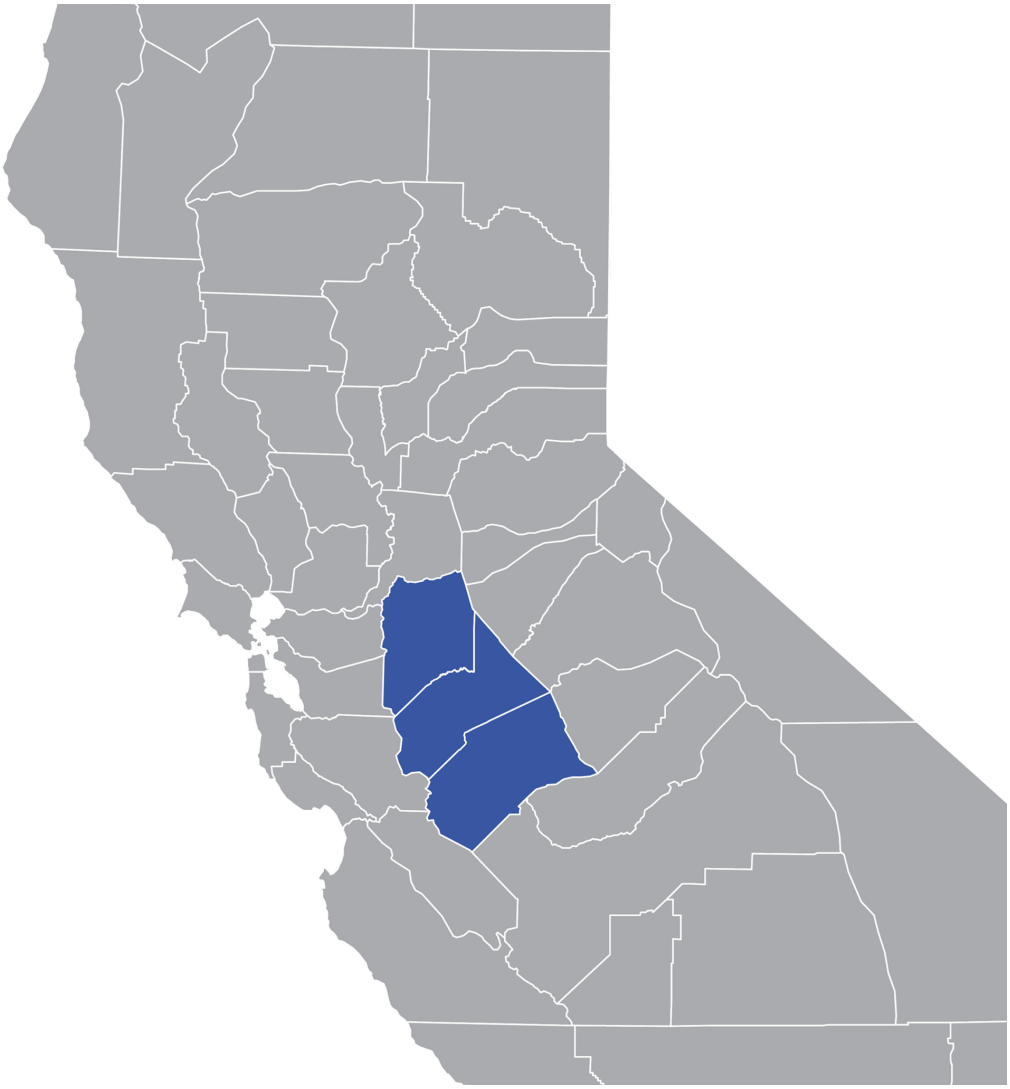
CLIMATE RESILIENT AFFORDABLE HOUSING

For North San Joaquin Valley



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1. EXECUTIVE SUMMARY

The North San Joaquin Valley (NSJV), comprising San Joaquin, Stanislaus, and Merced counties in California, grapples with a severe affordable housing crisis affecting over 37,000 low-income renters. Contributing factors include gentrification, an influx of high-income Bay Area residents, and challenges meeting Regional Housing Needs Allocation (RHNA) targets.

The NSJV faces a critical need to address the escalating costs of housing construction, driven by regulatory requirements and shortages in skilled construction labor. Rising costs in steel and concrete construction particularly impact affordable housing initiatives. Construction costs, regulatory requirements, and development fees contribute to the escalating expense of developing affordable housing. Notably, climate-resilient housing, though initially costly, proves cost-effective over time. Challenges include a 25% increase in hard costs per square foot for multifamily projects in California over a decade, exacerbated by a scarcity of skilled workers and anti-immigration rhetoric.

The NSJV is disproportionately impacted by climate change, facing extreme heat, droughts, floods, and pollution. Collaborative efforts with CalTrans and local Climate Action Plans are underway, but historical exclusion of disadvantaged communities is evident. The baseline report identifies climate threats and stakeholder demands for affordable housing due to lower home values. It explores climate-resilient affordable housing as a multifaceted solution to enhance resilience, generate green jobs, and address commuting-related carbon footprints.

Investing in climate-resilient affordable housing projects in the NSJV could potentially create around 314,760 jobs, with a total cost estimate of approximately $25.8 billion for 40,000 affordable housing units. The proposed recommendations aim to address specific NSJV housing challenges, promote sustainable and resilient solutions, and create a transparent and streamlined environment for affordable housing development. Proposals include the establishment of a regional housing entity, distinct from the San Joaquin Valley Regional Early Action Planning (REAP) committee, focusing on regional housing policies, needs assessment, and training for local planners. Additionally, strategies are outlined to mitigate rising construction costs, encourage innovative construction methods, standardize development fees, and explore alternative funding sources beyond development fees. The overarching goal is to address the housing crisis comprehensively and support the region's aspirations for affordable and climate-resilient housing.

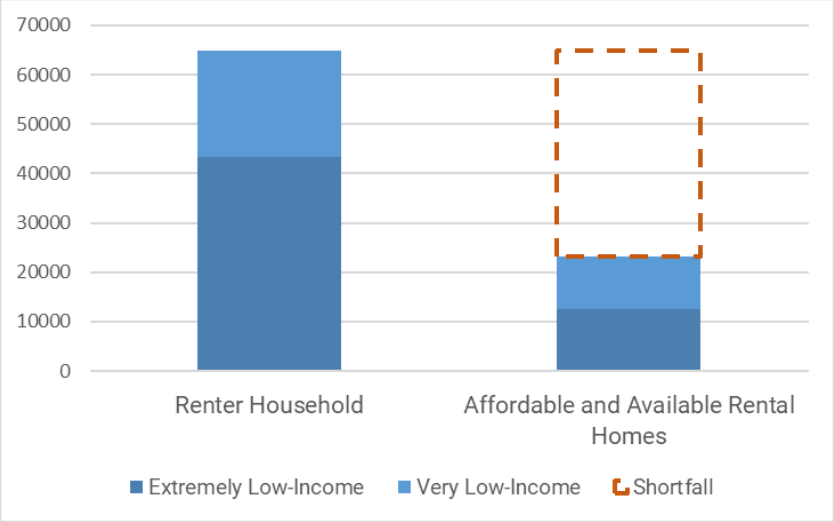
2. Introduction

The North San Joaquin Valley (NSJV) comprises three counties - San Joaquin, Stanislaus, and Merced located at the most northern section of California's heartland. The region is unique in its economic and geographic relationships, with ties to the Bay Area and Silicon Valley, the Sacramento region to its north and Fresno to its south. With a population more than 1.6million, the region is a wide swatch of urban downtowns, farmland and vineyards, the California Delta, growing suburban, and leading logistics and manufacturing companies.

2.1 Affordable Housing Crisis

NSJV, like the rest of California, is facing an unprecedented housing supply and affordability crisis. Collectively, 37,710 low-income renters do not have access to affordable homes[1], with the highest shortfall in San Joaquin County (18,654), followed by Stanislaus County (14,486) and Merced County (8,738).

Figure 1: Affordable Homes Shortfall in North San Joaquin Valley

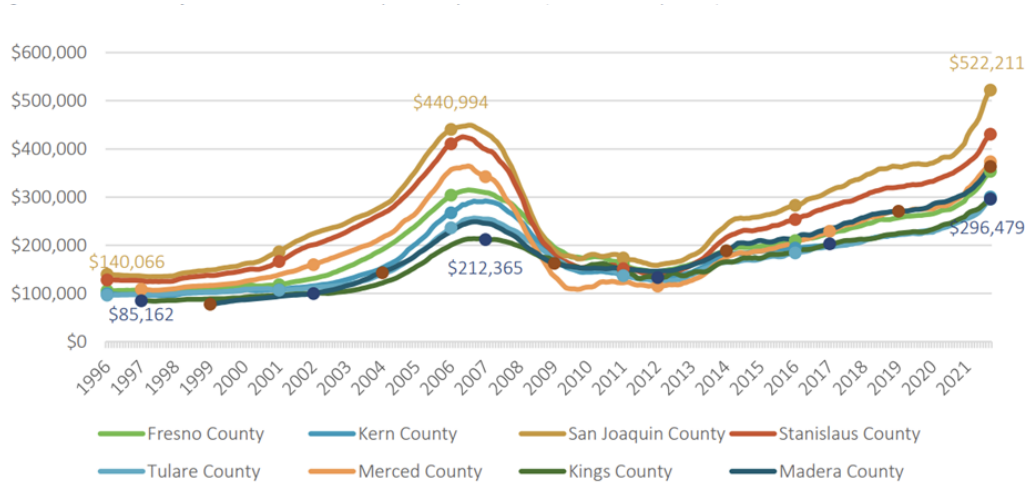


Source: California Housing Partnership, Housing Needs Dashboard

While the Stanislaus County Comprehensive Econ Dev Strategy 2022-2027 indicates that the affordable housing crisis is caused by diminishing stock of local county available housing, as well as restrictive zoning ordinances, the San Joaquin County Index 2020 indicates the crisis caused by consistently low issued housing permits for multi-family structures. Additionally, the housing market in this region has been greatly impacted by the adjacent region, especially in the past few years. As indicated in the baseline report, home values are lower in NSJV compared to the adjacent regions such as the Bay Area, causing a considerable influx of highly paid residents from the Bay Area. Over the years, this influx has further led to gentrification - displacing existing residents, especially lower-income residents. As a result the NSJV counties have the highest median home values (Figure 1) in the San Joaquin Valley Region.

[1] California Housing Partnership, Housing Needs Dashboard, retrieved from https://chpc.net/housingneeds/

Figure 2: Rising Home Values in the San Joaquin Valley



As a part of the 6th cycle of Regional Housing Needs Allocation (RHNA)[2], the council of governments of each of the three counties calculated the total number of affordable and market-rate units along with objectives and strategies. The region collectively needs to develop more than 1,00,000 units, out of which nearly 45% of the units need to be affordable, i.e. below 80% of AMI. All three counties did not reach their targets for the last RHNA cycle for both affordable and market rate housing (except for Merced County which overshot its market-rate housing goal)[3].

Table 1: Regional Housing Needs Assessment of the Region

Counties	Very Low Units	Low Units	Total Affordable Units	Moderate Units	Above Moderate Units	Total Market-Rate Units	Total RHNA
San Joaquin	13,293	8,344	21,637	9,231	21,851	31,082	52,719
Merced	5,516	3,780	9,296	3,930	9,394	13,324	22,620
Stanislaus	8,410	5,821	14,231	6,132	13,981	20,119	34,344
TOTAL	**27,219**	**17,945**	**45,164**	**19,293**	**45,226**	**64,519**	**1,09,683**

Source: Combined RHNA of San Joaquin County, Merced County, Stanislaus County[4]

Current Governance Framework: All the three counties have individual housing authorities that are responsible for planning and implementing county level housing programs, as well as individual councils

[2] The Regional Housing Needs Allocation (RHNA) is a state-mandated process that ensures local governments have enough zoned capacity to accommodate future housing demand for households at all income levels.
[3] California Housing Partnership, Housing Needs Dashboard, last updated in May 2023
[4] Regional Housing Needs Assessment, San Joaquin Valley Council of Governments, September 2022; Regional Housing Needs Assessment, Merced Council of Governments, November 2022; Regional Housing Needs Assessment, Merced Council of Governments, November 2022;

of governments that are responsible for development of county-level housing elements and comprehensive plans for regional housing needs assessments (RHNA) encompassing all local jurisdictions within individual counties. Besides the individual county authorities, a San Joaquin Valley Regional Early Action Planning[5] (REAP) committee for Housing was recently formed to fund housing planning activities through 2023 for the Central Valley region. The committee (comprising of 8 counties including San Joaquin county, Merced county, and Stanislaus county) prepared a comprehensive report on housing trends, impediments, and best practices in the Valley; as well as a guide that will help with the understanding of the today's legal framework for the planning of housing within the San Joaquin Valley.

Risk of Displacement: The baseline report by NVT describes housing displacement as one of the greatest regional threats. The threat of displacement in the NSJV can be caused by a number of factors - climate induced displacement, gentrification, affordable housing crisis, and smart growth and climate mitigation strategies. The comprehensive housing report for the San Joaquin Valley elaborates on how disasters such as fires, floods and earthquakes in the region can result in displacement. Additionally, insufficient and inequitable federal disaster assistance and recovery programs are further driving displacement of the most vulnerable communities (Dorazio, 2022)[6].

Further, the report elaborates on how cost burdens, overcrowding, and substandard housing conditions are causing displacement risk. High conversion of subsidized affordable rental units to market-rate housing has led to substantial displacement of low-income residents. The State of California's 2020 Analysis of Impediments to Fair Housing Choice (AI) identified that poor enforcement and inadequate anti-displacement protections have left protected classes, such as communities of color, more vulnerable to displacement.

The state developed funding programs aimed at increasing affordable housing supply and sustainable transportation alternatives, prioritizing investment in 'Disadvantaged Communities'. While new investments helps to reduce pollution burden and create economic opportunity, it increases the risk of housing instability of longtime residents, as new investments drive up land values and increase displacement pressures, especially for communities of color, renters, and residents on fixed incomes (Chapple, 2017)[7]. NVT must mitigate potential unintended displacement impacts of public investments in order to address equity concerns.

[5] The Regional Early Planning Planning (REAP) program is a State of California funded grant program to help regions and jurisdictions with planning activities to meet the sixth cycle of the regional housing needs assessment, and to spur affordable housing production.

[6] "Localized Anti-Displacement Policies - Ways to Combat the Effects of Gentrification and Lack of Affordable Housing", Justin Dorazio, September 26, 2022, CAP 20

[7] "Developing a New Methodology for Analyzing Potential Displacement", Karen Chapple, Paul Waddell, Daniel Chatman, April 26, 2017, University of California, Berkeley, prepared for the California Air Resources Board and the California Environmental Protection Agency

2.2 High Cost of Housing

Building the affordable housing supply is becoming an increasingly expensive proposition in the region as well as the entire state. Irrespective of the type of building; single-family homes or multifamily rental and condominium buildings cost layer on top of one another throughout the development process from planning to construction and inspection.

There are two dimensions to the costs of development, many of which have been rising in recent years:

1. Construction costs: Materials, labor: The largest driver of affordable housing costs[8]
2. Regulatory Requirements and Development Fees

Furthermore, when incorporating measures to ensure climate-resilient housing in the valley, it's essential to consider the associated cost implications. While this may initially appear complex, the encouraging aspect is that financing resilient projects proves to be cost-effective. Resilient infrastructure introduces only a modest additional cost, ranging from **3% to 10%** of the overall project cost[9]. Notably, the United Nations Environment Program asserts that for every dollar invested in adaptation, there is a remarkable return of 3.5 dollars in terms of avoided material losses. This underscores the notion that the advantages of resilience and disaster risk prevention far exceed the associated costs. Simultaneously, these investments yield non-monetized social and environmental benefits, further amplifying the overall positive impact.

Rising Housing Construction Costs

1. Hard costs of building housing in California have increased by $68 per square foot, on average. In 2008-2009, hard costs averaged $177 per square foot. By 2018 that average had risen to $222 per square foot—a 25 percent increase. The California Construction Cost Index, for example, recorded a 24 percent change in costs between 2009 and 2018[10].

2. The escalation of labor and materials costs poses a significant challenge within the construction landscape. In nominal terms, the wages for all construction and extraction occupations in California surged 29 percent between 2006 and 2018, with a subsequent 13 percent increase since 2010. Notably, this growth falls slightly below the statewide surge in hard costs, which experienced a 25 percent increase.

[8] "The Hard Costs of Construction: Recent Trends in Labor and Materials Costs for Apartment Buildings in California," *Terner Center* (blog), accessed November 20, 2023, https://ternercenter.berkeley.edu/research-and-policy/hard-construction-costs-apartments-california/. "The Hard Costs of Construction."

[9] "Why Is It Necessary to Finance Climate-Resilient Housing?," *Ciudades Sostenibles* (blog), August 30, 2022, https://blogs.iadb.org/ciudades-sostenibles/en/why-is-it-necessary-to-finance-climate-resilient-housing/.

[10] "DGS California Construction Cost Index CCCI," accessed November 20, 2023, https://www.dgs.ca.gov/RESD/Resources/Page-Content/Real-Estate-Services-Division-Resources-List-Folder/DGS-California-Construction-Cost-Index-CCCI.

However, when examining the scenario in real terms, the picture is less optimistic, with wages only seeing a meager rise of 3.4% since 2006[11]. Yet, this statistic fails to encapsulate the full complexity of the issue. General contractors emphasize that the combination of anti-immigration rhetoric and a constrained labor market has created formidable challenges in recruiting construction workers. This scarcity is especially pronounced in the search for individuals with multifamily construction expertise or specialized trade skills. Undoubtedly, housing developers concur with this sentiment, consistently ranking a shortage of skilled workers as a prominent concern in surveys[12]. The confluence of these factors not only contributes to rising costs but also underscores the critical need for comprehensive solutions to address labor shortages and skills gaps within the construction industry in California.

3. Over a decade, the hard costs per square foot for constructing multifamily projects in California have surged by 25 percent. In the period from 2008-2009, the average hard costs were $177 per square foot, escalating to $222 per square foot by 2018. This 25 percent increase is observed across MasterFormat divisions, encompassing metals, concrete, finishes, and wood, plastics, and composites. Noteworthy rises are particularly evident in line-item costs for wood, plastics, and composites, which nearly doubled between 2014 and 2018. The North San Joaquin Valley must recognize and address these escalating materials costs when formulating strategies for affordable housing development. The surge in costs associated with constructing with steel and concrete is particularly impactful. Type I projects, characterized by their use of steel and concrete and often exceeding 5-7 stories, incur an average cost increase of $65 per square foot compared to alternative construction types, such as Type V over I, which involves wood frame floors over a concrete platform. These Type I projects, more commonly found in infill locations like San Francisco or Los Angeles, where zoning allows higher-density construction, deploy more expensive components for vertical construction.

   Furthermore, when considering the number of units in a project, a factor that marginally reduces costs through economies of scale, the additional expense for Type I projects experiences a slight uptick to $71 per square foot. Therefore, in strategizing for affordable housing development in the North San Joaquin Valley, it is imperative to factor in the escalating costs of materials, particularly in steel and concrete construction, to ensure sustainable and economically viable initiatives.

4. Affordable housing projects initially appear more costly than market-rate and mixed-affordability projects. However, this discrepancy diminishes in significance when accounting for project size. After adjusting for year, region, construction type, and prevailing wage requirements, affordable projects show an average cost increase of $48 per square foot compared to market-rate and mixed-affordability projects. Terner Center's, "The Costs of Affordable Housing Production: Insights from California's 9% Low-Income Housing Tax Credit Program," study reveals that funding complexity, including prevailing wage and local hire requirements, contributes to higher

[11] "The Hard Costs of Construction."
[12] "Builder Confidence Holds Firm in November | Eye On Housing," November 18, 2019, https://eyeonhousing.org/2019/11/builder-confidence-holds-firm-in-november-2/.

development costs, particularly when multiple projects subject to labor requirements advance simultaneously in a constrained labor market.

Securing local approvals for affordable housing projects often entails heightened design requirements, sometimes driven by aesthetic considerations imposed by localities. These changes can elevate construction costs and even lead to a reduction in the number of produced units. However, when adjusting for project size, affordable projects do not statistically exceed market-rate costs. This may be influenced by the relatively smaller size of affordable projects, constrained by entitlement and financing considerations specific to affordable units.

Multitude of Development Fees: In California, the escalating trend of development fees poses a considerable challenge, with a 2.5 percent increase observed between 2008 and 2015, while the national average experienced a 1.2 percent decrease during the same period. This trend holds significant implications for the development of climate-resilient affordable housing, particularly in the context of the North San Joaquin Valley. Key findings are below:

1. Development fees are challenging to estimate accurately.
2. Lack of oversight or coordination between city departments results in varied and inconsistent impact fees across different cities.
3. The cumulative impact of individual fees substantially raises the overall cost of housing construction.
4. Additional exactions not defined in fee schedules further contribute to project unpredictability.

These issues are particularly pertinent when planning climate-resilient affordable housing in the North San Joaquin Valley. The lack of standardized systems for estimating development fees hampers builders' ability to predict total project costs during the crucial predevelopment stage. This uncertainty often forces builders to rely on informal relationships with planners and building officials, potentially leading to inaccurate estimates. The unpredictability of these fees can, in turn, cause delays or even derail projects altogether.

Moreover, the additional costs imposed by development fees contribute to reduced housing affordability, impacting even affordable housing projects. The structure of these fees can also inadvertently incentivize the construction of fewer, larger units, potentially diminishing the overall housing supply. As the North San Joaquin Valley seeks to advance climate-resilient affordable housing, addressing and reforming the current issues with development fees is imperative for fostering a more predictable, affordable, and sustainable housing development landscape.

2.3 Climate Change Crisis

The Fourth Climate Change Assessment Report indicates that climate change may impact the Valley disproportionately more than other regions of California. The San Joaquin Valley Region as a whole has the highest concentrations of rural disadvantaged communities and the most stressed ecosystems of California. These disadvantaged communities tend to be in areas more prone to hydroclimatic hazards,

such as extreme heat, droughts, and floods; and due in part to systemic issues, they have fewer resources to plan and adapt for these conditions.

The baseline report further specifies the unique and greatest immediate climate and environmental threats facing the NSJV:

- Extreme Heat and Rising Temperatures
- Drought and changing precipitation cycles (including groundwater overdraft and drinking water access for unincorporated communities
- Flooding as a result of more severe storms, snowmelt runoff and proximity to vulnerable rivers and levees
- Pollution burden including PM 2.5 and ozone exposure, as well as proximity to waste facilities and superfund sites.

These threats disproportionately burden communities that are located in proximity to identified hazards such as pollution sources and floor prone regions. Community engagement also highlighted how these communities have been historically left out of climate and environmental planning efforts.

Most local jurisdictions within the three counties have developed Climate Action Plans to mitigate the impact of climate change. Merced County recently updated their county-wide Climate Action Plan in accordance with the statewide target of reducing greenhouse gas emissions to reach 1990 levels by 2030 (a target established by Senate Bill 32). By contrast, the San Joaquin Valley does not have a county-wide climate action plan but incorporated climate action in other reports and strategies. Recently the county collaborated with CalTrans to make projects for climate change in the county area, as well as launched a climate education campaign that aims to increase awareness of climate impacts on people and transportation systems. Stanislaus County created a regional sustainability toolkit which includes multiple planning tools to achieve greenhouse gas reductions in the region and supports different climate resiliency initiatives of local jurisdictions.

2.4 Increasing Job Potential through Development Climate Resilient Affordable Housing

The findings above resonate with the observations from stakeholder engagement elaborated in the baseline report for California Economic Resilience Fund (CERF). Along with the emphasis on how climate change is an imminent threat to the region via extreme heat and the risk of flooding, the stakeholder engagement in each of the three NVT counties stresses the increasing and preserving affordable housing in the NSJV region.

Furthermore, stakeholder engagement also suggested a strong interest in increasing the opportunity for high-road jobs. Housing-related activities and investment have been major economic drivers, serving as an important contributor to economic activity and job creation[13]. According to the estimates reported by Booz Allen Hamilton in 2011, the NSJV region can create 314,760 jobs through development of 40,000 affordable housing units required for the region (Table 2 and Table 3).

[13] https://www.brookings.edu/articles/enhancing-climate-adaptation-the-role-of-climate-resilient-housing-in-africas-cities/

Table 2: Estimate of jobs created with every $1million invested in affordable housing

Jobs	New Construction	Maintenance and Repair
Direct Jobs	3.6	1.3
Indirect Jobs	4.6	3.6
Induced Jobs	4.0	3.4
Total Jobs	**12.2**	**8.3**

Source:

Table 3: Potential Job Creation through Affordable Housing

Affordable Housing Cost per unit[14]	$643,812
Affordable Housing Target	40,000 Units
Total Cost of Affordable Housing	$25.8 billion
Potential Jobs	**314,760 Jobs**

Source:

Thus, this report builds on exploring affordable housing as a tool to enhance climate resilience and generate more green jobs under the NVT initiative. Climate resilient affordable housing offers fivefold benefits; preservation and creation of affordable housing, building communities that are more resilient to climate change, generating a green economic base for the region, high-road green jobs, and sustainable urban development and growth.

[14] Derived from latest 94-unit affordable housing development in Downtown Stockton

3. Our Approach

Approach 1: Governance and Regulatory Framework

While the baseline report expands on a few broad housing patterns of the region, it does not elaborate on housing needs and challenges specific to the region, impact of high roads jobs on housing, and consequently the need for a regional regulatory framework for housing. The following recommendations expand on the role of the regional housing entity to ensure climate responsive housing development. The entity largely focuses on creating climate resilient housing through upgrading existing homes and assisting them in the weatherization process, and planning for and investing in new climate resilient housing; and secondly developing housing planning programs and policies that help in reducing greenhouse gas emission by promoting transit-oriented development, reducing the risk of gentrification and displacement, and preserving farm lands and environmental habitats.

Strategy 1.1: Developing a Regional Housing Planning Entity

Currently, a San Joaquin Valley Regional Early Action Planning (REAP) committee for Housing is the only regional housing planning entity in this region. While the report prepared by REAP is an immensely useful resource to understand the prevailing existing housing conditions in the valley as well as presents strategic recommendations, this program and the committee was just a one-time intervention. An active and continuous regional collaboration is required for the North San Joaquin Valley to address the urgent (and the emerging) housing crisis. The regional housing entity could be an independent entity or a team under the larger NVT umbrella, working collaboratively with the economic development strategy, coordinating inter-jurisdictional efforts, as well as providing continued support to local and county-level jurisdictions. Local support is especially important to effectively respond to the shifting dynamics caused by new and emerging policies under NVT. Responding to the specific challenges posed by the three counties, the regional housing entity will be responsible for:

- Regional Housing Policies and Plans - providing a common framework that multiple municipalities within the region can adopt or adapt to address their housing challenges. Framework could include regional housing goals, priorities, and policies.
- Development of jointly administered housing programs and funding streams
- Regional Needs Assessment - supplementing local assessment, sharing of data on local jurisdiction's inclusionary zoning or other housing programs, and supporting and sharing workload of small localities which often have limited staff capacity for research and analysis.
- Investment in training and technical assistance to build the capacity of local planners and policymakers to implement the strategy.

Strategy 1.2: Creation of Climate Resilient Affordable Housing: This strategy involved both - making existing homes climate resilient as well as new construction of climate resilient affordable housing.

Strategy 1.2.1: Encourage and fund the retrofitting of existing homes (assisting weatherization)

Reducing emissions from residential homes will require rehabilitating and retrofitting existing buildings such as installing renewable energy sources like solar panels, replacing gas-powered appliances with

electric ones, and making homes more energy efficient through weatherization and other upgrades[15]. These retrofits can advance affordability by reducing ongoing operations and maintenance costs for residents and building owners. The weatherization assistance program run by the federal government provides low-income families with home modifications that increase energy efficiency, reduce energy costs, and ensure that their homes remain habitable throughout the year. These improvements are carried out by local providers, generally counties, local government agencies, and non-profit organizations, which usually operate under the supervision of the state.

Several regional and state governments have developed tailored policies and procedures to implement this program. New York State's weatherization assistance program has developed a network of local providers that are trained and certified to render services to renters, homeowners, real estate property owners, and property management companies[16]. States like Michigan and West Virginia have collaborated with other state departments - the department of health and human services and department of economic development to fund and implement this program. These policies and collaborations have not only increased the outreach but have also created and supported jobs across the state.

Currently, none of the county-wide housing authorities of NSJV have specific implementation strategies or community networks. To address the immediate climate and environmental threats to low-income housing, specific weatherization assistance policies must be formulated. These policies provide the opportunity to create and train a network of local providers, easing the application process for both the providers and the applicant, and thereby speeding up the implementation. NSJV can also reach out to organizations operating in the Bay Area such as Climate Resilient Communities that helps residents navigate the many service options available to them and the differing and complex application processes that some of these services require. This could also lead to resourceful inter-regional collaborations. Similar to Michigan and West Virginia, NVT can identify ancillary state departments that could financially support this program and develop comprehensive economic development plans.

Strategy 1.2.2: Invest in New Climate Resilient Affordable Housing

Currently the NSJV region has a collective RHNA target of over 100,000 housing units, with over 40% affordable housing units. Given that disinvested neighborhoods and low-income housing is disproportionately impacted by climatic stresses in the region; policies, strategies, and standards for climate-resilient affordable housing must be studied, experimented, and planned much in advance. Strategies are required not only in terms of construction and operations design, but also in the kind of housing most suitable for achieving climate resiliency.

SOCIAL HOUSING

Recently, Washington DC passed the Green New Deal for Housing Amendment Act of 2022 aiming to center vulnerable communities that are most impacted by climate disaster and emissions. The program aims to create more social housing for the working and middle-class population that will be built to net

[15] How Cities Can Tackle Both the Affordable Housing and Climate Crisis

[16] https://hcr.ny.gov/weatherization

zero emissions. The bill is premised on the idea that higher-income tenants can cross-subsidize the rents for lower-income tenants, all combined in a mixed-income project - thus, suggests social housing instead of the most common LIHTC route. These properties will rely on solar power to the maximum extent possible, use concrete made with hemp, minimal use of off-street parking, and will be located close to public transit. Currently, the bill aims to offset the added cost of construction as well as prevailing wages through cross-subsidization, housing production trust fund, and DC Green Bank.

While the success of the New Deal is yet to be realized, it sparks conversations about what kind of housing is most suitable for creating climate-resilient affordable housing. Social housing overcomes the challenge of developing isolated financial models for affordable housing and benefits from mixed-income mixed-use development. At the same time, it also allows the government to directly participate in the development and design process, instead of just becoming a medium for granting permissions.

EMPLOYER-ASSISTED HOUSING PROGRAMS

Creating a supportive policy environment for employer-assisted housing will help reduce greenhouse gas emissions by creating affordable opportunities for workers to live closer to their job site and reduce their commuting distance (benefits of transit-oriented housing described ahead). Employer-assisted housing can also benefit from cross-subsidizing the added construction cost for climate-resilient affordable units. Partnering with private actors can also help in exploring newer design and construction solutions for climate-resilient housing.

COMMUNITY LAND TRUST

Community Land Trusts[17] play a unique role in housing and resilience work in communities. Public-private partnerships between cities and CLTs can bring resources and expertise from the community into efforts to deliver just and sustainable housing solutions (Grannis, 2021)[18]. CLTs can be powerful partners in helping cities steward lands for publicly beneficial uses that enhance community resilience.

By partnering with land trusts to adaptively reuse vacant and underutilized land and to build climate-smart affordable housing options, NSJV can advance sustainability and resilience goals while also helping to maintain the financial viability of land trust partners (ibid). Additionally, CLTs are often cited as critical tools for counteracting the displacement pressures that often accompany redevelopment as a result of rising property taxes and rents (Davis et al, 2017)[19]. There are many case precedents (Appendix A) that can guide NSJV to formulate regulatory strategies for promoting CLTs that focus on enhancing housing resilience and sustainability, providing green space and other community amenities, and enhancing economic resilience.

[17] A community land trust (CLT), is a community-led nonprofit organization designed to hold land in trust for the benefit of the community

[18] "Community Land = Community Resilience - How community Land Trusts can support Urban Affordable Housing and Climate Initiative", Jessica Grannis, January 2021, Georgetown Climate Center

[19] "Common Ground: Community-Owned Land As A Platform for Equitable and Sustainable Development", John Emmeus Davis, 51 U.S.F. L. Rev. 1, 25–26 (2017).; Myungshik Choi et al., Can community land trusts slow gentrification, Jour. Urb. Affairs Vol. 40, Issue 3 (2018)

Strategy 1.3: Reducing cost of infrastructure by creating denser sustainable development

Dense development not only results in shorter travel distances and reduction of greenhouse gas emissions but also helps in reducing the cost of infrastructure as well as cost of transportation. Efficiency of transportation and infrastructure systems must be maximized and thus, housing and transportation planning policies must be strategically planned.

Strategy 1.3.1 : Facilitate and Promote Mixed-Use Development and Transit-Oriented Development

The RHNA plan for all three counties specifically emphasizes reducing greenhouse gas reduction targets provided by the State Air Resources Board pursuant to Section 65080, which can be achieved by shortening commute distances between housing and jobs. Further, the housing elements of all three counties include transit-oriented development as a strategy for affordable housing development but does not elaborate on necessary partnerships, stakeholder management, and earmarked sites.

California's Sustainable Communities and Climate Protection Act of 2008 (SB 375) requires each MPO to develop a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). A SCS outlines the plan for reducing per capita greenhouse gas emission by integrating the transportation network and related strategies with an overall land use pattern that accounts for projected growth, housing needs, changing demographics, and forecasted transportation needs among all modes of travel. This is a great opportunity for NVT to conduct a collective analysis toolkit for all the local jurisdictions and jointly prepare Sustainable Communities Strategies.

Further, the regional housing entity of NSJV must prepare a guide for local jurisdictions to revise land-use policies to allow denser, multifamily housing by right, reduce lot size minimums, eliminate parking requirements and height limits on buildings; and ultimately enable transit-oriented development close to jobs and services; all of which can reduce housing costs and lower carbon footprints.

Strategy 1.3.2: Reducing the risk of gentrification and creating anti-displacement policies

The San Joaquin Council of Governments hired Enterprise Community Partners and the CRC to better understand the displacement vulnerability of San Joaquin County households, as well as develop a housing policy toolkit which provides several anti-displacement strategies. Few of the key strategies include Rent Control, Rental Assistance Programs, Foreclosure Prevention and Tenant Opportunity to Purchase (TOPA). Currently these policies are built on case studies in other jurisdictions and have not been customized to address the specific needs of the region.

On the other hand, Stanislaus County has implemented an anti-displacement and relocation policy and plan under the citizen partnership plan for HUD programs. The plan aims to minimize displacement as a result of its CDBG, ESG, and HOME activities by analyzing potential displacement caused by any project and assuring that in rehabilitation projects, occupants are offered an opportunity to return. Further, the policy framework offers displacement assistance, as well as one-for-one replacement dwelling units. These strategies are limited to displacement caused by a few funding programs (CDBG, ESG, and HOME) involving residential or commercial rehabilitation or displacement caused by economic development.

The anti-displacement policy framework of both the counties should be extended to the entire region, along with the study of the potential displacement risk caused by potential housing policy and programs. The 'White Paper on Anti-Displacement Strategy Effectiveness' by Karen Chapple emphasizes the need to jointly develop a strategic plan for neighborhood stabilization, including a prioritization scheme for anti-displacement policies in the jurisdictions to incorporate into applications for state and federal funding (Chapple, 2021)[20]. Since displacement is a result of regional housing dynamics, especially for the NSJV region, anti-displacement policies at regional level are critical. Additionally, regional policies help to apply for regional grants and funding opportunities.

Strategy 1.3.3: Preserving Farmlands and Environmental Habitats

The San Joaquin Valley Region report for California's fourth climate change assessment suggests several potential zoning strategies to preserve farmlands in disadvantaged rural communities as well as environmental habitats in disinvested urban neighborhoods. For the former, the report suggests repurposing land surrounding disadvantaged rural communities into green areas, aquifer recharge projects, and wildlife corridors, which would revive ecosystems that are currently the most degraded in the state.

For the latter, the report suggests the creation of buffer zones (physical separation areas) surrounding disadvantaged communities that may help protect local aquifers and air quality. Buffers can be used for new economic activities with positive environmental and social externalities, including renewable energy, management of aquifer recharge, green corridors to preserve habitat, and nonpolluting industries. Sustainable land management in the buffers is important to avoid increasing environmental inequities. While the report does not frame these strategies for affordable housing development, it provides a zoning framework. At the same time, it fails to address the contradiction of creating green buffer zones with dense infill transit-oriented developments.

These contradictions are arising out of a siloed approach to climate responsive strategies and affordable housing development. While most reports acknowledge the need to address the disproportionate impact of climate change on affordable housing, they do not stress enough on the need for strategically planned climate-responsive housing development - enabling the need for a regional housing entity for the NSJV region. Along with larger zoning and regulatory frameworks for climate resilient affordable housing, the entity will identify specific issues and opportunities, creating localized policies, encouraging collaborations with local service providers, private actors, and public entities, as well as aim at creating green jobs in this sector.

[20] "White Paper on Anti-Displacement Strategy Effectiveness", Karen Chapple, Anastasia Loukaitou-Sideris, February 28,2021, California Air Resources Board

Approach 2: Reduce costs of building housing

Strategy 1: Reduce Construction Costs: While regional authority may not control broader labor market trends or the cost of materials, several levers could help mitigate rising costs.

1. **Shorten permitting and approval timelines to mitigate costs associated with uncertainties and delays**. Work with Local agencies to consider ways to shorten review and approval timelines, reducing risk for projects. these timelines can be extensive.[21] Affordable projects frequently encounter thorough scrutiny from various local departments, leading to prolonged and convoluted routes toward final permitting and approval. This extended pre-construction phase not only elevates the expenses associated with capital retention but also jeopardizes crucial funding deadlines, thereby posing a threat to project viability. The heightened risk and uncertainty inherent in the approvals process may compel general contractors and subcontractors to incorporate escalation clauses or elevate contingency costs within their contracts. This strategic approach aims to safeguard against potential future escalations in wages and materials costs, a precautionary measure should a project experience delays.[22]

2. **Reviewing local code for inefficiencies can also mitigate rising construction costs.** It is important to explore how the intersection of regulations may contribute to increased construction costs. An examination of methods to uphold environmental and safety standards, while simultaneously mitigating the financial impact on new housing, is advisable.

3. **Increase support for skill-training programs, such as apprenticeships and programs at community colleges, to assist in capacity building and skilling up the construction workforce.** The region needs a more robust labor pool to meet the demand for housing, especially as the region steps up its goals for climate-resilient affordable housing production.

4. **Support innovative construction methods and materials to lower construction costs.** Off-site construction can cut costs by up to 20% for a three or four-story wood-frame multifamily development, and reduce the construction timeline by 40-50%.[23] However, affordable housing projects encounter financial hurdles in adopting this method due to factory deposit requirements before or at construction loan finalization. Unlike private developers, affordable housing developers have limited access to flexible capital, constraining early spending for later savings. To overcome this, state or local governments could initiate a pilot program, providing supplemental revolving construction loans for affordable housing developers utilizing offsite technology, thereby catalyzing cost reductions in subsidized development.

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[21] "What Does the Research Tell Us about Prevailing Wage Laws? | Semantic Scholar," accessed November 21, 2023, https://www.semanticscholar.org/paper/What-Does-the-Research-Tell-Us-about-Prevailing-Duncan-Ormiston/ab4b929cc02e200480ebc1555308b6b70a5c4bef.

[22] "What Does the Research Tell Us about Prevailing Wage Laws? | Semantic Scholar."

[23] "Building Affordability by Building Affordably: Exploring the Benefits, Barriers, and Breakthroughs Needed to Scale Off-Site Multifamily Construction," *Terner Center* (blog), accessed November 21, 2023, https://ternercenter.berkeley.edu/research-and-policy/offsite-construction/.

5. **Streamline affordable housing entitlements and funding to help lower construction costs.** While some of the factors influencing the cost of affordable housing are no different from market-rate construction, there are aspects of costs that are unique to affordable housing projects. A key component among these is the fragmented regulatory and funding structure for financing affordable units. Resolving this fragmentation is difficult, but we recommend the regional authority consider emulating the Minnesota Housing Finance Agency in creating a consolidated Request for Proposals (RFP) for several funding sources, including LIHTC.[24]

Tackling Development Fees

1. **Adopt Objective Fee Standards**: Implementing a statewide standardized methodology with objective standards for determining development fees is crucial. This approach ensures a consistent and accountable process across cities while accommodating diverse infrastructure needs. Currently, the determination of fees lacks a standardized framework, leading to wide variations in both the types and amounts of fees charged by different cities. The adoption of objective standards would establish a more transparent and sensible approach, fostering predictability and fairness in fee assessments.

2. **Fee Transparency Policy:** Establishing a fee transparency policy is imperative for public trust and builder clarity. Cities should make up-to-date fee schedule information easily accessible to the public, promoting transparency and scrutiny. Additionally, providing detailed fee estimates early in the development process is essential. For instance, the city of Roseville serves as a model for transparency by offering free fee estimates and maintaining detailed fee schedules. Such practices provide clarity to builders, especially smaller ones lacking extensive contacts or large staff for accurate fee determination critical for financing and project feasibility.

3. **Review Utility Company Fee Processes:** An examination of utility company development fee processes is necessary to ensure transparency and accessibility. Transparency in how utility fees are assessed and communicated to the public is vital. Clear and accessible processes contribute to public understanding and confidence in the development fee structure.

4. **Define When Fees Can Be Levied and Changed:** Establishing a clear framework for when fees can be charged and changed during the development process brings much-needed certainty. Calculating all impact fees at the project submittal stage, rather than at the building permit stage, enhances predictability for builders. Furthermore, a well-defined timeline for negotiating development agreements prevents last-minute requests for additional fees or services, reducing the risk of sudden cost increases that could impede project progress.

5. **Explore Alternative Funding Sources**: Seeking alternative ways to finance the costs of growth is essential to reduce cities' reliance on development fees. Policymakers must address underlying

[24] "Consolidated RFP HTC," accessed November 21, 2023, https://www.mnhousing.gov/rental-housing/housing-development-and-capital-programs/rfps/rental-housing/housing-development-and-capital-programs/rfps/consolidated-rfp-htc.html.

fiscal challenges, such as Proposition 13 restrictions and declines in federal and state funding. Acknowledging and rectifying these issues will contribute to a more sustainable financial model for cities, allowing for responsible and affordable housing development.

Conclusion

Approach	Strategies	Key Recommendations
A1 Governance and Regulatory Frameworks	S1.1 Create a Regional Housing Entity	S1.1.1 Developing common framework for housing policies for all three counties, jointly administer housing programs, capacity building of local planners
	S1.2 Create Climate Resilient Affordable Housing	S1.2.1 Encourage and Fund retrofitting of existing homes (weatherization assistance)
		S1.2.2 Develop alternative housing models and programs: Community Land Trusts, Employer-Assisted Housing Programs, Social Housing
	S1.3 Reducing cost of infrastructure by creating denser sustainable development	S1.3.1 Facilitate and Promoting Mixed-Use Development and Transit-Oriented Development
		S1.3.2 Reduce Risk of Gentrification and creating anti-displacement policies
		S1.3.3 Preserve Farmland and Environmental Habitats
A2 Reduce costs of building housing	S2.1 Reduce Construction Costs	S2.1.1 Shorten permitting and approval timelines to mitigate costs associated with uncertainties and delays
		S2.1.2 Review local code for inefficiencies can also mitigate rising construction costs
		S2.1.3 Increase support for skill-training programs, such as

		apprenticeships and programs at community colleges, to assist in capacity building and skilling up the construction workforce
		S2.1.4 Support innovative construction methods and materials to lower construction costs
		S2.1.5 Streamline affordable housing entitlements and funding to help lower construction costs
	S2.2 Reduce Multitude of Development Fees Levied by authorities in the region	S2.2.1 Adopt Objective Fee Standards
		S2.2.2 Fee Transparency Policy
		S2.2.3 Review Utility Company Fee Processes
		S2.2.4 Define When Fees Can Be Levied and Changed
		S2.2.5 Explore Alternative Funding Sources

APPENDIX A

Case Precedents and Analysis of Applicability

The five case studies look at various facets of climate-resilient affordable housing. Case study 1, Green City Action Plan in Vancouver gives an overview of how the city achieved job growth by accelerating the green building Industry. Case study 2, the Green Market Acceleration Program (GMAP) in Toronto is a programmatic example of how the private sector can be roped in for infrastructure development. The Boston Case Study 3, shows what the design of a climate-resilient building entails. Case study 4, presents a unique model of green banks in Massachusetts that helps private investors access public funds for affordable housing which draws inspiration from the federal government's National Green Bank Program. Case study 5, Oakland CLT provides an example of how to maximize the power of community in balancing economic growth and affordability while maintaining enhanced climate resilience.

Summary of Case Precedents:

Case Studies	**Approach**	**Strategy**	**Actors / Stakeholders**
Green City Action Plan, Vancouer	Policy Job Creation	Attract companies to settle/establish. Create low-barrier employment opportunities and optimize existing jobs	City Government, Private Companies, local labors
Green Market Acceleration Program, Toronto	Private sector involvement	Government agencies allow the private sector to use city assets or infrastructure to apply new technologies for mutual benefit, which allows private sectors to collect data to improve their products and increase market share.	City Government, Local Companies, Foreign Investors
Climate Resilient Building, Boston	Sustainability Design	Use new materials /designs to increase the house's climate resilience	City Government, Private Companies, Public/Nonprofit Agencies
Green Bank, Massachusetts	Funding	Leveraging public funds to encourage private investment in	City Government, Public/Nonprofit Agencies

		low-carbon, climate-resilient infrastructure, and decrease risk of investment for investors	
Community Land Trust	Community Engagement	Community controlled Trust. Selling only houses but not land to house buyers to avoid the vicious competition of capital and keep community housing prices affordable	County and City government, Public/nonprofit Agencies, local communities

CASE STUDIES

1. **Greenest City Action Plan, Vancouver**

   With the vision to create huge new market opportunities, Vancouver has created a suite of innovative green building policies:

   - Zero Emissions Building Plan - Aiming to transition to zero-emission buildings in all new construction by 2030, by setting limits on emissions and energy use in new buildings.
   - BC Energy Step Code - provides an incremental approach to obtaining energy-efficient buildings that go above the base requirements of the BC Building Code and a pathway to ensuring all buildings province-wide are Net-Zero Energy Ready by 2032.

   In 2016, the green buildings sector in Vancouver had a total of 7,689 green jobs witnessing a growth of 53% since 2010. These jobs include designers, engineers, manufacturers, contractors, building inspectors, energy modelers etc. Having a supportive policy environment not only helps to bring the focus on incrementally transitioning into net-zero building and construction but also helps to gain regional attractiveness for companies seeking to set up their industrial base.

   Strategies + Applicability to NVT:

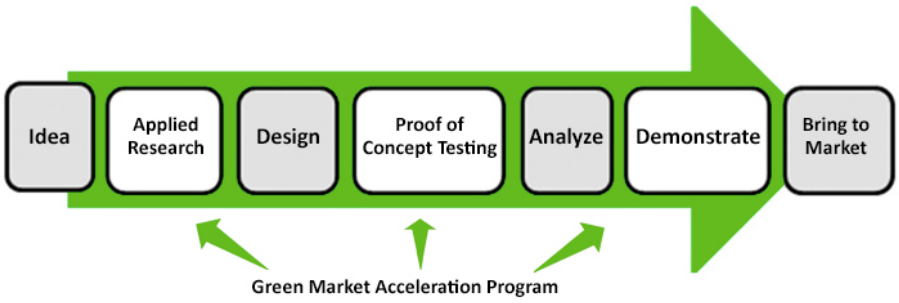
   - **Creating Low Barrier Jobs** - Many social enterprises focus on green industries like materials sorting, building deconstruction, or weatherization, and create jobs for those with barriers to employment. The Binners' Project, for example, created low-barrier jobs and generated more than 7,700 hours of economic activity and $109,200 in earned income for 340+ binners (2017).
     The baseline data indicates that a large share of NSJV's working population has a high school diploma or below, creating a need for low-barrier jobs. These jobs will not only

help towards achieving climate objectives in the housing sector but are also critical for the interim period of establishing training programs and partnerships.

- **Analyzing Trends within the Industry** - The city strategically studied key trends within the green building industries (windows, thermal breaks, heat pumps & heat recovery, contech, and prefabrication & lean construction) and analyzed their local demand and supply. This led to the creation of local manufacturing companies in the fenestration industry (windows), companies offering structural thermal break solutions and retrofitting solutions, as well as manufacturers of heat recovery ventilators to capture waste thermal energy.
  Currently, cities in California have their individual green building codes and ordinances. This could be a great opportunity for NSJV as a regional entity to study trends through the state (or at least neighboring regions) and strategically target trend industries, providing them with a supportive policy environment.

2. **Green Market Acceleration Program (GMAP) - Toronto**

The Green Market Acceleration Program (GMAP) provides local firms and foreign investors with an opportunity to collaborate with the City of Toronto in order to accelerate the development and commercialization of made-in-Toronto green technologies. Participants accepted into GMAP gain controlled access to City-owned infrastructure and assets (ie. buildings, streets, vehicles, water) for applied research, proof of concept, and demonstration pilots for their new green technologies during the early stages of product development. This program was piloted in 2016 and implemented in 2018.



The participants had access to subject matter expertise from the City Staff and project management support during the implementation stage. The ability to interact with City Staff resulted in learnings and improvements for their technology which led to more sales and market opportunities; as well as ensured that the technology meets the city's larger demand and objectives. GMAP led to significant commercial success, with one participant confidently reporting that 100 jobs were created as a result of the testing they were able to complete via GMAP.

While this initiative was not housing-specific, it attracted a few green housing firms. Such a program could be a great collaborative boost for NSJV helping them experiment with new and upcoming green technologies, as well as formulate a joint vision on how to address extreme climatic stresses. Providing subject matter expertise from the regional entity staff, NSJV could also direct participants towards experimenting with affordable technologies that could be plugged into affordable housing or even low-opportunity neighborhoods.

3. **Boston - Climate Resilience Building**

Overview: Boston is already experiencing climate change impacts including more extreme heat, rain, snow, and flooding events; the frequency and severity of which are forecasted to intensify. In 2016, the City launched Climate Ready Boston to advance resiliency practices and prepare for future impacts of climate change. Climate Ready Boston is fully integrated with Imagine Boston 2030, a citywide plan to guide Boston toward a more affordable, equitable, connected, and resilient future[25].

Case in Point: Bartlett Lot D is a mixed-use housing project under construction. The building design proposes 50 units for seniors aged 55 and older, amenity space, and a community art gallery. The passive enclosure of the building and its insulations make the building resilient to extreme heat (fig 1). This case study gives a broad design framework on how we can imagine multi-unit housing projects focusing on heat resistance in NSJV.

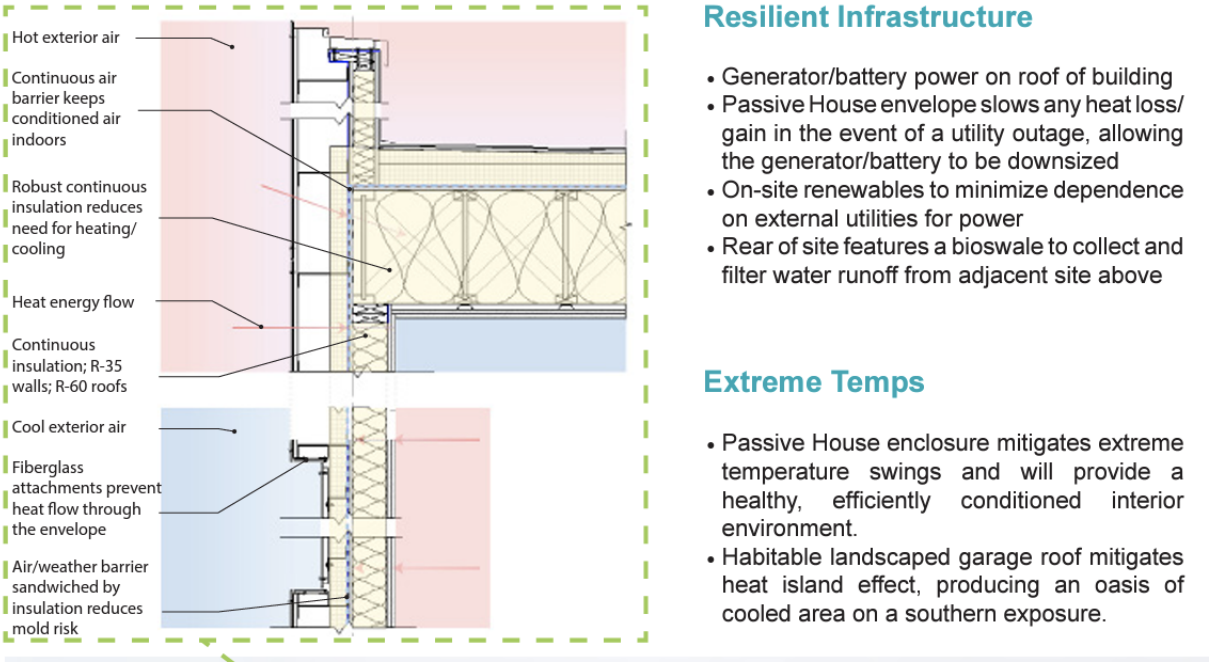


Fig 1: Design Proposal Bartlett Lot D

[25] "Climate Resilience Building Case Study | Boston Planning & Development Agency."

4. **Massachuettes - Green Bank**

Massachusetts is launching an innovative new green bank that could become a model NSJV as it tries to manage two crises at once: lack of affordable housing and climate change. While most green banks focus on clean energy, the Massachusetts Community Climate Bank is specifically designed to boost the state's stock of sustainable, affordable housing. This comes at the right time when states can now tap into billions of dollars in new federal funding for green banks under the Inflation Reduction Act. Green banks are public, quasi-public, or nonprofit entities that use public funds to encourage private investment in low-carbon, climate-resilient infrastructure. By using innovative financing strategies, green banks can lower the risks for private investors to support projects, which reduces the amount of public money needed to reach government goals like expanding renewable energy or, in this case, affordable housing.

The new Massachusetts Community Climate Bank is solely dedicated to climate-friendly and resilient affordable housing to meet the goals of the state's Climate Plan for 2050. That might include upgrading insulation and windows in older housing complexes to make them less leaky on hot and cold days, transitioning to electric household appliances such as heat pumps, or adding solar panels and electric vehicle chargers.

Residential buildings are one of Massachusetts' largest sources of greenhouse emissions, accounting for 19% of the total. Making housing more sustainable would cut those emissions and also help cut emissions in other sectors. For example, rooftop solar panels can reduce the demand for electricity from natural gas-fired power plants, allowing the state to close the plants or run them less often.

NSJV can learn by following a few foundational principles of green banks to increase financing for climate priorities while remaining financially viable.

1. Have a clear, well-defined mission.
2. Address market gaps rather than competing with private investment.
3. Be flexible enough to use a variety of financial instruments.
4. Have an independent, stable, and nonpartisan governance structure to ensure stability.

5. **Oakland - Community Land Trusts**

CLT, a community land trust, is a community-lead nonprofit organization. Oakland Community Land Trusts (OakCLT) was established in 2009, with funding from Federal Neighborhood Stabilization Program funds, aiming to expand and preserve housing and economic development for minority communities in Oakland. Its core mechanism is to acquire tax-delinquent and

foreclosed properties, repair or build affordable housing or make other uses, and sell houses and lease land to those in need but does not sell land ownership.

The essence of the project is collective ownership and embodies the value of the decommodification of land. Through CLTs, communities can get rid of capital's control of land and use land for construction through long-term leases. Many projects in CLT enhance green community building and land use efficiency.

1. Multi-unit housing/Multi-family rental
2. ADU
3. Urban Agriculture and Community Gardens
4. Vacant residential rehabilitation and upgrades

CLT can provide economic security for residents. According to CLT Survey Findings, 60% of residents' family economic security has improved after moving into CLT housing (33% remained unchanged and only 7% decreased). It also provides services and training to a large number of its residents, including Financial counseling, Employment opportunities (in CLTs), Supportive housing services, Employment workshops, Collective management training, Networking opportunities, and Resource linkage. CLT Survey Findings show that among the current 29 CLTs in California, 68% of residents say they participate in CLT events.

For NSJV, the CLT model can be used as a reference to amplify the role of the community. This model not only provides affordable housing, but the services and training it provides can also enhance the ability of the community and local workforce to participate in green community construction and continue to create job opportunities.