB v. Sebelius* (2012), the Supreme Court case that defined the constitutional limits of the Spending Clause compulsion doctrine and is the primary legal constraint on Spending Clause program design.

National Institutes of Health (NIH). The primary US federal biomedical research agency. NIH-funded research on hygiene access and employment barriers is the primary external empirical source for the Dignity Barrier mechanism documented in this paper.

National Stability Utility (NSU). The proposed federal institution functioning as master tenant over the nation's surplus shelter capacity, operating it on industrial rather than asset logic (Beer, 1972; Aalbers, 2016; Rolnik, 2019).

NIMBY/YIMBY Inversion. The conversion of neighborhood opposition (Not In My Back Yard) to shelter deployment into support (Yes In My Back Yard), achieved by providing positive economic externalities (tax credits, property value appreciation, liability coverage) to participating stewards and adjacent neighbors rather than imposing costs.

Price-to-Income Ratio (PIR). The ratio of median home price to median household income in a metropolitan area. A PIR above 6.5 indicates acute housing shortage and constitutes the primary demand-side eligibility criterion for NSU pilot geography selection in this paper. A PIR above 7.0 signals a rebalancing threshold at which the NSU deployment targets accelerate.

Reconstruction Finance Corporation (RFC). A federally chartered corporation operating from 1932 to 1957 that provided emergency capital to banks, agricultural institutions, and infrastructure projects during the Depression. The RFC's bond-issuance model, off-balance-sheet accounting structure, and multi-presidential longevity serve as the primary constitutional and operational precedent for NSU capitalization.

Spending Clause Mechanism. The constitutional authority by which Congress conditions federal funding on state adoption of specified program requirements (*South Dakota v. Dole*, 1987). The primary legal implementation pathway for non-discretionary threshold adoption across jurisdictions.

Tier 1 / Tier 2. The capability sequencing grounded in NIH and Portland State documentation (National Institutes of Health, 2024; Portland State University, 2024): Tier 1 (comfort stations providing hygiene access) is an operational prerequisite for Tier 2 (modular housing delivery). Capabilities are sequential, not simultaneous.

Universal Basic Income (UBI). A policy proposal providing unconditional cash transfers to all residents. Discussed in this paper as the comparative alternative to Universal Basic Services. The core structural objection to UBI for housing is that cash transfers into a market structurally incentivized to maintain scarcity produce higher rents rather than additional housing units.

Universal Basic Services (UBS). A policy framework providing essential services (housing, healthcare, transport, information, care) collectively rather than through cash transfers, on the grounds that direct service provision is more efficient than market-mediated purchasing power in sectors where the market structurally fails to produce adequate supply.

Valuation Trap. The structural condition in which building sufficient housing to meet human need is an act of financial self-destruction for the actors controlling supply, because housing abundance destroys the asset value on which their wealth depends (Aalbers, 2016; Christophers, 2023).

2. Introduction: Two Blueprints Without an Ignition

Housing is the only basic essential excluded from the cybernetic industrialization that made food and clothing universally abundant in the advanced industrial economy. Food and clothing achieved abundance through continuous feedback loops in which real-time demand data triggers supply response before scarcity develops (Beer, 1972; Wiener, 1948; Ashby, 1956). No grocery shelf is permitted to empty before restock is triggered, and overproduction is managed exclusively as buffer stock. Shelter followed a different trajectory because once housing became the primary vehicle for household wealth accumulation, the industrial requirements of modularity, interchangeability, and surplus became economic threats to the ownership class controlling supply (Aalbers, 2016; Rolnik, 2019). Producing housing at the velocity that would eliminate scarcity would simultaneously destroy the scarcity premium on which real estate assets depend. The Valuation Trap is the name for this structural condition, and it is documented in the behavior of every principal actor in the housing market. Homeowners, institutional landlords, banks, and municipalities each rationally defend scarcity because scarcity is their asset (Christophers, 2023). A National Stability Utility operating as master tenant over the nation's existing surplus shelter capacity would deploy that capacity on core industrial logic, bypassing the Valuation Trap by operating strictly outside the asset economy.[1]

Even where housing is provided, a mechanical precondition blocks the employment pathway independently of housing status, motivation, or individual capacity. The National Institutes of Health has documented that hygiene access functions as the primary employment barrier. Employers hold explicit and implicit biases against individuals unable to maintain hygiene standards, and these biases operate as structural exclusions rather than discretionary judgments (National Institutes of Health, 2024). Portland State University's research documents the psychological mechanism through which this barrier compounds. The absence of hygiene access produces shame, reduced self-efficacy, and social withdrawal that persist regardless of housing availability (Portland State University, 2024). This Dignity Barrier resolves only when hygiene infrastructure precedes housing placement in the deployment sequence, a sequencing that a Distributed Stewardship Network delivering Tier 1 comfort stations before Tier 2 modular housing placement structurally enforces across a geographically distributed network of property-owner stewards.[2]

[1] DiBella (2026b) develops a parallel derivation of the National Stability Utility mechanism through independent analysis of the housing financialization and cybernetics literatures, arriving at the same institutional architecture from the same external evidence base.

[2] DiBella (2026a) develops a parallel derivation of the Dignity Barrier and the Distributed Stewardship Network through independent analysis of NIH documentation, Portland State research, and the manufactured housing and spatial politics literature, arriving at the same capability sequencing architecture.

This paper specifies the coordination architecture necessary to execute verified institutional architectures. Before coordination can be specified, the underlying architecture must be selected on evidence. Following a comparative analysis of five international and domestic housing architectures against specific institutional failure modes, this paper defines the interface protocol connecting the National Stability Utility (a federal master tenant) to a Distributed Stewardship Network (private property hosts). This network operates Asset-Limited Modular Units (ALMUs)—federally owned, single-occupancy structures—deploying them under strict hygiene-first sequencing. The resulting architecture coordinates macro-institutional reform with micro-operational distribution, converting structural diagnosis into a measurable, eight-step engineering problem.

3. Structural Misallocation and the Capability Prerequisite

3.1 Housing and the Valuation Trap

The food and clothing sectors achieve universal abundance through cybernetic production, a continuous feedback loop in which real-time demand data triggers supply response before scarcity develops (Beer, 1972; Wiener, 1948; Ashby, 1956). A grocery shelf is never permitted to empty. The data system triggers replenishment before shortage occurs, and overproduction is absorbed as buffer stock rather than treated as a systemic failure. The same industrial logic governs pharmaceutical distribution, fast fashion logistics, and the global food supply chain, each of which maintains stability by sustaining constant surplus rather than managing precisely to demand.

Shelter remains the only basic essential excluded from this industrial trajectory, and the exclusion is structural rather than accidental (Aalbers, 2016; Rolnik, 2019). Once housing became the primary vehicle for household wealth accumulation in the postwar economy, the industrial requirements of modularity, interchangeability, and surplus became economic threats to the ownership class controlling supply. Producing housing at the velocity that would eliminate scarcity would simultaneously destroy the scarcity premium on which real estate assets depend. Christophers documents this behavior at industrial scale, demonstrating that institutional investors now control approximately 574,000 single-family rental homes in the United States, with firms using algorithmic pricing systems to synchronize rent increases across entire metropolitan markets, transforming local housing into a coordinated asset class in which no individual landlord breaks ranks by lowering prices to fill units (Christophers, 2023). The Valuation Trap is the name for this condition: building sufficient housing to meet human need is an act of financial self-destruction for the actors whose economic position depends on housing remaining scarce, and the market behaves exactly as this incentive structure dictates.

A National Stability Utility operating as master tenant over the nation's existing surplus shelter capacity would deploy that capacity on industrial rather than asset logic, bypassing the Valuation Trap by operating outside the asset economy entirely.[3] The categories of surplus are large and documentable: the nation possesses high-vacancy office towers as remote work has reduced urban office demand toward 25% vacancy in major gateway cities (U.S. Department of Housing and Urban Development, 2023), idle manufactured housing units and recreational vehicles sitting in industrial storage yards and private lots, and commercially vacant space sitting behind asset-preservation logic rather than absence of structural opportunity. The NSU deploys this capacity as buffer stock without requiring new construction, property acquisition, or engagement with the valuation trap's pricing mechanism, because it operates entirely within existing surplus rather than attempting to produce new supply through a market structurally incentivized to maintain scarcity. Auditable infrastructure consisting of real-time sensors, digital occupancy verification, and transparent operational metrics replaces the data desert that has permitted administrative opacity to substitute for outcome accountability across two decades of escalating homelessness expenditure.

3.2 The Dignity Barrier and the Capability Sequence

The Dignity Barrier is not a moral observation. It is a mechanical precondition operating independently of housing status, motivation, and individual capacity, documented by independent research from two separate institutional sources. The National Institutes of Health has established that hygiene access functions as the primary employment barrier: employers hold explicit and implicit biases against individuals unable to maintain personal hygiene standards, interpreting visible markers of hygiene deprivation as indicators of unreliability or reduced capacity regardless of actual skill or motivation, and these biases function as structural exclusions rather than individually variable discretionary judgments (National Institutes of Health, 2024). Homeless individuals identify lack of access to showers and clean clothing as the primary barrier to employment, ahead of transportation, childcare, and other factors commonly cited in service system assessments. Portland State University's research isolates the psychological mechanism through which this barrier compounds over time: the absence of sustained hygiene access produces shame, reduced self-efficacy, and social withdrawal that persist and amplify regardless of housing availability, creating a compounding psychological obstruction that is qualitatively distinct from inconvenience and that does not resolve automatically upon housing placement (Portland State University, 2024).[4]

[3] DiBella (2026b) develops a parallel derivation of the National Stability Utility mechanism through independent analysis of the housing financialization and cybernetics literatures, arriving at the same institutional architecture from the same external evidence base.

[4] DiBella (2026a) develops a parallel derivation of the Dignity Barrier and the Distributed Stewardship Network through independent analysis of NIH documentation, Portland State research, and the manufactured housing and spatial politics literature, arriving at the same capability sequencing architecture from the same external evidence base.

The Distributed Stewardship Network resolves this by establishing Tier 1 comfort stations as the unconditional, low-barrier entry point that must precede Tier 2 ALMU deployment. Comfort stations provide 24/7 access to showers, laundry, secure storage, a mailing address, and WiFi at a capital cost of approximately $300,000–$500,000 per station, serving 150–200 individuals daily at a coverage ratio of one station per 500 unhoused individuals. Federal ownership of Asset-Limited Modular Units deployed at one unit per fifty homes throughout stable residential neighborhoods enables capital mobility when stewards exit, enforces quality standardization across the network, clarifies maintenance accountability, and provides the federal liability coverage that makes steward participation economically rational through tax credits and ADU value appreciation rather than philanthropically motivated. The spatial distribution logic derives from Dear and Wolch's documentation that concentrating vulnerable populations in service-dependent districts creates self-reinforcing failure through formal surveillance replacing natural community oversight (Dear and Wolch, 1987), and from Jacobs's identification of residential density and "eyes on the street" as the informal governance mechanism that formal systems cannot replicate (Jacobs, 1961). Distribution at one unit per fifty homes embeds formerly homeless individuals within existing social fabrics rather than segregating them into concentrated districts.

4. Prior Interventions: Three Institutional Failure Modes

This analysis isolates three specific institutional failures whose persistence explains why substantial public expenditure has produced disproportionately poor outcomes. Any proposed correction must be evaluated strictly against these three problems, stripping away the diffuse goal of reducing homelessness that every prior program has claimed as its objective without achieving it at durable scale.

The first institutional failure is coordination. Federal, state, county, and municipal homelessness programs operate across independent data systems with incompatible eligibility criteria and competing administrative priorities, creating the condition in which an individual leaving a jail facility, a hospital emergency room, or a domestic violence shelter enters three entirely different intake pipelines with no shared record, no continuity of service information, and no sequencing logic connecting one system's output to the next system's intake. The absence of coordination does not stop at inefficiency. It actively undoes progress, as individuals who have stabilized within one program lose their standing when they transition to a context that has no knowledge of their prior status and restarts eligibility assessment from the beginning.

The second institutional failure is accountability. No major federal homelessness program conditions its continued appropriation on auditable outcome metrics, which produces the condition in which programs demonstrating no verifiable improvement in population-level outcomes continue receiving funding at the same level as programs that demonstrate measurable effectiveness, because the political cost of publicly defunding

a visible service exceeds the administrative cost of continuing to fund an invisible failure. California's State Auditor confirmed in 2024 that the state had disbursed approximately $24 billion in homelessness-related expenditure over five years without establishing the verifiable outcome metrics against which expenditure effectiveness could be evaluated, making it impossible to determine at the program level which interventions had produced housing stability and which had produced administrative activity without stable housing as the result (California State Auditor, 2024).

The third institutional failure is sequencing. Capabilities are deployed without ensuring that the prerequisites for their effectiveness are in place first, producing the pattern in which housing placements are made for individuals who cannot maintain tenancy because the hygiene access necessary for employment eligibility remains unresolved, employment programs are offered to individuals without stable addresses available to receive job correspondence, and medical service provision attempts recovery without the stable environment in which recovery is physiologically possible. The National Institutes of Health and Portland State University have independently documented that hygiene access functions as a prerequisite capability rather than an ancillary service: its absence prevents the employment pathway from opening regardless of housing status, motivation, or individual capacity (National Institutes of Health, 2024; Portland State University, 2024). Any architecture that delivers housing before resolving the Dignity Barrier will sustain the sequencing failure even when it corrects the coordination and accountability failures simultaneously.

The cumulative effect of these three institutional failures is a documented systemic mortality condition. The UCSF Benioff Homelessness and Housing Initiative has documented that individuals experiencing chronic homelessness in urban US settings die at a median age of 48 years, compared to 78 years for the general population, a 30-year life expectancy gap attributable directly to the shelter instability, healthcare exclusion, and employment deprivation that the three failure modes produce and compound across years of continued exposure (UCSF Benioff Homelessness and Housing Initiative, 2023). The cost trajectory of the existing infrastructure over the same period shows no stabilizing trend. Per-capita emergency shelter expenditure has risen continuously since 2010 while 12-month retention rates in the same facilities have remained below 40% throughout the period, producing a condition in which the system spends more every year to sustain the same level of failure (National Alliance to End Homelessness, 2024). The California State Auditor's documentation of $24 billion in expenditure over five years with no comprehensive data showing any measurable reduction in homelessness is not a California-specific finding but the benchmark illustration of the accountability failure operating at scale nationwide (California State Auditor, 2024). A system exhibiting rising unit costs, flat outcomes, a documented 30-year mortality premium, and no internal mechanism for responding to its own failure signals is not failing to optimize. It has lost the adaptive capacity required for self-correction. An

architecture that resolves all three institutional failure modes is not a policy preference competing with the existing system. It is the minimum institutional requirement the data demands.

The phenomenon is not confined to the continental United States. The Hawaii Statewide Office on Homelessness and Housing Solutions has operated the Kauhale Initiative since 2021, a culturally grounded network of permanent tiny-home villages rooted in the traditional Hawaiian concept of the *ohana* community, expanding to 24 sites and 918 active beds statewide by November 2025 and serving over 2,000 individuals across the program's operational history (HomeAid Hawaii, 2025). The model has received gubernatorial support, federal funding, legislative expansion authorization, and national media attention as a replicable template for culturally embedded homelessness response. No individual site publishes a retention rate, an employment transition rate, or a per-resident annual operating cost. A review by the *Honolulu Civil Beat* in April 2025 found that the Hawaii Department of Human Services lacked the records necessary to verify how millions of dollars in no-bid construction contracts had been spent, with a single contractor receiving over $37 million in sole-source awards without providing itemized documentation of how the funds were applied (Honolulu Civil Beat, 2025). The Hawaii Legislature responded not with program termination but with Act 309 (2025), which mandated a State Auditor performance audit, required quarterly expenditure reporting to the legislature, and imposed competitive bidding requirements for contracts above $1 million going forward (Hawaii State Legislature, 2025). The corrective statute confirms the finding: the original program architecture contained no internal mechanism for detecting its own fiscal irregularities, because no such mechanism was required of it. A program with four years of operating history, 24 sites, and hundreds of millions in public expenditure should present an audited retention rate, an employment transition rate, and a site-level cost report. The absence of those figures is not a documentation oversight. It is the accountability failure mode in operation in a program the system considers among its most successful.

The accountability failure mode does not terminate at unmeasured outcomes. At sufficient scale and sustained duration, the identical structural void that produces opacity predictably enables criminal fraud. Since 2020, federal prosecutors have charged nonprofit executives, developers, and shelter operators across multiple states with wire fraud, embezzlement, and money laundering in programs drawing on the same homelessness funding streams that produce no public outcome data. In California, the executive director of a South Los Angeles charity allegedly diverted over $23 million in homelessness funding across seven years of continuous contract renewal, including more than $5 million directly from the Los Angeles Homeless Services Authority, allegedly converting at least $10 million to personal use while the program received uninterrupted funding because no verification mechanism existed to detect the diversion (U.S. Department of Justice, 2026). In a separate case, the former chief financial officer of a Homekey-funded developer allegedly falsified bank records to secure approximately $26 million in state grants for a project that was never completed, with

funds allegedly misused through personal credit cards and a $46,000 monthly luxury rental (U.S. Department of Justice, 2025). A Los Angeles City Controller audit found approximately $2.3 billion in homelessness expenditure for which the verification infrastructure did not exist to confirm whether the contracted services were delivered at the claimed rate (Los Angeles City Controller, 2024). In Long Beach, the city's primary shelter contractor was terminated following a $69 million audit that identified ghost-tenant billing, a fraud vector that exists only when occupancy data is self-reported by the same operator receiving payment per occupied unit (Long Beach Post, 2024). Federal prosecutors described the California cases collectively as "the tip of the iceberg," an acknowledgment that in a system where fraud surfaces through whistleblowers and retrospective audits rather than continuous hardware-verified data, detected fraud represents a small and skewed sample of actual fraud. The NSU's auditable infrastructure closes each of these fraud vectors architecturally rather than prosecutorially: passive sensors confirm occupancy independently of operator reporting, capital release is gated on verified unit delivery, and every expenditure unit is indexed to a corresponding verified output unit on a public ledger. The current system cannot answer whether the funded services were delivered. The hardware answers this continuously and publicly.

These three failure modes define the evaluation standard for the comparative analysis that follows. An architecture that resolves two of the three represents partial improvement. An architecture that resolves all three represents the minimum institutional design requirement. The selection of which architecture to implement follows from which one resolves all three within the constraints of the US constitutional and institutional context.

5. Five Comparative Architectures

The international and domestic evidence base contains five architectures implemented at sufficient scale to produce evaluable outcomes across the three failure modes identified in the preceding section. Two address primarily the chronically unhoused population that has been without shelter for a year or more with a disabling condition. Three address primarily the broader structural affordability crisis affecting cost-burdened renters. Understanding this population segmentation is the first analytical requirement. A mechanism resolving the crisis for only a single population remains inherently incomplete; conflating the two populations in a single intervention strategy is itself a form of the sequencing failure this paper diagnoses.

5.1 Finland and the Y-Foundation Housing First Model

Finland implemented a national Housing First strategy in 2008 built around the Y-Foundation, a non-profit social housing provider that places individuals experiencing homelessness in existing private and municipal rental apartments distributed actively throughout the city, structurally bypassing purpose-built campus concentration (FEANTSA, 2022). Long-term homelessness declined by 68% between 2008 and 2022, while Helsinki reduced its shelter bed-spaces from approximately 600 in 2008 to 52 by 2019 through conversion of temporary shelter capacity into permanent tenancy (Pleace et al., 2022). Housing retention rates sustained at 80 to 90% across the program represent the strongest documented tenancy stability outcome for the chronically unhoused population in any national program of comparable duration. Annual savings to the broader public system per housed individual range from EUR 9,600 to EUR 15,000 through reduced emergency healthcare, criminal justice processing, and social service consumption, with some programme analyses documenting up to EUR 52,000 in avoided crisis intervention costs per person annually. The Y-Foundation's model is 80% scattered-site, placing individuals in existing residential neighborhoods throughout the city, and this spatial distribution is not incidental to the outcome but constitutive of it, as the embedding of formerly homeless individuals within functioning residential social networks produces the natural surveillance, interpersonal accountability, and gradual reintegration that campus-concentrated models cannot replicate (Dear and Wolch, 1987; Jacobs, 1961).

The Finnish model addresses all three institutional failure modes. Coordination is achieved through a unified national Housing First protocol integrating the Ministry of the Environment, municipalities, and non-profit operators under a single program standard with shared definitions and reporting requirements. Accountability is achieved through annual national homelessness counts tracked against stated reduction targets with public reporting. Sequencing is addressed through unconditional housing placement followed by support service provision that the Finnish welfare infrastructure makes available without the programmatic gaps characteristic of the decentralized American social service context.

US transferability is constrained strictly by infrastructure availability. Finland's population is approximately 5.5 million. The United States population is 335 million, representing a 60-fold difference in the institutional scale required to replicate the model nationally. The Y-Foundation holds approximately 17,000 apartments after 35 years of operation in a nation of 5.5 million, making it large enough to anchor a national program at Finnish population scale. The Champlain Housing Trust in Burlington, Vermont, the largest Community Land Trust in the United States, holds approximately 3,000 units after 40 years of operation in a metropolitan area of 200,000 people, representing the current ceiling of non-profit housing organization at US scale. No US non-profit housing organization exists at anything approaching Y-Foundation density relative to the national chronically unhoused population. The Finnish model further depends on an integrated social service infrastructure for mental health, addiction treatment, and employment support that operates as a coherent system available to newly housed individuals without the programmatic fragmentation that characterizes the American context. The Finnish model validates the principle of unconditional Housing First and the spatial distribution logic of scattered-site placement while failing to provide a transferable operational mechanism for a nation without the non-profit housing capacity or integrated social service architecture its implementation requires.

5.2 Japan and the By-Right National Zoning Model

Japan's national Land Use Planning Act establishes approximately twelve broad zoning categories and sets building standards at the national level, limiting municipalities' authority to block development that complies with national standards and thereby preventing the NIMBY-driven supply restriction that characterizes most American and European housing markets (Bertaud, 2018). The result in the greater Tokyo metropolitan area has been consistent annual housing construction of 130,000 to 140,000 new units throughout the 2010s, a housing stock that has exceeded the household count since the early 2010s, and real rents that remained stable or declining from the early 1990s through 2022 before modest upward pressure from rising construction costs and inflation began appearing in central wards (Glaeser, 2011). Glaeser's analysis documents supply restriction as the primary mechanism producing housing cost crises in otherwise high-productivity urban economies, and the Tokyo evidence over three decades represents the most sustained empirical validation of the supply deregulation hypothesis available in any major global city. Minneapolis enacted a comparable domestic experiment through its 2040 Plan, which eliminated single-family zoning citywide effective January 2020 and produced a documented reduction in rent growth relative to comparable cities, providing US-context evidence that zoning reform at the city scale produces measurable affordability effects within a five-year window (Mast, 2023).

Japan's internal evidence simultaneously confirms that the supply deregulation model does not reach the chronically unhoused population. Japan's historical yoseba districts, including San'ya in Tokyo, Kotobuki-

cho in Yokohama, and Kamagasaki in Osaka, document persistent chronic homelessness concentrated among former day laborers who fell outside the formal labor market following the 1990 economic bubble collapse and cannot re-enter the rental market regardless of the general affordability level, because they lack the income documentation, rental history, credit record, and social references that market participation requires. Resolution of chronic homelessness in Japan depends on the national livelihood protection system rather than on housing market dynamics. Abundant affordable housing supply effectively reduces the cost-burdened renter population and prevents the scarcity premium that drives families into financial precarity, but it does not rehouse individuals whose exclusion from the market operates on factors upstream of price.

5.3 Community Land Trusts and the Champlain Housing Trust Model

Community Land Trusts remove land from the speculative market permanently through a trust structure that sells improvements at below-market prices while retaining the land in community ownership, with resale formulas that typically return the homeowner's initial equity contribution, principal paid, the value of approved capital improvements, and 25% of any appreciation, while the trust retains 75% of appreciation to subsidize the next income-eligible buyer (Davis, 2010). The Champlain Housing Trust has sustained a foreclosure rate consistently below market averages across economic cycles including the 2008 financial crisis, produces documented wealth building for residents within the equity formula constraints, and demonstrates that the structural permanence of affordability can survive across multiple resale generations without requiring repeated public subsidy on each property transfer. The model addresses the accountability failure at the organizational level effectively, maintaining internal outcome tracking and demonstrating sub-market foreclosure rates as a structural stability metric.

The Community Land Trust model's limitation for the emergency problem of chronic homelessness operates entirely on the operational timeline. The Champlain Housing Trust reached approximately 3,000 units over 40 years in a metropolitan area of 200,000 people after merging with another organization to accelerate its growth. Scaling this rate to the US chronically unhoused population would require a timeline incompatible with the urgency of the problem. More decisively, CLTs serve income-eligible households who can participate in a standard application and purchase or rental process, which requires income documentation, credit history, and the basic administrative eligibility that the chronically unhoused population cannot provide before the Dignity Barrier is resolved. Community Land Trusts represent the correct long-run preservation mechanism that prevents the displacement of individuals who have been stabilized into employment and are transitioning into the market, functioning as the permanent affordability infrastructure that sits at the far end of the capability sequence rather than at its beginning.

5.4 Manufactured Housing Deregulation

Housing built to the HUD Code, the federal construction and safety standard governing factory-built residential units under 24 CFR Part 3280, costs approximately $78.60 per square foot for single-section units and $86.71 per square foot for multi-section units, compared to an average of $168.86 per square foot for site-built single-family construction, representing a cost ratio that makes factory production the most affordable new housing mechanism available at industrial scale within the existing US regulatory framework (Texas Manufactured Housing Association, 2024). The industry produced 103,314 units in 2024, a 16% increase from 2023, demonstrating that production capacity is responsive to demand signals and can scale from the current output level (Mesocore Industry Analytics, 2024). The HUD Code preempts local building construction standards, providing a federal baseline that standardizes safety and habitability requirements across all manufactured housing regardless of where it is deployed.

The HUD Code does not preempt local zoning, which is the constitutional barrier that limits manufactured housing deregulation as a standalone strategy. Municipalities restrict manufactured housing to purpose-built manufactured home parks through zoning ordinances that operate under state enabling statutes, and these ordinances cannot be overridden by federal building code action because zoning authority resides at the state and municipal level under the constitutional framework. A federal policy that deregulates the HUD Code cannot compel any municipality to permit manufactured housing in standard residential zones, so manufactured housing deregulation faces the same local political resistance as any other housing type seeking placement in established residential neighborhoods. Separately, manufactured housing on leased land structurally depreciates, creating long-term wealth gaps for residents that limit its effectiveness as a permanent stabilization mechanism. What the manufactured housing evidence does establish is the production cost and scaling capacity of the factory-built housing supply chain, confirming that the Asset-Limited Modular Unit component of the distributed stewardship architecture is industrially feasible at the cost ranges the manufactured housing industry has documented (Texas Manufactured Housing Association, 2024), because the factory-built housing supply chain already operates at the required production scale and cost point.

5.5 Community First! Village, Austin, Texas

Community First! Village, operated by Mobile Loaves and Fishes in Austin, Texas, is the most directly relevant existing US proof point for evaluating the distributed stewardship approach because it operates on the same population (HUD- defined chronically homeless individuals), at a documented scale, with verifiable outcome metrics, in the current US regulatory and funding environment. The village currently houses approximately 500 residents on a 51-acre campus with plans to expand to 1,900 across 178 acres,

requiring that residents meet the HUD chronic homelessness definition, have a verifiable income source, and pass a criminal background check. The documented housing retention rate of 85 to 88% is the strongest reported figure for a comparable US chronic homelessness intervention and substantially exceeds the sub-40% retention typical of emergency shelter models (Texas Tribune, 2024). Residents collectively earned $1.5 million in 2023 through the on-site Community Works program in roles including farming, artisan production, hospitality, and automotive services, demonstrating that economic participation capacity exists within the chronically unhoused population when the barriers to that participation are structurally resolved. The operating subsidy runs approximately $25,000 per resident annually, including housing, services, and program operations, with residents partially offsetting costs through monthly rent of $225 to $500 depending on unit type.

Two specific features of Community First! Village are directly material to this paper's comparative analysis. First, communal hygiene infrastructure including showers, laundry, and sanitation facilities is embedded throughout the campus, functioning as a de facto Tier 1 hygiene access layer even without a formal pre-housing sequencing protocol, because the campus design ensures that hygiene access and housing placement co-occur from the resident's first day. This operational structure confirms from US data that hygiene access is a functional component of successful stabilization for this population, consistent with the Portland State and NIH documentation of hygiene as a prerequisite employment barrier, and validating the Dignity Barrier sequencing argument through a proof point that does not depend on the prior papers in this series for its evidentiary weight (Portland State University, 2024; National Institutes of Health, 2024). Second, the campus concentration model draws a specific documented critique from investigators and policy analysts: locating 500 and eventually 1,900 individuals in a gated community on the outskirts of Austin restricts access to mainstream employment centers, transit networks, and the social integration with the general population that enables the employment transition pathway to function (Texas Tribune, 2024). The scattered-site model that produces Finland's superior outcomes, and that the Y-Foundation implements through 80% dispersed residential placement, addresses this critique by embedding formerly homeless individuals within the existing urban fabric where natural employment networks, transit access, and social accountability operate without requiring a managed campus environment. Community First! Village is therefore best understood not as a competing model to the distributed stewardship architecture but as the campus- concentrated version of the same logic, validating the retention target and sequencing mechanism from US operational data while simultaneously demonstrating through its own documented limitations why spatial distribution is the design feature that dictates structural economic integration.

6. What the Evidence Selects: A Conditional Conclusion

The comparative analysis of five housing architectures against three specific institutional failure modes produces a finding with two components that must be stated precisely, because conflating them generates the wrong policy response and because intellectual honesty requires stating the conditions under which this conclusion would require revision.

The first component of the finding concerns the cost-burdened renter population, approximately 7 million households in the United States spending more than 30% of income on housing and therefore classified as housing-cost-burdened under HUD definitions. This population faces a structural supply constraint that market deregulation effectively resolves, as demonstrated by three decades of stable rents in Tokyo through by-right construction at scale, by Minneapolis 2040's documented rent moderation within five years of zoning reform, and by Houston's construction volume response to lot-size deregulation. Community Land Trusts provide the long-run preservation mechanism that prevents the affordability gains from deregulation from being recaptured by asset appreciation in subsequent market cycles. Neither supply deregulation nor CLT capitalization requires a new federal institution, and both operate through legal and market structures that exist within the current US constitutional framework. The combination of supply deregulation at the state and municipal level with CLT capitalization at the metropolitan level represents the sufficient and minimum architecture for the cost-burdened renter population, and any paper proposing a more institutionally complex solution for this population must demonstrate why the simpler mechanism that has worked in comparable contexts is insufficient.

The second component of the finding concerns the chronically unhoused population, approximately 180,000 individuals meeting the HUD definition of one or more years of continuous homelessness or four or more episodes within three years, with a disabling condition (U.S. Department of Housing and Urban Development, 2023). This population cannot access market housing at any price level, because the barriers they face operate upstream of the market in the domain of document availability, rental eligibility, credit history, and the resolution of the physiological and psychological effects of long-term street exposure that prevent any market transaction from being completed regardless of the price at which a unit is offered. The Finnish model confirms that this population can be housed with 80 to 90% retention through unconditional placement with follow-on support provision, sustained across fourteen years of program operation. The Finnish model further depends on an integrated social service infrastructure for mental health, addiction treatment, and employment support that operates as a coherent system. This system does not exhibit the programmatic fragmentation characterizing the American context. Newly housed individuals benefit from it without eligibility barriers or service gaps. Community First! Village confirms from US operational data that 85 to 88% retention is achievable for this population and that embedded hygiene infrastructure

is a functional component of successful stabilization, while the campus concentration critique confirms that spatial distribution rather than campus concentration is the design principle that enables economic integration rather than stabilized presence alone. The Tokyo, Minneapolis, and CLT models do not reach this population through their primary mechanisms, as the Japanese yoseba evidence and the CLT eligibility structure each confirm.

The evidence therefore selects the distributed stewardship model as the minimum institutional architecture for the chronically unhoused population strictly because it is the mechanism that resolves all three institutional failure modes within the existing US legal and institutional context, that is validated by the Finnish principle of unconditional Housing First and scattered-site spatial distribution, that is validated by Community First! Village's US retention data and hygiene sequencing evidence, and that operates through federal constitutional authority that does not require overriding state or local zoning jurisdiction. The NSU-to-steward coordination protocol resolves the coordination failure by creating a single operational interface connecting federal asset management to distributed local delivery. The auditable infrastructure measurement system resolves the accountability failure by producing verified outcome metrics in continuous real time. The Tier 1 hygiene access prerequisite resolves the sequencing failure by ensuring that the Dignity Barrier is cleared before any housing placement is made, a sequencing that Community First! Village implements structurally through campus design even without a formal protocol and that Finland implements implicitly through the social service availability its welfare system provides.

Two conditions would require this conclusion to be revised. If a national non-profit housing coalition were capitalized at sufficient scale to replicate the Y-Foundation's scattered-site model across US metropolitan areas without a federal master-tenant institution, the NSU capitalization layer would become unnecessary and the simpler non-profit coordination model would be preferable on grounds of institutional simplicity. If state-level ADU legislation and manufactured housing zoning reform proceeded at sufficient pace to produce below-market units accessible to chronically unhoused individuals without the lease eligibility barriers that currently exclude them from the market, the federal ALMU fleet would be redundant. Neither condition presently obtains in the empirical record, and this paper does not presuppose that neither will ever obtain, but it proceeds exclusively from conditions that currently exist. The distributed stewardship model is therefore the minimum institutional architecture available that combines full comparative validation with an implementation pathway within existing US legal authority, and the operational specification that follows in the remaining sections derives directly from this evidence-grounded selection.

7. The Coordination Protocol: NSU-to-Steward Interface

The NSU and the Distributed Stewardship Network are currently two independent blueprints with no specified connection. The coordination protocol closes that gap. It defines the operational interface across six functional domains: assignment, verification, reporting, vacancy management, compliance, and capital redeployment. Without this specification, the two systems remain fundamentally disconnected despite sharing a problem domain.

7.1 Unit Assignment

The NSU maintains a dynamic inventory of available ALMUs, indexed by metropolitan area, steward property, and unit condition status. Resident matching follows a needs-based priority queue drawn from Tier 1 comfort station engagement rosters. The sequence is: (1) individual clears the Dignity Barrier through documented Tier 1 engagement, (2) case worker confirms stabilization eligibility through functional assessment (not behavioral prerequisites), (3) NSU assignment system matches available ALMU to resident based on proximity to employment centers, transit access, and existing social network geography, (4) assignment confirmation transmitted simultaneously to the steward, the resident, and the auditable infrastructure log.

No centralized personal database is created at the NSU level. The assignment record contains unit identifier, assignment date, and functional eligibility confirmation. It does not contain identity, immigration status, health history, or case notes. Those remain with the originating Tier 1 service provider under bilateral data governance.

7.2 Occupancy Verification

Each ALMU carries embedded sensors confirming active occupancy: door contact, utility consumption baseline, and temperature maintenance. Sensor data transmits to the NSU operational dashboard at 24-hour intervals. Occupancy confirmation requires two of three indicators active. A unit registering zero activity across all three indicators for 72 consecutive hours triggers an automated welfare check request to the steward and the originating Tier 1 provider.

Verification operates on aggregate unit-condition data. It confirms structural occupancy and infrastructure function exclusively, architecturally prohibiting behavioral surveillance within the unit.

7.3 Condition Reporting

Stewards submit a monthly condition report through the NSU digital platform covering four mandatory domains: structural integrity, utility service continuity, exterior maintenance compliance, and resident interaction log (date of steward-resident contact, no content). Reports are timestamped and stored in

the auditable infrastructure log. Non-submission triggers a 14-day cure notice. A second non-submission within a 90-day window initiates compliance review.

The NSU conducts quarterly physical inspections of a randomly selected 15% of the active ALMU fleet. Inspection findings are published in the public-facing operational dashboard. This converts physical condition from an asserted standard to a verified and documented one, directly addressing the data desert that has sustained administrative opacity in existing programs (California State Auditor, 2024).

7.4 Vacancy Management

When a resident exits a unit (voluntarily, through employment-driven transition to market-rate housing, or through program discontinuation), the steward notifies the NSU within 48 hours. The NSU initiates a vacancy-to-assignment cycle with a target closure window of 21 days. Units remaining vacant beyond 45 days trigger an NSU-level review to determine whether the unit should remain with the steward or be redeployed to a higher-demand metropolitan area.

The vacancy-to-assignment cycle is the primary mechanism by which the buffer stock logic of the NSU framework is maintained at the unit level. A unit sitting vacant is a failure of the cybernetic feedback loop: the system has unmet demand and undeployed supply simultaneously. The 21-day target closure window is the operational enforcement of the industrial consumable logic.

7.5 Steward Compliance and Suspension

Three tiers of steward status govern program participation:

Status	Trigger Condition	NSU Response
Active	All reporting current; inspection passed	Full tax credit (See Sec. 11); federal liability coverage active
Probationary	Missed report or minor inspection deficiency	60-day cure period; tax credit suspended pending resolution
Suspended	Repeated non-compliance or resident welfare violation	Unit redeployment; steward removed from program; tax credit recaptured

Suspension triggers immediate ALMU redeployment. The unit moves to a new steward property within the same metropolitan area, or to a higher-demand area if local steward capacity is saturated. Federal ownership of the unit is the mechanism that makes this redeployment possible without capital loss or legal dispute: the NSU owns the asset. The steward hosts it.

7.6 Capital Redeployment Authority

The NSU holds redeployment authority over the full ALMU fleet based on two triggers: steward suspension (addressed above) and metropolitan demand rebalancing. Demand rebalancing occurs when a metropolitan area's PIR crosses 7.0 (indicating acute shortage) while another area's NSU waiting list drops below 30-day fill time. The NSU may authorize fleet redeployment of up to 15% of any metropolitan cohort per quarter to address inter-metropolitan demand asymmetries.

This redeployment authority is the industrial fleet logic applied to housing. A national food distributor routes supply to where shortfall signals are strongest. The NSU applies identical logic to the ALMU fleet. Capital mobility across metropolitan boundaries is the capability that fixed-site shelter construction cannot replicate, and it is the feature that establishes the NSU strictly as a unified national program.

8. The Measurement Framework: What Auditable Infrastructure Proves

The auditable infrastructure proposed in the NSU framework and the outcome tracking defined in the distributed stewardship architecture are both preconditions for program credibility and scale authorization. Neither prior paper defines the measurement instrument: what is tracked, at what interval, against what baseline, and at what threshold a result authorizes the next deployment scale. This section provides that instrument.

Measurement operates across three tiers corresponding to three levels of the program architecture. Unit-level conditions confirm the physical integrity of the delivery infrastructure. Individual-level outcomes validate the model's effectiveness for residents. System-level indicators generate the evidence base for scale decisions. All three tiers feed the public-facing operational dashboard, converting administrative opacity into real-time accountability.

8.1 Unit-Level Conditions

Unit-level measurement is the most technically immediate tier. Each ALMU carries five sensor categories:

Table 1. Unit-Level Condition Monitoring: Sensor Categories and Thresholds

Sensor Category	What It Confirms	Alert Threshold
Smoke / CO detection	Life safety systems operational	Immediate alert on trigger
Temperature monitoring	Habitability (not below 60°F, not above 90°F)	2-hour sustained breach
Utility consumption baseline	Plumbing and electrical service active	48-hour zero-consumption reading
Door contact sensor	Unit accessible and in use	72-hour inactivity
Structural integrity	Foundation and roof seal (annual sensor calibration)	Calibration failure

Sensor data aggregates at the NSU operational dashboard. Each unit's condition status displays publicly as a green/amber/red indicator: green (all systems confirmed), amber (minor alert active, steward notified), red (welfare check triggered or unit offline pending repair). This three-state public display converts the management of thousands of individual units into a legible national infrastructure scorecard. A program with 94% green-state units across the fleet demonstrates operational integrity in one number. California's

$24 billion stands in direct comparison: no equivalent verifiable number exists (California State Auditor, 2024).

8.2 Individual-Level Outcomes

Individual-level measurement tracks the model's effectiveness claim: that the dignity-first sequential deployment produces better employment, health, and stabilization outcomes than existing interventions at lower cost. Three measurement intervals apply.

Table 2. Individual-Level Outcome Tracking: Metrics, Intervals, and Pilot Targets

Metric	Definition	Interval	Pilot Target
Tier 1 uptake rate	% of enrolled individuals using comfort stations ≥3x/week	30 days	>80%
Tier 2 placement rate	% of Tier 1 participants placed in ALMU	90 days	>65%
Stabilization duration	Months of continuous ALMU occupancy	12 months	Median >8 months
Employment transition	% of residents entering paid employment	12 months	>30%
Healthcare use	Change in emergency department visits vs. pre-program baseline	12 months	>25% reduction
Criminal justice contact	Change in arrest and incarceration rates vs. baseline	24 months	>35% reduction
Market-rate housing reentry	% of residents transitioning to independent housing	36 months	>15%

Employment transition at 30% and above constitutes the primary validation threshold for the Dignity Barrier hypothesis. The empirical grounding derives from Portland State's documentation that hygiene access enables professional presentation, restores self-efficacy, and serves as the gateway to further service

engagement (Portland State University, 2024). If employment transition falls below 20% at 12 months across a pilot of 500 residents, the Tier 1 design requires revision before scale authorization proceeds.

Measurement is anonymous and aggregated at the program level. Cohort-level tracking (residents enrolled in a given quarter) generates the statistical outcomes without requiring a surveillance-grade individual longitudinal database.

8.3 System-Level Indicators and Scale Triggers

System-level measurement translates pilot outcomes into the evidence base for scale authorization decisions. Four indicators govern this translation.

Table 3. System-Level Indicators and Scale Authorization Thresholds

Indicator	Interval	Scale Threshold	Authority if Met
Network retention rate	Monthly	>72% at 12 months	Authorizes 10× fleet expansion
Net cost delta vs. status quo	Quarterly	Savings >$10,000/person/year demonstrated	Authorizes next capital tranche
Metro PIR trend	Monthly	Pilot metro PIR stabilization or decline	Confirms demand-side validation
Comfort station coverage	Weekly	Below 1 station per 500 unhoused	Automated infrastructure deployment alert

The 72% retention threshold at 12 months is the primary scale gate. It is calibrated against the documented Community First! Village retention rate of 85–88% across multi-year residency (Texas Tribune, 2024) as the established operational benchmark. A conservative 13-percentage-point discount is applied for initial program deployment, acknowledging that early-phase conditions are less optimized than a mature operational site. The pilot target of 85% stated in Section 11 represents the expected mature-operation level; the 72% gate is the authorization floor that must be cleared before scale proceeds. Emergency shelter retention below 40% is the negative baseline the model must surpass by a documented margin.

PIR stabilization in the pilot metropolitan area constitutes demand-side validation: the NSU's buffer stock logic is functioning as a macro-level affordability anchor. If pilot-area PIR continues to rise despite NSU deployment at the pilot scale, the surplus activation strategy requires recalibration before regional expansion.

9. The Activation Sequence

The activation sequence is the ordered series of decisions and deployments that transforms the NSU blueprint and the stewardship architecture from documented proposals into a functioning national program. Eight steps constitute the sequence. They operate as an obligatory causal chain: each step creates the conditions required for the next. Executing them out of order produces the failures that have characterized prior housing interventions.

9.1 Step 1: Legal Authorization (The Spending Clause Pathway)

South Dakota v. Dole (1987) establishes that Congress may condition the receipt of federal funds on state compliance with specified program requirements, provided the condition is unambiguous, related to the federal interest in the program, and does not violate constitutional rights (South Dakota v. Dole, 1987). This precedent is the implementation pathway. No constitutional amendment is required. No new enumerated power is invoked.

Federal homelessness and housing assistance funding is conditioned on state adoption of three standards: (1) NSU operational protocol compliance, (2) Tier 1 infrastructure deployment at the specified coverage ratios before any Tier 2 deployment, and (3) submission of outcome data to the NSU auditable infrastructure dashboard. The relevant funding streams include HUD's Emergency Solutions Grants, Continuum of Care, and HOME Investment Partnerships (HOME) programs.

States that adopt the standards receive full federal allocation plus a 15% program bonus drawn from documented cross-system savings capture. States that decline retain their current allocation levels without bonus. No state funding is withdrawn. The incentive is additive. This structure satisfies *Dole*'s "germaneness" requirement (the condition directly relates to the federal housing program interest) and avoids the coerciveness threshold the Supreme Court identified in *NFIB v. Sebelius* (2012).

9.2 Step 2: Capitalization (The RFC Model)

The Reconstruction Finance Corporation (1932–1957) provides the constitutional and operational precedent for NSU capitalization. The RFC was a federally chartered corporation authorized to borrow in its own name, lend and invest in infrastructure priorities, and operate off the annual appropriations cycle (Jones, 1951). At peak operation it deployed $40 billion (approximately $850 billion in 2026 terms) without requiring Congress to appropriate funds unit-by-unit or year-by-year.

The NSU replicates this structure. Congress authorizes a federally chartered National Stability Utility Corporation with authority to issue NSU bonds backed by federal guarantee, enter master lease agreements

with property owners of surplus capacity, procure ALMUs through bulk manufacturing contracts, and operate a revolving capital account replenished by cross-system savings capture payments from participating states.

The bond-backed capital structure removes the NSU from the annual budget cycle, which is the primary political attack surface for programs of this kind. Once the initial authorization passes, the program's capital continuity depends on bond market performance and cross-system savings capture, not on annual appropriations votes. This is the RFC's durable operating characteristic, and it is what made the RFC infrastructure last twenty-five years through five presidential administrations.

9.3 Step 3: Pilot Geography Selection

Pilot geography selection operates strictly against five measurable criteria:

Table 4. Pilot Geography Selection Criteria

Criterion	Why It Matters	Threshold
Metropolitan PIR	High PIR confirms acute shortage against the historic 4.0 national median baseline	PIR > 6.5
Existing Tier 1 infrastructure	Comfort stations must be operational before ALMU deployment	≥1 station per 500 unhoused, or committed deployment within 90 days
State-level Spending Clause adoption	Federal funding conditionality must be accepted	State agreement signed pre-pilot
ADU-permissive zoning	Steward property eligibility depends on local land use permitting	>60% of target neighborhoods ADU-enabled
Employment center proximity	Market-rate housing reentry and employment outcomes depend on access	Median commute to major employment center <45 minutes

Austin, Texas and the Gainesville/Jacksonville corridor in Florida represent geographies already validated in the primary literature as operational proof points for related models (Texas Tribune, 2024; Portland State

University, 2024). Both satisfy the ADU and PIR criteria. Both have existing comfort station or hygiene infrastructure that can be scaled to Tier 1 standard within the 90-day pre-deployment window.

9.4 Step 4: Tier 1 Pre-Deployment

Tier 1 infrastructure must be fully operational for a minimum of 90 days before the first ALMU placement in any metropolitan area. The hygiene access sequencing requirement is strictly mandatory on operational grounds, as the NIH and Portland State documentation establishes independently.

The evidence: hygiene access is the mechanical precondition for employment elgibility. An individual placed in an ALMU without prior Tier 1 engagement has not cleared the Dignity Barrier. The ALMU placement supplies shelter while failing to provide the capability sequence that makes shelter economically functional. Programs that place individuals in housing without resolving the Dignity Barrier prior to placement consistently underperform on employment transition metrics (National Institutes of Health, 2024; Portland State University, 2024).

The 90-day Tier 1 pre-period serves two functions: (1) it ensures that a resident queue exists of individuals who have already demonstrated Tier 1 engagement and are ready for Tier 2 placement at day one of ALMU deployment, and (2) it generates 90 days of pre-placement baseline data against which post-placement employment and health outcomes can be measured. Without the baseline, the measurement framework cannot confirm the model's cost claims.

9.5 Step 5: Steward Recruitment and Vetting

The recruitment of distributed stewards operates in parallel with the 90-day Tier 1 pre-deployment window. The YIMBY inversion mechanism (tax credits, property value appreciation, and federal liability coverage) is targeted exclusively at property owners in historically stable, ADU-enabled neighborhoods. Vetting requires spatial clearance confirming proximity to employment and transit, insulating the ALMU network entirely from concentrated service corridors.

9.6 Step 6: Baseline Measurement

Before the first unit is deployed, Gate 0 requires the collection of baseline cost and utilization data for the target population from the state. This establishes the zero-point for individual outcomes and systemic cost comparison.

9.7 Step 7: Post-Placement Measurement

The program tracks the functional performance of the fleet across four measurement intervals. Each gate directly conditions continued deployment on demonstrated systemic outcomes.

Table 5. Activation Gates and Authorization Conditions

Gate	Timeline	Minimum Condition	Scale Authorization
Gate 0	Pre-deployment	Tier 1 operational; baseline data collected; state agreement signed	ALMU deployment authorized
Gate 1	90 days	Tier 1 uptake >80%; ALMU placement rate >65% of available units	Continue Phase 1 deployment
Gate 2	12 months	Retention >72%; employment transition >30%; net cost savings documented	10× fleet expansion authorized
Gate 3	24 months	Net savings >$10,000/person/year confirmed; PIR trend stabilizing	Regional expansion authorized; next capital tranche released
Gate 4	36 months	Full outcome battery confirmed; market reentry >15%	National program authorization

9.8 Step 8: Scale Authorization Triggers

Gate 2 is the primary scale authorization trigger. A 12-month retention rate above 72%, combined with documented net cost savings, produces the bipartisan argument both progressive and conservative constituencies can support: this program costs less and produces better outcomes than the status quo. That argument does not require moral consensus on housing rights. It requires only a spreadsheet. This is the political logic that makes the fiscal efficiency framing strategically superior to rights-based advocacy.

10. The Scaling Logic: Evidence-Based Expansion

The activation sequence produces a working pilot. The scaling logic transforms a working pilot into a national program. These are not the same operation. A pilot demonstrates proof of concept at manageable risk. A national program requires a capital deployment doctrine, a steward recruitment pipeline, and a political strategy that operates independently of which administration is authorizing the next tranche.

The scaling ratio is 10× per gate: 500 units to 5,000 (Gate 2), 5,000 to 50,000 (Gate 3), 50,000 to 500,000 (Gate 3-to-4 proportional step). Gate 4 authorizes national deployment targeting the full 650,000-person unhoused population (U.S. Department of Housing and Urban Development, 2023), which exceeds the strict 10× ratio from Gate 3 and represents the terminal deployment authorization calibrated to actual population need rather than a proportionate expansion step. Each 10× step requires:

1. **Capital tranche release.** NSU bond authority expands proportionally. RFC precedent demonstrates that federally guaranteed bond structures can scale from $855 million (pilot) to $8.55 billion (regional) without requiring new congressional authorization each time, provided the expansion falls within the original statutory authority ceiling (Jones, 1951).

2. **Steward recruitment pipeline.** Each 10× scale requires 10× the number of qualified stewards. Recruitment operates through two channels: direct outreach to ADU-permitted property owners through municipal housing departments, and referrals from existing stewards. The YIMBY inversion mechanism (tax credits, ADU value appreciation, federal liability coverage) is the marketing argument. Pilot retention data is the close: stewards who have seen the model function in their neighborhood are the recruitment network for the next geography.

3. **Comfort station infrastructure preceding ALMU deployment.** Each new metropolitan area entering the program at regional expansion must satisfy Gate 0 conditions before its first ALMU placement. The national comfort station network scales in parallel with, and 90 days ahead of, the ALMU fleet.

4. **Outcome data continuity.** The measurement framework generates a public cost-effectiveness comparison that improves with each scale step. At 5,000 units, the program has 12-month outcomes for 500 residents. At 50,000 units, it has outcomes for 5,000. The evidence base grows faster than skepticism can outpace it, because the fiscal argument is documented in the same audit format that generated support for Gates 2 through 4.

The political economy of scaling exploits the fiscal proof at each gate. Gate 2 produces the first documented net savings figure. That figure is the bipartisan argument: a conservative reading (the program costs less than

the status quo) and a progressive reading (the program houses more people more effectively than existing interventions) both derive from the same number. The fiscal efficiency framing directly operationalizes the moral case in the language of budget committees.

11. The Fiscal Architecture

The financial case for material dignity infrastructure is established in prior work. Street homelessness generates $30,000–$50,000 in annual emergency costs per individual through healthcare use, criminal justice processing, and emergency service consumption (National Alliance to End Homelessness, 2024). Emergency shelter costs $50,000–$65,000 per person annually with retention rates below 40%. The proposed modular settlement model costs $18,000–$20,000 per person annually with target retention above 85%.

Table 6. Cost Comparison: Intervention Models

Intervention	Annual Cost Per Person	Retention Rate
Street homelessness (status quo)	$30,000–$50,000	N/A
Emergency shelter	$50,000–$65,000	$< 40\%$
Modular stewardship model	$18,000–$20,000	Target 85%+
Net saving per person housed	$12,000–$45,000	—

At full scale of 650,000 housed individuals, the model projects net federal savings exceeding $1.4 billion annually through reduced healthcare, criminal justice, and emergency service costs (National Alliance to End Homelessness, 2024). The initial capital requirement for a 10,000-unit pilot is approximately $855 million.

Steward Tax Credit Structure. The steward tax credit is structured as a per-unit annual credit calibrated to offset the property tax differential that ALMU hosting creates and to provide a net-positive annual return on the land footprint allocated. The credit has three components: (1) a base credit of $4,200 per unit per year covering the property tax cost of the ALMU footprint, (2) a compliance bonus of $800 per unit per year for stewards maintaining Active status through the full reporting year, and (3) an ADU appreciation credit of $1,500 per unit per year reflecting the documented value increase to the primary residence from ADU presence in an ADU-permissive market. Total steward annual benefit per unit: $6,500. Total NSU cost per unit in tax expenditure: $6,500, which is included in the $18,000–$20,000 per-person annual cost figure.

ALMU Depreciation and Lifecycle. ALMUs are factory-manufactured to a 25-year structural lifespan with modular interior components (plumbing, electrical, insulation) designed for 10-year cycles. The NSU carries ALMUs on its balance sheet at cost minus accumulated depreciation using a straight-line 25-year schedule. At end-of-life, ALMU shells are recycled through manufacturing contracts. The federal government

physically eliminates disposal cost liability. This lifecycle design makes the per-unit capital cost deterministic over the program horizon: no surprise rehabilitation expenditures, no deferred maintenance liability.

Cross-System Savings Capture. The net savings from reduced healthcare, criminal justice, and emergency service use do not accrue automatically to the NSU budget. They accrue to state Medicaid accounts, county sheriffs' departments, and municipal emergency dispatch centers. Cross-system savings capture requires a statutory mechanism directing a specified percentage of documented savings from those accounts to the NSU revolving capital fund. The mechanism: states adopting the Spending Clause standards agree contractually to remit 30% of documented per-capita savings in Medicaid and criminal justice costs attributable to the housed population to the NSU capital account, verified through annual audit. At $12,000–$45,000 in savings per person, a 30% capture rate at 10,000 housed individuals generates $36 million to $135 million annually in revolving capital contributions, partially self-financing fleet expansion without additional bond issuance.

12. Governance Safeguards: Stabilization Without Control

State-administered stabilization infrastructure carries a documented risk: expanding control over the populations it claims to support. Foucault's analysis of biopower identifies how political authority over life processes can convert protective infrastructure into institutional control (Foucault, 1978). Historical states of exception confirm that emergency powers formed under crisis tend to persist after the threat dissipates.

The structural response to biopower risk in this architecture is separation: no administrative process accumulates the combined information required to exercise individual control over residents. Eligibility data, billing records, and sensor feeds are stored in non-linked databases, so the information required to surveil, track, or enforce against a named individual cannot be assembled through any ordinary administrative channel. The implementation architecture enforces this risk strictly as a structural design constraint.

Table 7. Governance Risk Matrix and Structural Mitigations

Risk	Manifestation	Structural Mitigation
Surveillance expansion	Eligibility data repurposed for policing or immigration enforcement	No centralized eligibility database; bilateral confirmation only
State of exception	Emergency stabilization powers made permanent	Sunset clauses with mandatory reauthorization
Pathologization	Narrow eligibility excluding non-normative populations	Functional, pluralistic stabilization eligibility definitions
Steward capture	Steward class accumulates power over resident population	Resident cooperative governance rights encoded in ALMU ownership terms

Surveillance Expansion – Mitigation Implementation. The billing record, assignment log, and sensor data for each ALMU are stored in separate, non-linked databases. The assignment log holds unit ID and assignment date. The billing account holds tax credit disbursement to the steward. The sensor feed holds infrastructure condition status. No administrative process links these three records to a named individual. Immigration enforcement agencies have no authority to access NSU assignment logs under program statute. Any subpoena request routes through federal judicial review, not administrative compliance. The eligibility confirmation that triggers assignment is bilateral: the Tier 1 provider confirms functional eligibility to the

NSU without transmitting personal data. The NSU confirms assignment availability to the Tier 1 provider. No centralized identity file exists at the federal level.

State of Exception – Mitigation Implementation. NSU operating authority sunsets after five years without mandatory congressional reauthorization. The reauthorization process requires a public audit demonstrating: (1) current program costs versus status quo baseline, (2) outcome metrics against the targets defined in this paper's measurement framework, and (3) a civil liberties review conducted by an independent panel. Reauthorization failure does not terminate existing ALMU placements. It freezes new fleet expansion and transitions existing residents to alternative placements over a 180-day wind-down period. The sunset clause prevents the emergency logic from becoming permanent by building program renewal into the architecture at founding, not as a future legislative battle.

Pathologization – Mitigation Implementation. Eligibility for ALMU placement is defined functionally: an individual who demonstrates Tier 1 engagement and has no secure housing is eligible. No diagnostic criteria, no behavioral standards, no sobriety conditions, no criminal history exclusions. The functional definition is the same standard Housing First programs apply, validated across international implementations as the approach that maximizes retention and employment transition (University of Cambridge, 2019). Stewards may not impose additional eligibility conditions. The federal ownership of the ALMU provides the enforcement mechanism: the NSU, not the steward, sets occupancy eligibility terms.

Steward Capture – Mitigation Implementation. Resident cooperative governance rights are encoded in the ALMU occupancy agreement, which is a federal document. The steward's role is infrastructure hosting, not tenancy management. Residents have the right to report steward non-compliance directly to the NSU platform without steward knowledge, request unit transfer without cause once per 12-month period, and participate in an annual program design feedback process conducted by the NSU's independent resident advisory board. Stewards who receive more than two verified resident welfare complaints in a 12-month period move to Probationary status regardless of their condition reporting compliance record.

13. The Foundational Economy Integration

The Foundational Economy is the provision and regulation of everyday goods and services required for basic human functioning (Foundational Economy Collective, 2018). Food, energy, transportation, care, and communications constitute the foundational layer. Housing belongs in this list. Its exclusion from the foundational economic logic that governs the other essentials is the structural anomaly that Papers 1 and 2 identify, and that this paper's implementation science corrects.

Food and clothing entered the Foundational Economy through industrialization: cybernetic feedback replacing artisanal scarcity with industrial abundance. The grocery supply chain, the fast fashion network, and the pharmaceutical distribution system all operate on the same basic logic: real-time demand data triggers supply response before shortage occurs (Beer, 1972; Wiener, 1948). The result is universal material access at declining real cost across both conservative and progressive political environments, in high-tax and low-tax jurisdictions alike, because the mechanism operates strictly on an industrial geometry.

The structural superiority of Universal Basic Services (UBS) over Universal Basic Income (UBI) is located precisely at this mechanism. Cash transfers into the existing housing market do not provide housing. They provide purchasing power that enters a market structurally incentivized to capture it (Christophers, 2023; Aalbers, 2016). A cash transfer to an individual facing a metropolitan PIR of 7.0 does not produce housing. It produces a rent payment that flows to a landlord who is already constrained from building at the scale that would lower their own asset values. The cash disappears into the valuation trap.

UBS for shelter operates through collective provision outside the asset market: the NSU as a public utility deploying buffer stock at cost rather than at scarcity-maximizing price. This constitutes pure industrialization. Food abundance eliminated famine in developed nations by producing so much food that scarcity became structurally impossible at scale. The NSU applies this logic to shelter: deployment of surplus capacity at buffer stock levels and industrial operating logic eliminates the condition of structural shelter scarcity.

The theoretical contribution of this implementation architecture to the Foundational Economy literature is specific: it identifies the coordination mechanism that makes shelter amenable to the industrial logic that has already transformed other foundational essentials. The NSU-to-steward interface protocol, the measurement framework, and the activation sequence are collectively the industrialization engine for the housing layer. The NSU framework and the distributed stewardship architecture establish that the engine design is correct. This paper establishes how the engine starts.

14. Isotropic Verification Audit

This section maps every operative claim within the Material Dignity Implementation thesis. Claims are categorized by Structural Severity: the degree to which falsification of a specific claim compromises the overarching architecture.

14.1 Foundation: Critical Claims (Architectural Determinants)

Claim	Severity	Justification / Verification Source
Blueprint Completeness	CRITICAL	The NSU and distributed stewardship frameworks are documented in independently authored SSRN working papers whose structural conclusions have been verified against the external literature cited in each paper's bibliography. Those conclusions are the foundation on which this paper's implementation architecture rests.
Coordination Gap	CRITICAL	Neither prior paper specifies the NSU-to-steward interface. The absence is explicit: both papers end at "implementation awaits policy commitment."
Fiscal Viability	CRITICAL	Cost projections ($18,000–$20,000 per person annually; net savings $12,000–$45,000) are derived from Community First! Village operating data, HUD emergency shelter cost reporting, and National Alliance to End Homelessness cross-system cost studies (Texas Tribune, 2024; National Alliance to End Homelessness, 2024; U.S. Department of Housing and Urban Development, 2023).
Spending Clause Pathway	CRITICAL	*South Dakota v. Dole* (1987) establishes the constitutional precedent for federal conditional funding as the non-coercive mechanism for cross-jurisdictional program adoption.

14.2 Operational: High-Severity Claims (Coordination Mechanisms)

Claim	Severity	Justification / Verification Source
Tier 1 Prerequisite	HIGH	Hygiene access as prerequisite capability is empirically documented: NIH (2024) confirms hygiene as primary employment barrier; Portland State (2024) documents psychological mechanism (National Institutes of Health, 2024; Portland State University, 2024).
ALMU Capital Mobility	HIGH	Federal ownership enabling unit redeployment is the architectural feature that prevents capital lock-in. Validated through analysis of manufactured housing mobility and Community First! Village operational data (Texas Manufactured Housing Association, 2024; Texas Tribune, 2024).
YIMBY Inversion Mechanism	HIGH	Tax credits, ADU value appreciation, and federal liability coverage align steward economic incentives with program participation. Economic incentive design follows Ostrom (1990) commons governance principles.
NSU Surplus Activation	HIGH	HUD vacancy data, commercial real estate vacancy surveys, and manufactured housing use rates establish the empirical basis for surplus capacity available to the NSU (U.S. Department of Housing and Urban Development, 2023; Mesocore Industry Analytics, 2024).

15. Conclusion: The Executable Program

The Valuation Trap is a documented structural condition that makes housing scarcity the rational market outcome. Once housing became the primary vehicle for household wealth accumulation, producing sufficient housing to meet human need became an act of financial self-destruction for the ownership class controlling supply, because abundance destroys the scarcity premium on which asset values depend (Aalbers, 2016; Christophers, 2023; Rolnik, 2019). The Dignity Barrier is a documented mechanical precondition rather than a moral observation. Hygiene access is the gateway capability for employment eligibility, and absent its resolution before housing placement, the employment transition pathway does not open regardless of housing quality or resource adequacy (National Institutes of Health, 2024; Portland State University, 2024). An institutional architecture that resolves both the macro structural condition and the individual capability sequence is not the preferred theoretical outcome. It is the minimum design requirement for a program that will demonstrate outcomes at Gate 2 rather than adding to the documented record of expenditure without verifiable population-level improvement (California State Auditor, 2024).

This paper establishes the evidentiary basis for the architecture's selection before specifying how to implement it. The comparative analysis across five international and domestic housing architectures confirms that the distributed stewardship model is the minimum institutional mechanism available for the chronically unhoused population that resolves all three institutional failure modes within the US legal and constitutional context. It further establishes that the cost-burdened renter population requires a complementary but distinct architecture of supply deregulation and Community Land Trust preservation, which does not require a federal institution and which runs in parallel with the distributed stewardship program rather than competing with it. The coordination protocol, the measurement framework, and the activation sequence that follow from Sections 7 through 9 of this paper derive their authority from the evidence accumulated in Sections 3 through 6 rather than from prior formulation assumed without comparison.

The program is executable and the path it follows is ordered as follows. Congress authorizes the NSU Corporation under RFC-model statutory authority, issuing bond-backed capital for a 10,000-unit pilot at $855 million. The Spending Clause mechanism conditions existing HUD program funding on state adoption of NSU operational standards, Tier 1 coverage requirements, and outcome data submission. Pilot geographies selected on Price-to-Income Ratio exceeding 6.5, ADU-permissive zoning, and existing hygiene infrastructure deploy Tier 1 comfort stations for 90 days before any ALMU placement occurs. The NSU-to-steward coordination protocol governs assignment, verification, reporting, and vacancy management from day one of ALMU deployment. The measurement framework captures baseline, 90-day, and 12-month data against the pilot targets documented in Section 8 of this paper. Gate 2, conditioned on 12-month retention exceeding 72%, employment transition exceeding 30%, and net cost savings documented from primary data, authorizes

10-fold fleet expansion. Cross-system savings capture replenishes the NSU revolving capital account, partially self-financing regional and national expansion. Gates 3 and 4 authorize regional and national deployment on the evidence accumulated at each prior scale, with the scale gates functioning as the accountability mechanism that resolves the second institutional failure mode by conditioning each expansion on verified outcomes from the preceding phase.

The 650,000 individuals currently without permanent shelter in the United States (U.S. Department of Housing and Urban Development, 2023) are not there because the solution is unknown or because the evidence does not support a viable architecture. They are there because the implementation science connecting the structural diagnosis to the operational delivery network, grounded in the comparative evidence that justifies the architecture's selection, has been missing. This paper provides that implementation science. The comparative analysis has been conducted. The evidence-based selection has been stated with the conditions under which it would require revision. The coordination protocol is specified. The measurement framework is defined. The activation sequence is ordered. The governance safeguards are encoded. The decision to execute is not an empirical problem. It is a political one, and that is a more tractable problem than it appears, because it has a defined decision point with a specified evidential trigger at Gate 2.

References

Aalbers, M. B. (2016). *The Financialization of Housing: A Political Economy Approach*. Routledge.

Ashby, W. R. (1956). *An Introduction to Cybernetics*. Chapman and Hall.

Beer, S. (1972). *Brain of the Firm*. Allen Lane.

Bertaud, A. (2018). *Order Without Design: How Markets Shape Cities*. MIT Press.

California State Auditor (2024). Homelessness in california: The state must do more to assess the cost-effectiveness of its homelessness programs. Technical report, California State Auditor. Report 2023-115.

Christophers, B. (2023). *Our Lives in Their Portfolios: Why Asset Managers Own the World*. Verso.

Davis, J. E. (2010). *The Community Land Trust Reader*. Lincoln Institute of Land Policy.

Dear, M. and Wolch, J. (1987). *Landscapes of Despair: From Deinstitutionalization to Homelessness*. Princeton University Press.

DiBella, C. J. (2026). Adaptive capacity and systemic fracture: The mechanical audit of structural decoupling. SSRN Working Paper, March 2026.

FEANTSA (2022). Housing first europe: Evidence and implementation. Technical report, European Federation of National Organisations Working with the Homeless.

Foucault, M. (1978). *The History of Sexuality, Vol. 1: An Introduction*. Pantheon Books.

Foundational Economy Collective (2018). *Foundational Economy: The Infrastructure of Everyday Life*. Manchester University Press. Originally circulated as CRESC Working Paper 131, 2013.

Glaeser, E. L. (2011). *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*. Penguin Press.

Hawaii State Legislature (2025). Act 309, session laws of Hawaii 2025 (formerly HB 431): Relating to homeless kauhale. Hawaii State Legislature, enacted statute. Establishes formal statutory requirements for the Kauhale Initiative, mandates State Auditor performance audit, requires the Statewide Office on Homelessness and Housing Solutions (SOHHS) to submit quarterly expenditure reports to the legislature, and mandates competitive bidding for contracts exceeding $1,000,000 — enacted in direct response to documented accountability failures under the emergency procurement regime authorized by the 2023 gubernatorial homelessness emergency declaration.

HomeAid Hawaii (2025). Kauhale initiative: Statewide impact. Technical report, HomeAid Hawaii. Reports 24 operational kauhale sites statewide, 918 active beds, and 2,000+ individuals served since 2021; claimed $27.5 million annual systemic savings in healthcare, emergency services, courts, and public safety; figures are self-reported with no independent audit verification as of April 2026.

Honolulu Civil Beat (2025). State often lacked records needed to verify spending on homeless villages. Investigative news report. Documents absence of expenditure records for $37 million in no-bid contracts awarded to HomeAid Hawaii under the Hawaii Kauhale Initiative; triggered Hawaii Legislature mandate for State Auditor performance audit (Act 309, SLH 2025).

Jacobs, J. (1961). *The Death and Life of Great American Cities*. Random House.

Jones, J. H. (1951). *Fifty Billion Dollars: My Thirteen Years with the RFC*. Macmillan.

Long Beach Post (2024). City terminates contract with primary shelter operator following $69 million audit. Long Beach Post investigative report. First to Serve terminated after audit covering approximately five years identified ghost-tenant billing — a fraud vector existing only when occupancy data is self-reported by the operator receiving per-occupancy payment.

Los Angeles City Controller (2024). Audit of the Los Angeles Homeless Services Authority (LAHSA). Found approximately $2.3 billion in homelessness expenditure for which the verification infrastructure did not exist to confirm whether services were delivered at the claimed rate; multiple provider audits failed including Weingart Center despite $100M+ in contracted funds.

Mast, E. (2023). JUE insight: The effect of new market-rate housing construction on the low-income housing market. *Journal of Urban Economics*, 133:103508. Provides causal evidence that new market-rate construction reduces rents in lower-income segments; cited in conjunction with the Minneapolis 2040 Plan as evidence that supply deregulation at the city scale produces measurable affordability effects within a multi-year window.

Mesocore Industry Analytics (2024). Us manufactured housing production report 2024. Annual production volume data: 103,314 units produced, 16% year-over-year increase from 89,169 units in 2023.

National Alliance to End Homelessness (2024). The state of homelessness in america 2024. Technical report, National Alliance to End Homelessness. Annual point-in-time count data, shelter cost trends, retention rates, and system performance metrics across US jurisdictions.

National Institutes of Health (2024). Hygiene access and employment barriers among homeless populations. NIH Research Summary.

Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press.

Pleace, N., Baptista, I., and Knutagård, M. (2022). Housing first in europe: An overview of implementation, strategies and financing. Technical report, Housing First Europe Hub.

Portland State University (2024). Psychological and social effects of hygiene access on homeless employment outcomes. Technical report, Portland State University.

Rolnik, R. (2019). *Urban Warfare: Housing Under the Empire of Finance*. Verso.

South Dakota v. Dole (1987). South dakota v. dole. 483 U.S. 203. Establishes Congress's authority to condition federal funding on state compliance with specified requirements under the Spending Clause.

Texas Manufactured Housing Association (2024). Manufactured housing cost per square foot: National averages 2024. Industry cost comparison data, site-built versus HUD Code manufactured housing.

Texas Tribune (2024). Community first! village: What austin's famed homeless community gets right, and what it doesn't. Investigative report documenting retention rates, operating costs, resident income data, and campus concentration critique.

UCSF Benioff Homelessness and Housing Initiative (2023). Toward a new understanding: The california statewide study of people experiencing homelessness. Technical report, University of California, San Francisco. Documents mortality conditions among chronically homeless individuals, including reduced life expectancy and elevated cause-specific mortality rates relative to the general population.

University of Cambridge (2019). Housing first: The evidence base. Cambridge Policy Review.

U.S. Department of Housing and Urban Development (2023). The 2023 annual homeless assessment report (AHAR) to congress. Technical report, HUD Office of Community Planning and Development. Primary federal data source for homelessness prevalence, shelter utilization, vacancy statistics, and surplus capacity documentation.

U.S. Department of Justice (2025). Former CFO of Homekey developer charged with falsifying records to obtain $26 million in state grants. DOJ press release, U.S. Attorney's Office, Central District of California. Cody Holmes / Shangri-La Industries: alleged falsification of bank records to secure $26M in Homekey grants; project never completed; funds allegedly included $2M+ on personal credit cards and a $46,000/month Beverly Hills luxury rental.

U.S. Department of Justice (2026). Executive director of south Los Angeles nonprofit charged with fraudulently obtaining over $23 million in homelessness funding. DOJ press release, U.S. Attorney's Office, Central District of California. Alexander Soofer / Abundant Blessings: alleged diversion of $23M+ in homelessness funds (2018–2025) including $5M+ from LAHSA; contract renewal continued throughout the period with no verification mechanism detecting the alleged diversion.

Wiener, N. (1948). *Cybernetics: Or Control and Communication in the Animal and the Machine.* MIT Press.